

Patentability of Computer Programmes

INTRODUCTION:

The limited object of this module is to understand the position of the Indian Patents Act, 1970 on the issue of patentability of computer programmes. This calls for a brief understanding of the obligations and flexibilities under TRIPS which have a bearing on the ability of a member state such as India to identify and limit patentable subject matter. Accordingly, the patentability of computer programmes under Indian law prior to the ratification of the TRIPS Agreement is not being dealt with.

Article 27(1) of the TRIPS mandatorily requires member states to grant patents for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application. This obligation is subject to the flexibilities and exceptions provided under paragraphs 2 and 3 of Article 27 which permit member states to exclude subject matter from the scope of patentability on grounds of public order or morality. It is in exercise of this flexibility under TRIPS that India chose to include computer programmes *per se* in the list of its proscribed subject matter under Section 3 of the Patents Act. But before delving into the Indian law, let us briefly examine the position in European Union, United Kingdom and the United States.

POSITION IN THE EU

Article 52 of the European Patent Convention appears to come closest to the language of Section 3(k) although the former uses “as such” instead of “*per se*”. Consequently, it could help to consider decisions passed in the European Union on the issue of what are computer programmes as such. The decision of the European Technical Board of Appeals in *VICOM Systems Inc.*¹ is one of the earliest rulings interpreting Article 52 in the context of “computer programmes” as such. In this case, the patent applicant had claimed a method and an apparatus for digitally processing images in two-dimensional data arrays. The Board took the view that even if the concept underlying the subject matter of the patent application were to reside in non-patentable subject matter, so long as the patent claims are not directed towards claiming protection over the ineligible subject matter, the claims would not attract the prohibition of Article 52.

Critically the Board observed that an invention which would otherwise be patentable in accordance with conventional patentability criteria, ought not to be excluded from patent protection merely because the invention uses a modern technical means such as a computer programme to implement/execute its conventional functions.

The test laid down in the VICOM case was however departed from by the Technical Board of Appeals in the case of *Pension Benefits System Partnership*. The Board observed that the subject matter of a patent application must possess a technical character in order for it to be granted a patent. Therefore, so long as it could be established that the claims in a patent application are directed towards a technical subject matter, the claims shall not attract Article 52. It may be noted that while in the VICOM case it was held that merely because conventional functions are being performed through a modern technical means such as a computer, the system as a whole is not excluded from the scope of patentability, in the Pensions Benefits case it was held that the claimed subject matter must possess a technical character. This requirement of a technical feature to overcome the prohibition of Article 52 was applied in *Microsoft-Clipboard Formats I*. In the said case, the invention related to the use of Clipboard for data transfer. It was held that although a method of operating a computer may be executed using a computer programme, the claim would not necessarily attract the prohibition of Article 52.

POSITION IN THE UK

Besides Article 52 of the European Patent Convention, Section 1 of the UK Patents Act of 1977 also contains a prohibition against grant of patents to computer programmes as such. The interpretation of this provision by UK courts has been almost identical to interpretation of Article 52 of the EPC. Among the recent decisions that expostulate the patent eligibility of computer programmes in the UK, the decision of the High Court of Chancery Division in *Symbian Ltd. V. Controller General of Patents* (2009 R.P.C. 1) is an important one. This decision is an important one since the applicability of the test laid down in the *Aerotel Ltd v. Telco Holdings Ltd* (2006 E.W.C.A. Civ 1371). The *Aerotel* test is as follows:

1. The claims in the patent are to be properly construed to understand the scope of monopoly sought
2. The actual contribution made by the inventor has to be identified
3. Next it has to be determined if such contribution falls solely within excluded subject matter and

4. Finally, one has to verify if this contribution is technical in nature. This test guided the UK patent office until the *Symbian* decision.⁴⁴

In the *Symbian* case, the patent application claimed a dynamic digital library used in mobile phones. The UK Chancery Court held that a program written for a computer that enables an existing computer to process data in a new way and so produce a beneficial effect, such as increased speed, or more rapid display of information, or a new type of display of information is patentable since such effects could be treated as technical effects.

Yet another decision to consider would be *Halliburton Energy Services Inc*⁵. This case related to the use of a computer programme to increase efficiency and longevity of drill bits. In evaluating the patentability of the said subject matter, the Court observed that a Court must adopt a four stage approach to deal with issues relating to Section 1. Under this approach, the first step is to properly construe the claims of the patent application and identify the claimed inventive step which is the actual contribution of the applicant. It must then be assessed whether the claimed inventive step falls within the scope of patent ineligible subject matter. The final step is to determine whether the inventive step is actually technical in nature.

In the course of its analysis, the Court acknowledged the difficulty in evaluating patentability of inventions which use computers. It was held that an invention which makes a contribution that is technical in nature is patentable even if it was entirely implemented on a computer and even if the way it works is entirely a consequence of the computer program operating in the computer. Therefore, when faced with an invention which is implemented in a computer program, the mere fact of use of the computer does not normally answer patentability. What is decisive is the nature of the task performed by the programme. In other words, a computer programmed to perform a task which makes a contribution to the art which is technical in nature, is a patentable invention. In fact, the Court went on to hold that in such circumstances, the patentee is entitled to claim the computer programme itself. Although such a broad claim may not be permissible in India, the spirit of this observation seems consistent with the intention behind Section 3(k) of the Indian Act.

In a decision delivered in the case of *HTC v. Apple* ((2013) EWCA Civ 451), the UK Court of Appeals for England and Wales had the occasion to examine if an invention pertaining to touch sensitive screens would

attract the “computer programme” as such exception. After reviewing the decisions in *Halliburton* and *Vicom*, the Court laid down the following parameters to address the issue:

- A. Whether the invention has made a technical contribution?
- B. What the invention in substance relate to?

In the facts of the case, the Court held that if an invention could solve a challenge inside or outside a computer, it could be said to have a technical effect rendering it patentable. It was also held that the mere use of software for the implementation of the invention did not render it ineligible subject-matter.

POSITION IN THE USA

Unlike Section 3 of the Indian Act, the US Patent Act does not enumerate what is proscribed subject-matter. Consequently, one has to review the decisions of US Courts to understand the position of US law on patentability of computer programs. The decision of the US Supreme Court in *Diamond v. Diehr* (450 U.S. 175)⁷ is an important one since it held that every new and useful invention would be patentable, which appears to render eligible even computer programmes. In *State Street v. Signature Financial Group* (149 F.3d. 1368), the US Court of Appeals for the Federal Circuit held that the transformation of data, representing discrete dollar amounts by a machine through a series of mathematical calculations into a final share price, constitutes practical application of a mathematical algorithm, formula, or calculation because it produced a useful, concrete and tangible result. Further, it was held that a process, machine, manufacture or composition of matter employing a law of nature, natural phenomenon, or abstract idea is patentable subject matter even though a law of nature, natural phenomenon or abstract idea would not by itself be entitled to such protection. In *AT&T Corp v. Excel* (172 F.3d. 1352), it was held by the Federal Court that applications involving the use of mathematical principles would be patentable. Although not a case in which patentability of computer programmes was directly in issue, one of the most landmark patent decisions of the US Supreme Court is *Bilski v. Kappos* (561 U.S. 593), in which the Court held that even business methods are eligible for patent protection should they satisfy the machine/transformation test or have a practical application. Therefore, so long as the subject-matter of a patent application satisfies these criteria, it appears, according to the *Bilski* decision, that applications pertaining to computer

programmes too may pass muster.

In the recent decision of *Alice Corp v. CLS Bank International* (June 2014), the US Supreme Court was seized with the issue of patentability of a computer- implemented, electronic escrow service for facilitating financial transactions. The patent was invalidated on grounds that the claims of the patent claimed abstract ideas and did not add significantly more to the idea. That said, no guidance was offered by the Court on what would make a software program patentable despite alluding that specificity and practical application could help support the case of a patentee.

From the above discussion, it is evident that the position under US law on patentability of software programmes is the broadest and may not help us interpret the language of the Indian provision. Consequently, it would help to draw lessons from the EU and UK decisions. It could be said that a claim which is directed at a program that does not have a practical technical application is hit by the prohibition of “computer programme *per se*”. It remains to be seen if Indian Courts adopt the UK/EU approach in reading Section 3(k) restrictively or adopt the much broader US position.

COMPUTER PROGRAMMES *PER SE* UNDER SECTION 3(k):

The proscription on patentability of computer programmes under the Patents Act was introduced as part of the 2002 amendment. It must be noted that the prohibition in Section 3(k) is limited to a “computer programme *per se*” which is different from a prohibition on computer programmes altogether. It must be pointed out at this juncture that thus far an Indian court has not had the occasion to interpret the meaning and import of computer programmes *per se*.

That said, regard could be had to the interpretation of provisions in foreign patent legislations which are in *parimateria* with Section 3(k).

The 2002 amendment to Patents Act, 1970, incorporated Section 3 (k) to the Act by the virtue of which, computer programmes *per se* were precluded from grant of patents. However, this gave rise to a host of interpretations which led to inconsistencies in the grant of patents, with patents in some cases being granted to combinations of hardware and software or software with demonstrable technical application. An ordinance brought about in 2004 amended Section 3 (k) to widen the

scope of patentability to include “*Computer programmes having technical application to industry or in combination with hardware*”. In March 2005, the Patent (Amendment) Bill, 2005 was introduced in the Parliament and the amended section by way of the ordinance was part of the amendment bill. However, a press release by the Ministry of Commerce a few days cited the risk of monopoly being exercised by multinational corporations if the amendment was approved and therefore proposed a revocation of the amended provision. The same risk was reiterated in parliamentary oppositions and the Patents (Amendment) Act repealed the amendment introduced by the Ordinance. The Patents Act of 1970 was thus introduced to the pre-2002 position.

The Draft Manual of Patent Practice and Procedure issued by the Patent Office in 2008

stated that “*Claims directed to technical process, which is carried out under the control of a computer programme (whether by hardware or software) cannot be regarded as relating to computer programmes as such.*” Following this, the 88th Report of the Parliamentary Standing Committee on Commerce on Patents and Trademarks System in India stated that “*The Committee feel that the domain of “per se” in the definition needs to be clearly defined.*”

CRI Guidelines

In 2010, the Revised Draft Manual of Patent Office Practice and Procedure released by the Indian Patent Office laid down the following guideline. “*Mathematical methods, business methods, computer programmes per se and algorithms are not considered as patentable inventions*”.

The guidelines for examination of Computer Related Inventions were revised by the Patent Office in 2017. The revised guidelines of 2017 were issued in succession to the guidelines issued in 2016 which introduced new provisions in Paragraphs 5 and 6, excluding software from the purview of patent protection. However, this was seen as a great contradiction to the earlier guidelines issued in 2015 which allowed grant of patents to software claims. Following the release of the 2016 guidelines, a three member expert committee was constituted to re-examine the guidelines, in the light of “*concerns have also been raised in various quarters globally about these [2016] guidelines*” after representations were received from various stakeholders. In a stakeholder meeting after the constitution of the committee consisting of one member each from DIPP,

DeitY and CGPDTM's office, representations from 19 stakeholders were received. After holding its internal stakeholder consultation, the Deity sent the following recommendations to DIPP.

1. *"Software in conjunction with hardware resulting in novel configuration can be patentable subject matter."*
2. *DeitY recommends the removal of novel hardware requirement because it "supports innovation-driven ICT industry backed by IPRs" and because the ICT industry is moving towards software-induced performance improvement.*
3. *The distinction between software and hardware has blurred with reconfigurable hardware such as Field Programmable Gate Arrays."*

After a series of recommendations by the Expert Committee (EC) and a meeting between officials from DIPP and DoT, the DIPP in 2017 requested the EC to reconsider the use of certain language used in one of the recommendations and EC, replied with a modified recommendation, changing it from *"including claims whose contribution lies in "a novel configuration resulting from a combination of software and hardware and leading to enhanced functionality" as patentable subject matter"* to *"claims where technical contribution lies in the combination of software and hardware that results in the technical advancement in the configuration and leads to enhanced functionality"*

The revised guidelines were finally released on 30th June, 2017. Following the release of subsequent draft manuals for examination, draft IPR policy, and stakeholder and public consultations, the revised guidelines were issued. The latest Guidelines for Examination of Computer Related Inventions (CRIs) issued by the Indian Patent Office in 2017 lay down the following provisions in respect of CRIs.

"Since patents are granted to inventions, whether products or processes, in all fields of technology, it is important to ascertain from the nature of the claimed Computer-related invention whether it is of a technical nature involving technical advancement as compared to the existing knowledge or having economic significance or both, and is not subject to exclusion under Section 3 of the Patents Act
The sub-section 3(k) excludes mathematical methods or business

methods or computer programme per se or algorithms from patentability. Computer programmes are often claimed in the form of algorithms as method claims or system claims with some „means“ indicating the functions of flow charts or process steps. It is well-established that, while establishing patentability, the focus should be on the underlying substance of the invention and not on the particular form in which it is claimed.

What is important is to judge the substance of claims taking whole of the claim together. If any claim in any form such as method/process, apparatus/system/device, computer program product/ computer readable medium falls under the said excluded categories, such a claim would not be patentable. However, if in substance, the claim, taken as whole, does not fall in any of the excluded categories, the patent should not be denied.”

EMERGING CASE LAW JURISPRUDENCE IN INDIA

Telefonaktiebolaget LM Ericsson v. Intex

The legal battle in this case¹ surrounded the licensing of Standard Essential Patents (SEPs) owned by Ericsson. Ericsson, as plaintiff, claimed that Intex was selling products which claimed to be compliant with 2G, 3G and ARM standards. However, the SEPs which are required to comply with these standards were owned by Ericsson and Intex had not obtained the license from Ericsson to use the same. Intex on the otherhand claimed that before establishing the *essentiality* of the patent, its validity had to be established first and the Ericsson Patents were facing challenges on grounds of Section 8 and Section 64 of the Indian Patents Act to determine their validity. Intex alleged that Section 3(k) of the Act barred patentability of computer programs.

After reviewing the jurisprudence from comparative jurisdictions, the court noted the following in the context of Section 3(k):

“In the above provision it can be seen that the words per se in Section 3(k) were missing. In fact when this bill was referred to the Joint Parliamentary Committee, it was suggested by various experts and stake holders that India should follow the EU/UK route and not completely exclude computer program from patentability. The Parliament after accepting the aforesaid proposition, added the words per se which was introduced in section 3(k) enacted by

the Patent (Amendment) Act, 2002. Thus, it is appears to me prima facie that any invention which has a technical contribution or has a technical effect and is not merely a computer program per se as alleged by the defendant and the same is patentable. The objection raised by the defendant in the suit for infringement is not tenable, however, admittedly defendant's revocation petitions are pending, the same have to be considered on merit including the objection of Section 3(k) and (m). At this interim stage, this court is not impressed with the argument of the defendant that the injunction be refused on this ground. Therefore, it is incorrect to allege that the plaintiff has obtained Suit Patents by committing a fraud on the Indian Patent Office over un-patentable subject-matter with unduly broad claims."

Yahoo v. Controller, and Rediff

This case, where Intellectual Property Appellate Board (IPAB) held that *pure business methods* were not eligible for grant of patent in India is one of the major litigations on *business method patenting in India*. The application in question was a patent claim titled "*System and method for influencing a position on a search result listing generated by a computer network search engine*" which was later changed to "*A method of operating a computer network search apparatus*".

In the examination report issued by the Indian Patent Office, objections were raised on grounds of novelty and Section 3 (k) which states that "*a mathematical or business method or a computer programme per se or algorithms*" are not inventions¹⁹.

The IPAB, relying on the Indian Patent Office's Manual of Practice and Procedure on Business Method Patents and taking into account the United Kingdom's and United States' law on patenting of business methods, observed that as opposed to foreign jurisdictions like the aforementioned countries, the Indian law *does not permit grant of patents to business methods*; specifically excluding them from the purview of patentability. It held that:

"[W]e must place ourselves in 1998, to decide the patentability and what appears so easy and familiar today was new then. Even if we go back in time to 1998 the nature of invention is *still a method of doing business*. That does not change. There are huge innovations in the computers themselves, but the *invention claimed is not for the machine but for the method*. From

whichever point of time we look at it, it still looks to be a business method.”

Points to Remember

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- 1. Article 27(1) of the TRIPS mandatorily requires member states to grant patents for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application.**
 - 2. For a claim to be patentable under this heading it must contain technical character.**
 - 3. This requirement of a technical feature to overcome the prohibition of Article 52 was applied in Microsoft-Clipboard Formats.**
 - 4. Symbian Ltd. V. Controller General of Patents (2009 R.P.C. 1) laid down the Aerotel test.**
 - 5. Aerotel test :The claims in the patent are to be properly construed to understand the scope of monopoly sought and the actual contribution made by the inventor has to be identified**
 - 6. Next it has to be determined if such contribution falls solely within excluded subject matter and is of a technical nature.**
 - 7. In AT&T Corp v. Excel (172 F.3d. 1352) , it was held by the Federal Court that applications involving the use of mathematical principles would be patentable.**
 - 8. Finally, one has to verify if this contribution is technical in nature.**