Patents for Computer-Related Inventions in India

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Introduction

Patents are exclusive territorial monopoly rights granted to inventors, in exchange for their disclosure of the invention, for a limited period of time, enabling them to cover the cost of innovation. All over the world patents are generally granted for tangible products or processes in all areas of technology that are new and useful with certain exceptions like, abstract ideas, mathematical algorithms and life forms.

With the rise of computer-related technology and with it the software industry in the last quarter of the last century it has become necessary to provide suitable intellectual property protection to this nascent, but increasingly important, area of technology.

Till recently, software was understood to be essentially a “mathematical formulae”. But over time case laws evolved world wide to bring computer-related inventions under the subject matter of patentable inventions. In Europe the invention should make a “technical contribution” to the state of art or have a “technical effect” and in the US it is enough if the invention produces a tangible result. US, Japan and Europe interpret their existing law suitably taking into consideration their national interests while granting patents for computer related inventions.

It is now generally accepted that pure ‘computer programs, whether in source or object code, shall be protected as literary works’. Copyright protects only “literal expressions” and not the “ideas” behind the computer programmes.

India, which amended its Patent Act 1970 recently, through an Ordinance, to bring it in line with the TRIPS agreement was on the threshold of providing broader protection to computer-related inventions. This move would have affected its own burgeoning software
industry. Fortunately, Left parties intervened to point out that the ordinance would only help foreign companies.

Situation in the United States of America

*Title 35 U.S.C.101* states that ‘whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any useful improvement thereof may obtain a patent’. The law does not expressly prohibit any field of technology from being patentable. Only the courts had excluded ‘laws of nature, scientific phenomena, and mathematical formulae’ from patentability5.

Till the 1970’s courts treated software-related inventions as unpatentable subject matter as ‘software was essentially mathematical formulae’6. However, in *Diamond v Diehr* the US Supreme Court decided that patent cannot be denied for an invention for the only reasons that ‘its claims contained mathematical formulae’7. But, it was the landmark decision of the Court of Appeals in the Federal Circuit (CAFC) in the *State Street Bank & Trust* case, concerning a US patent claiming a data processing system for implementing a particular investment structure that combines the advantages of economies of scale with the tax benefits of partnership, which held that any computer-related invention is a patentable under law if it produces a useful, concrete and tangible result8 that enlarged the scope of patentable subject matter. Then, further in *re Alappat* the court indicated that even where mathematical concept is embodied in a specific machine to produce a useful, concrete and tangible result then the mathematical concept is a subject matter for patent9.

Post *State Street Bank* and *re Alappat* patents are issued in the US for computer-related inventions and Business methods whether the invention has a technical character or not provided the invention is novel and produces useful, concrete and tangible result and is within the ambit of statutory subject matter for a patent10. In summary, it is now patentable in the US a computer programme that is executed in a computer or encoded on a readable medium.
Situation in Europe

Art 52(2) of the European Patent Convention (EPC) expressly excludes ‘computer related program per se’ and ‘methods of doing business per se’ from patentable subject matter, but, ‘only to the extent to which a European patent application or European patent relates to such subject matter or activities as such’\(^{11}\).

Till the late ‘90’s the European patent office guidelines and the Board of Appeal took a similar and consistent view that, ‘a computer programme claimed by itself or as a record on a carrier is unpatentable irrespective of its content’\(^{12}\). In T833/91, the technical Board of Appeal broadened the scope of patentability, ‘the technical contribution that allows a subject matter to be patentable might lie in (1) problem underlying the invention, (2) the means constituting the solution, or (3) the effects achieved by the solution of the underlying problem’\(^{13}\).

And later in three cases, relating to inventions of IBM, the scope of patenting software-related patents in Europe was considerably enlarged. All three relates to applications for patent by IBM which claimed for computer programme on a computer-readable medium. European patent Office rejected the applications stating that, ‘since the medium and the program recorded thereon were not technically related the technical character of the computer program could not be derived from the physical character of the storage medium on which it was recorded’\(^{14}\). The Board of Appeal in its conclusion reasoned that ‘technical effect is achieved by the internal functioning of a computer itself under the influence of said programme’\(^{15}\), ‘on the said condition all programmes must be considered as inventions’\(^{16}\), also a computer programme on a computer readable medium has the ‘potential to produce a technical effect’ and hence not excluded from patentability. In another case, the Board of Appeal concluded that all programs when run in a computer are by definition technical\(^{17}\). These findings are totally divergent to the decision in SOHEI, which stated that normal interactions between a program and a computer could not amount to a technical contribution and it is necessary to show that a new machine was created.

There are still divergent views on patentability of computer related inventions in Europe, some people want the computer programme to create a substantial technical contribution, others are interested in removing “computer programmes as such” from the excluded
subject matter for a patent. European Parliament is still discussing a draft directive on patentability of computer related inventions. It has not been able to reach a consensus.

**Situation in India**

Patent system in India is governed by the Patents Act 1970 (hereinafter 1970 Act). Unlike the US and Europe it was not any existing case laws that brought computer-related inventions under patentable subject matter but rather, it was the Patent Act as amended in 2003 that made the new area of technology a patentable subject matter.

The 1970 Act did not exclude explicitly patents for computer related inventions, as computer technology at that point of time was relatively unknown, but the definition of the term ‘invention’ itself excluded patents for computer programmes. The 1970 Act was amended in 2002 to bring it more, if not full, compliant to the TRIPs agreement which India had signed in 1994.

The Patents Act 1970 as Amended by (Amendment) Act, 2002 (hereinafter, the second Amendment Act) radically changed the definition of ‘invention’ and also excluded ‘computer programme per se’ from patentability. It was generally understood that a product embedded with a computer programme producing a ‘technical effect’ and having an inventive step is patentable.

The latest amendment brought through an ordinance to bring in major changes in the 1970 Act like, introduction of product patent for chemicals and drugs and the introduction of post grant opposition among other things amended the clause 3 (k) excluding computer programme per se from patentable subject matter. Sec. 3 of the Patent Act lists non-patentable subject matter, Sec.3 (k) excluded ‘a mathematical or business method or a computer programme per se or algorithms for being patentable. The Ordinance divided the contents of Sec.3 (k) into two; Sec.3 (k) now reads, ‘computer programmes per se other than its technical application to industry or a combination with hardware’ and the new Sec.3 (ka) excludes ‘mathematical method or a business method or algorithms’ from being patentable.
From a comparison of the Ordinance and the earlier Act it would be clear that the Ordinance had increased the patentability of computer-related inventions to an unprecedented scale.

Exclusion of ‘computer programmes *per se*’ without the qualifying clause in the Act had its equivalent in Art 52(3) of European Patent Convention. In the absence of any case law to rely upon, the law makers would have deemed it fit to add the qualifying clause ‘other than its technical application to industry or a combination with hardware’ to limit the invention to only such area as the law allows. But Sec.3(k) before its amendment by the ordinance was self-explanatory; the new qualifying statement had only increased the scope of patentability of computer-related inventions. It would have been possible to patent an application that just runs on a computer, it is not necessary for the programme to create a technical effect. All programs when run in a computer are by definition technical because, computer is a machine\(^23\).

The phrase ‘technical application’ has no equivalent any where in the world. European Board of Appeal which first emphasized the need for the invention to make a technical contribution consistently uses technical contribution, technical character or technical effect but never technical application for known reasons. The difference between technical application and ‘technical effect’ can be summarized as below.

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<thead>
<tr>
<th>‘Technical contribution’ or ‘Technical effect’</th>
<th>‘Technical application’</th>
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<tbody>
<tr>
<td>• Solves a technical problem or produces a technical effect either inside the machine or outside the machine</td>
<td></td>
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<tr>
<td>• Utilizing technical means to solve a technical problem</td>
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<tr>
<td>• Utilizing technical means to produce a technical effect</td>
<td></td>
</tr>
<tr>
<td>• Need not solve a technical problem or produce a technical effect</td>
<td></td>
</tr>
<tr>
<td>• Since a computer as a machine uses forces of nature every application that runs on a computer is technical</td>
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An invention to have a technical character needs solve a technical problem. Protection as envisaged by the Ordinance would have made MNC’s patent every computer programme without any substantial technical effect to prevent Indian companies to work in related areas of interest.
Also, it would have been possible to patent in India, among other things, a method of doing business irrespective of the fact that it is excluded from patentability\textsuperscript{24}.

**Implications to Indian Computer Industry**

It is generally understood now that there is no correlation between the innovativeness of the companies, particularly software companies, and the strength of patent protection\textsuperscript{25}. In fact, it is now understood that stronger patents for software-related inventions has not increased the inventiveness of the companies\textsuperscript{26} but rather is an inhibitor\textsuperscript{27}.

Sequential value addition and interoperability is the inherent characteristic of software related inventions. India as dynamic technology adopter has more chance on making sequential innovations. But, the broader protection that was offered would have only benefitted the technology leaders like the US and Europe to use it more as defensive strategy.

A weaker protection at this point of time, when Indian software industry is on the early stage of the learning curve is a necessity to redo the classic Indian pharma act\textsuperscript{28}.

**Notes**

\begin{enumerate}
  \item Software-related, computer-related, software-implemented and computer-implemented invention have the same the meaning
  \item Gottschalk v Benson, 409 US 63(1972)
  \item Art 10.1, TRIPS Agreement
  \item WIPO/IP/BIS/GE/03/07
  \item Mackay Radio & Tel. Co v Radio Corp of Am., 306 US 86,94 (1939); Funk Bros. Seed Co. v Kalo Inoculant Co., 333 US 127,130 (1948)
  \item Gottschalk v Benson, 409 US 63(1972)
  \item Diamond v Diehr, 450 US 1975(1981)
  \item State Street Bank & Trust Co v Signature Financial Group, 149F.3d 1368 (Fed. Cir. 1998)
  \item In re Alappat
  \item Examination Guidelines for Computer-Related Inventions, USPTO
  \item Art 52(3) EPC
\end{enumerate}
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Sec 291)(j) of The Patents Act 1970 “invention” means any new and useful-
   i. art, process, method or manner of manufacture;
   ii. machine, apparatus or other article;
   iii. substance produced by manufacture;
   iv. and includes any new and useful improvement of any of them, and an alleged invention;

Sec 2(1) (j) of the Patents Act 1970 as Amended by the Patents (Amendment) Act, 2002 “invention” means a new product or process involving an inventive step and capable of industrial application;

Sec 3(K) of the Patents Act 1970 as Amended by the Patents (Amendment) Act, 2002

The Patents Act 1970 as amended by the Patents (Amendment) Ordinance, 2004

Controlling benefits system/PBS T-0931/1995

Sec.3(ka), The Patents Act 1970 as amended by the Patents (Amendment) Ordinance, 2004


Hall (1993) quoted in Sequential innovation, patents and imitation, Bessen et al, 2000, Working Paper, MIT, ‘For industries like software or computers, there is actually good reason to believe that imitation promotes innovation and that strong patents (long patents of broad scope) inhibit it. Society might be well served if such industries had only limited intellectual property protection’.

Indian pharmaceutical industry benefited a lot from the absence of product patents, till recently, for drugs and pharmaceutical compositions. Indian companies were able to reengineer the patented molecule and find a cheaper and effective process of arriving at the molecule because of the weaker patent regime. On the way, Indian companies had built up a robust R&D infrastructure and are now in a confident position to face the competition from multinational companies.