

● PATENTING COMPUTER RELATED INVENTIONS: INDIA IN COMPARISON WITH US AND UK



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Abstract

Computer programme per se is not a patentable subject matter. But the issue does not settle here as a large number of computer related inventions are granted patents in various patent offices. Before the advent of TRIPs the status of computer program protection was undefined under the Paris Convention, which regulates global patent rights. Despite the TRIPs Agreement, the question of whether or not computer programs can be patented has not been solved completely. The present paper examines the interpretation of the exclusion from patentability of computer programme per se in American, English and Indian laws. Under the American law generally it is evident from the various decisions that the definition of what is patentable subject matter at the USPTO is in a state of flux. In the Indian context the problem further aggravated because of back to back guidelines issued by the Indian Patent Office in last few years. In India the lack of case law is another reason for the lack of clarity on the subject. The paper argues that the interpretation and possible scope of differences may not be in the interest of inventors and the same may also lead to a situation of confusion and uncertainty. Indian experience in relation to various guidelines issued during last few years indicates the same.

Key words

Computer related inventions, Patentable subject matter, Patent for CRI, Guidelines for Examination of Computer Related Inventions, and Patent manual.

I. INTRODUCTION

One of the most significant areas in which innovations are taking place in 21st century is information technology¹ and more particularly computer related inventions.² In the present information age information technology and related innovations shall decide the future of wealth creation for any country. It is the way we manage our intellectual asset that determines economic prosperity. Out of various forms of intellectual property protection Patent protection to inventions seem to affect the economic development of

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¹The term "Information Technology" encompasses the whole gamut of inputting, storing, retrieving, transmitting and managing data through the use of computers and various other networks, hardware, software, electronics and telecommunication equipment. Guidelines for Examination of Computer Related Inventions (CRIs) 2017, Office of the Controller General of Patents, Designs and Trademarks. available at: http://www.ipindia.nic.in/writereaddata/Portal/Images/pdf/Revised_Guidelines_for_Examination_of_Computer-related_Inventions_CRI.pdf

²Computer Related Inventions (CRIs) comprises inventions which involve the use of computers, computer networks or other programmable apparatus and include such inventions having one or more features of which are realized wholly or partially by means of a computer programme or programmes. *Ibid.*

any country. Patent law provides negative rights in the form of limited monopoly. In return the patent office demands detailed disclosure of the invention. Patent laws of various countries identify a list of non-patentable subject matter. In India Sections 3 and 4 of Patent Act, 1970 contain such list. Section 3(k) of the act provides that "computer programme per se in not a patentable subject matter". The exclusion raises some very relevant doubts such as what does this 'per se' mean? Do we have to go by meanings of dictionaries or other lexicons? Or the rulings of ECJ or US courts. It is felt that meaning of "per se" must be clearly defined. However, the answer to these questions may not be that simple. In the light of the role which India is playing in the field of information technology and also looking at the policy of Government of India to promote startups it becomes important to identify the clear boundaries of the above exception. The above objective of the government is evident from the inclusion of provisions for startups in the Patent (Amendment) Rules 2016 which provide for creation of Startup as a new category of applicant and facilitating Startup applications with 80% Fee concession and expediting examination of patent applications filed by startups and the applicants selecting Indian Patent Office as ISA/IPEA for their PCT applications.³

The ubiquity of computer related devices and other emerging technologies across different spheres of the economy pose new challenges to patent regimes across the world. Given the diverse nature of claims and applications in this sphere, there is a need to ensure certainty in the interpretation of the law - in the form of putting in place consistent protocols for the examination of patent applications for CRIs. Accordingly, patent offices indifferent jurisdictions have developed examination guidelines/ manuals for examination of patent applications from these areas of technology so as to achieve uniform examination practices and certainty in the grant of patents.

Before examining the national practices it shall not be out of context to mention the relevant provisions of the TRIPs Agreement which forms the single most important rule based international document for protection of intellectual property.⁴

Before the advent of TRIPs the status of computer program protection was undefined under the Paris Convention, which regulates global patent rights. Despite the TRIPs Agreement, the question of whether or not computer programs can be patented has not been solved. Article 27 of the agreement states that "...patents shall be available for any

³The Startup India program was launched by the Hon'ble Prime Minister on January 16, 2016. 80% fee concession in patent and 50 % in trademark has been provided through the patents and trademarks amendment rules, respectively. Complementing the startup initiative of Government of India, the Department of Industrial Policy and Promotion, a nodal agency for the purpose, launched the "Scheme for Facilitating Startups Intellectual Property Protection (SIPP)" to encourage IPR protection amongst Startups. The Scheme, which was initially in force up to 31-03-2017, has been subsequently extended for next 3 years. The scheme includes providing facilitators to start ups for filing/processing of their applications for patents, designs and trademarks and reimbursement of professional charges to facilitators. A list of the facilitators for patents, designs and trademark has been uploaded on the website and the office of CGPDTM has taken necessary steps for effective implementation of the SIPP scheme. Necessary assistance is provided through e-mails and help-desks in order to resolve the queries raised by Startups. Annual Report 2016-17, The Office of the Controller General of Patents, Designs, Trade Marks and Geographical Indications, India, at 23, available at:

http://www.ipindia.nic.in/writereaddata/Portal/IPOAnnualReport/1_94_1_1_79_1_Annual_Report-2016-17_English.pdf

⁴Comments and recommendations on the Guidelines for Examination of Computer-Related Inventions (CRIs), 2015



inventions...in all fields of technology, provided they are...capable of industrial application." The second and third paragraphs of the article allow member states to exclude from patentability some categories such as medical treatment, or inventions dangerous to health or environment, it makes no mention of computer programs.⁵ Thus the agreement leaves the issue open for the contracting parties to settle. This approach creates scope for different approaches to be adopted by various countries.⁶ It is in this context the present paper examines the interpretation of the exclusion from patentability of computer programme per se in American, English and Indian laws. The paper argues that the interpretation and possible scope of differences may not be in the interest of inventors and the same may also lead to a situation of confusion and uncertainty. Indian experience in relation to various guidelines issued during last few years indicates the same.

II. THE AMERICAN APPROACH

Under American law in order to get patent the claimed invention must relate to one of the four statutory categories.⁷ The four categories of invention that is deemed to be the appropriate subject matter of a patent viz. processes, machines, manufactures and compositions of matter.⁸ The claimed invention also must qualify as patent-eligible subject matter, i.e., the claim must not be directed to a judicial exception unless the claim as a whole includes additional limitations amounting to significantly more than the exception. The judicial exceptions are subject matter that the courts have found to be outside of, or exceptions to, the four statutory categories of invention, and are limited to abstract ideas, laws of nature and natural phenomena (including products of nature). It is also relevant to note that the Court in Alice Corporation has also emphasized that an

⁵TRIPS Agreement, Section 5: Patents: Article 27 Patentable Subject Matter 1. Subject to the provisions of paragraphs 2 and 3, patents shall be available 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. Subject to paragraph 4 of Article 65, paragraph 8 of Article 70 and paragraph 3 of this Article, patents shall be available and patent rights enjoyable without discrimination as to the place of invention, the field of technology and whether products are imported or locally produced. 2. Members may exclude from patentability inventions, the prevention within their territory of the commercial exploitation of which is necessary to protect order public or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the environment, provided that such exclusion is not made merely because the exploitation is prohibited by their law. 3. Members may also exclude from patentability: (a) diagnostic, therapeutic and surgical methods for the treatment of humans or animals; (b) plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof. The provisions of this subparagraph shall be reviewed four years after the date of entry into force of the WTO Agreement.

⁶Talat Kaya, "A Comparative Analysis of the Patentability of Computer Software under the TRIPS Agreement: The U.S., The E.U., and Turkey", 4(1), *Ankara Law Review*, (2007) at 46.

⁷Chapter 10 of the US Patent Act outlines the equivalent grounds and limitations of patentability before the US Patent and Trademark Office (USPTO). Section 101 states "Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title". This broad and unlimited definition for patentability meant that obtaining a patent in computer-related technologies was generally considered, for many years, more achievable at the USPTO than that at the EPO, and hence many inventors regarded the US as a gateway to obtaining patents for computer inventions.

⁸35 U.S.C. 101.

invention is not considered to be ineligible for patenting simply because it involves a judicial exception.⁹

The Supreme Court in *Mayo v. Prometheus*¹⁰ laid out a framework for determining whether an applicant is seeking to patent a judicial exception itself, or a patent-eligible application of the judicial exception. The first part of the Mayo test is to determine whether the claims are directed to an abstract idea, a law of nature or a natural phenomenon (i.e., a judicial exception). If the claims are directed to a judicial exception, the second part of the Mayo test is to determine whether the claim recites additional elements that amount to significantly more than the judicial exception. The Alice/Mayo two-part test is the only test that should be used to evaluate the eligibility of claims under examination. While the machine-or-transformation test is an important clue to eligibility, it should not be used as a separate test for eligibility, but instead should be considered as part of the "significantly more" determination in the Alice/Mayo test.¹¹

In *Alice Corp.*,¹² the Supreme Court identified the claimed systems and methods as describing the concept of intermediated settlement, and then compared this concept to the risk hedging concept identified as an abstract idea in *Bilski v. Kappos*.¹³ Because this comparison revealed "no meaningful distinction between the concept of risk hedging in *Bilski* and the concept of intermediated settlement at issue here", the Court concluded that the concept of intermediated settlement was an abstract idea.¹⁴ Although the Supreme Court has not delimited the precise contours of the abstract idea exception, it is clear from the body of judicial precedent that software and business methods are not excluded categories of subject matter.

Examples of Claims that are not directed to Abstract ideas:¹⁵

- i. If a Claim is based on or involves an abstract idea, but does not recite it, then the claim is not directed to an abstract idea. Some claims are not directed to an abstract idea because they do not recite anything similar to a judicially-identified abstract idea, although it may be apparent that at some level they are based on or involve an abstract idea.¹⁶
- ii. If a claim recites an abstract idea, but the claim as a whole is directed to an improvement or otherwise clearly does not seek to tie up the abstract idea, then the claim is not directed to an abstract idea. Some claims reciting an abstract idea are not directed to the abstract idea because they also recite additional elements (such as an improvement) demonstrating that the claims as a whole clearly do not seek to

⁹ *Alice Corp.*, 134 S. Ct. at 2354, 110 USPQ2d at 1980-81.

¹⁰ *Mayo Collaborative Service v. Prometheus Labs., Inc.*, 132 S. Ct. 1289 (2012).

¹¹ Manual of Patent Examining Procedure (Mpep) Ninth Edition, Revision 08.2017, Last Revised January 2018, available at: <https://www.uspto.gov/web/offices/pac/mpep/s2106.html>

¹² *Alice*, *Supra* note 9.

¹³ *Bilski v. Kappos*, 561 U.S. 593 (2010).

¹⁴ *Alice*, *Supra* note 9.

¹⁵ *Supra* note 9

¹⁶ Judicial decisions discussing such claims include *Enfish LLC v. Microsoft Corp.*, 822 F.3d 1327, 1336, 118 USPQ2d 1684, 1689 (Fed. Cir. 2016) (claims to self-referential table for a computer database were based on, but not directed to, the concept of organizing information using tabular formats).



tie up the abstract idea. In such claims, the improvement, or other additional elements, shifts the focus of the claimed invention from the abstract idea that is incidentally recited.¹⁷

However, the lack of definition of what is considered "abstract" in the two-step test introduced uncertainty which made the outcome of prosecution of computer-related technologies at the USPTO unclear. In the immediate aftermath of Alice, many applications related to computer-related technology were flatly refused.¹⁸

Further in *Enfish LLC v. Microsoft Corp*¹⁹ the United States Court of Appeal for Federal Circuit observed in relation to Alice decision that "we do not read Alice to broadly hold that all improvements in computer-related technology are inherently abstract and, therefore, must be considered at step two. Indeed, some improvements in computer-related technology when appropriately claimed are undoubtedly not abstract, such as a chip architecture, an LED display, and the like. Nor do we think that claims directed to software, as opposed to hardware, are inherently abstract and therefore only properly analyzed at the second step of the Alice analysis. Software can make non-abstract improvements to computer technology just as hardware improvements can, and sometimes the improvements can be accomplished through either route."

It was further observed that "we thus see no reason to conclude that all claims directed to improvements in computer-related technology, including those directed to software, are abstract and necessarily analyzed at the second step of Alice, nor do we believe that Alice so directs. Therefore, we find it relevant to ask whether the claims are directed to an improvement to computer functionality versus being directed to an abstract idea, even at the first step of the Alice analysis."

Although the Enfish case casts some new light on patenting for computer-related technologies, the newly introduced requirements generally appear very strict and it is evident that the definition of what is patentable subject matter at the USPTO is in a state of flux.²⁰

III. UK LAW

Section 1(2) of the UK Patents Act, 1977 enumerates what are not inventions.²¹ The

¹⁷Judicial decisions discussing such claims include *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299, 1315, 120 USPQ2d 1091, 1102-103 (Fed. Cir. 2016) (claims to automatic lip synchronization and facial expression animation are directed to an improvement in computer-related technology and not to an abstract idea),

¹⁸Emanuele Mele, *An Applicant's Guide to Patenting Computer Programs in the US and Europe*, Available at https://www.hmc-ip.com/content/docs/Patenting_Software.pdf

¹⁹*Enfish LLC v. Microsoft Corp*, Decided: May 12, 2016 at p 11.

²⁰Emanuele Mele, *Supra* note 18.

²¹The UK Patents Act, 1977 Section 1: Patentable Inventions (1) A patent may be granted only for an invention in respect of which the following conditions are satisfied, that is to say - a. the invention is new; b. it involves an inventive step; c. it is capable of industrial application; d. the grant of a patent for it is not excluded by subsections (2) and (3) below; and references in this Act to a patentable invention shall be construed accordingly.

(2) It is hereby declared that the following (among other things) are not inventions for the purposes of this Act, that is to say, anything which consists of- a. a discovery, scientific theory or mathematical method; b. a literary,

judgment in *Aerotel Ltd v. Telco Holdings Ltd & Ors*²² (*Aerotel/Macrossan*) provides a framework for the examiner to assess, and decide upon, the issue of excluded matter. The test comprises four steps, which are as follows: (1) Properly construe the claim; (2) identify the actual contribution; (3) ask whether it falls solely within the excluded subject matter; (4) check whether the actual or alleged contribution is actually technical in nature. The third step does not require determining whether the contribution falls solely within the excluded subject matter categories as they are listed in Section 1(2), but rather whether it falls solely within excluded subject matter as such. The "as such" qualification therefore narrows what is excluded - inventions may appear to fall solely with the excluded categories, but are not excluded as such.²³

*AT&T Knowledge Ventures/Cvon Innovations v. Comptroller General of Patents*²⁴ (*AT&T/CVON*), set out five signposts that is considered to be helpful when considering whether a computer program makes a relevant technical contribution. The signposts are:

- i. whether the claimed technical effect has a technical effect on a process which is carried on outside the computer (from *Vicom*²⁵)
- ii. whether the claimed technical effect operates at the level of the architecture of the computer; that is to say whether the effect is produced irrespective of the data being processed or the applications being run (from *IBM T 0006/83*, *IBM T 0115/85*, *Merrill Lynch, Symbian*)
- iii. whether the claimed technical effect results in the computer being made to operate in a new way (from *Gale*),
- iv. whether the program makes the computer a better computer in the sense of running more efficiently and effectively as a computer (from *Vicom* and *Symbian*²⁶)
- v. whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented (from *Hitachi T 0258/03* - note that the problem in question must be a technical problem)

In the case of *Halliburton Energy Services Inc.*,²⁷ which related to a computer program which was meant to increase the drilling efficiency drill-bits and their operational life, the U.K High Court, Chancery Division (Patents Court) considered this exception in the context of computer program as well as mental act. It has been held by the Court in Paragraphs 30 & 32 that:

dramatic, musical or artistic work or any other aesthetic creation whatsoever. a scheme, rule or method for performing a mental act, playing a game or doing business, or a program for a computer; d. the presentation of information; but the foregoing provision shall prevent anything from being treated as an invention for the purpose of this Act only to the extent that a patent or application for a patent relates to that things as such.

²²Rev 1 [2007] RPC 7.

²³*Aerotel* was followed by a number of domestic first instance decisions which sought to apply it, namely *Cappellini's Application*; *Bloomberg LLP's Application* (2007), *Ineida Indian Nation's Application* (2007); *Raytheon Co's Application* (2008); *Astro Clinica v. Comptroller General* (2008), and *Autonomy Corp Ltd's Patent Application* (2008). *Terrell on the Law of Patents*, 18th Edition, Sweet & Maxwell(Thomson Reuters),2016 at 49.

²⁴[2009] EWHC 343 (Pat).

²⁵Case No. T 208/84.

²⁶*Symbian v. Comptroller- General of Patents* [2009 R.P.C 1].

²⁷2011 EWHC 2508 Pat.



Para. 30. The difficulties in this area arise mostly in relation to inventions which involve the use of computers. All the Court of Appeal cases (from Merrill Lynch to Symbian) are about inventions implemented in software. The simple problem is that computer programs (as such) are excluded by s1(2)(c) (c.f. EPC Art 52(2)(c) and 52(3)). Whether it was so clear in the past however, one thing is clear today. An invention which makes a contribution to the art which is technical in nature (to echo Kitchin J's words in Crawford) is patentable even if it is implemented entirely on a computer and even if the way it works is entirely as a result of a computer program operating on that computer. The outcome of the Symbian case proves that.

Para. 32. Thus when confronted by an invention which is implemented in computer software, the mere fact that it works that way does not normally answer the question of patentability. The question is decided by considering what task it is that the program (or the programmed computer) actually performs. A computer programmed to perform a task which makes a contribution to the art which is technical in nature, is a patentable invention and may be claimed as such. Indeed (see Astron Clinica [2008] RPC 14) in those circumstances the patentee is perfectly entitled to claim the computer program itself. The technical contribution test has again been reiterated in this judgment.

The Court of Appeal once again considered the computer programme exclusion in *HTC v. Apple*²⁸ and held that if the invention could solve a problem within the computer or outside the computer, in either case it can have a technical effect and hence be patentable. Further, merely because the invention is implemented in software, does not make the invention non-patentable.

It seems unlikely that the above discussion represents the last word on this subject but in the absence of any admissible referral to the Enlarged Board of Appeal and/or any consideration by the Supreme Court, the law under the 1977 Act is as set out in *HTC v. Apple*.²⁹ From the above it is clear that even the UK, like EU does not reject software based inventions on the ground of excluded subject matter.

IV. INDIAN POSITION

In India, the Patent Amendment Act, 2005 sought to introduce software patent. The amendment proposed in the Patent Amendment Act, 2005 for clause 3 (k) was, "a computer programme per se"³⁰ other than its technical application to industry or a combination with hardware; a mathematical method or a business method or algorithm." However, this amendment was rejected by the Indian Parliament, which chose to retain clause 3 (k) as it is.³¹ The changes suggested in the ordinance were taken

²⁸*HTC v. Apple*, [2013] EWCA Civ 451.

²⁹Terrell on the Law of Patents, 18th Edition, Sweet & Maxwell (Thomson Reuters), 2016 at 53.

³⁰The term "per se" is not defined in Indian statutes including the Patents Act, 1970 and hence, for interpretation of this term, the general dictionary meaning is being used. The general dictionary meaning of "per se" is "by itself" or "in itself" or "as such" or "intrinsically" - to show that you are referring to something on its own, rather than in connection with other things. Guidelines for Examination of Computer Related Inventions (CRIs) 2017, Office of the Controller General of Patents, Designs and Trademarks. available at: http://www.ipindia.nic.in/writereaddata/Portal/Images/pdf/Revised_Guidelines_for_Examination_of_Computer-related_Inventions_CRI_.pdf

³¹In India Section 3 (k) and (m) were added by 2002 Amendment Act. The provision as proposed in the Patent (Second Amendment) Bill, 1999 reads as under: "4. In section 3 of the principal Act, - ... (k) a mathematical or

back.³² As the Patent Act clearly says that computer software per se is not patentable, there are differences between pro-software and anti-software patent supporters.³³ It may also be argued that the clause that software per se is not patentable would mean that only software as part of a larger invention of which it is a part could be considered for a patent as a whole provided it meets the criteria of patent given in the Act. This makes clear that software "standing alone" is not patentable under Indian law. It is pertinent that as software cannot execute on its own without any hardware, this means that software running on general purpose data processing machine (computer) do not qualify for patents. The mere addition of conventional data processing equipment to a software application does not turn that application into an invention. Only if the software application is a part of a large system and the system as a whole is eligible for patent, can the invention be patented as a whole.³⁴

In Section 3 (k), it is mandated that the computer programs are 'per se' not patentable. Now what does this 'per se' mean? Do we have to go by meanings of dictionaries or other lexicons? Or the rulings of ECJ or US courts. It requires that the domain of per se be clearly defined.³⁵

According to the report of the Joint Committee on the Patent (Second Amendment) Bill, 1999, "the insertion of 'per se' was proposed because sometimes the computer programme may include certain other things, ancillary thereto or developed thereon. The intention here is not to reject them for grant of patent if they are inventions. However, the computer programmes as such are not intended to be granted patent. The amendment was proposed to clarify the purpose".³⁶ The decision of the Delhi High Court in the *Ericsson v. Intex*³⁷ matter made it clear that computer related inventions that have a technical contribution or technical effect are patentable in India, aligning with the position taken by courts in the EU and the UK.

In order to understand the exception, it is relevant to mention the relevant provisions of the Manual of Patent Office. In relation to Section 3(k) of the Act the clause 08.03.05.10 of Manual of Patent Office Practice and Procedure Version 01.11 clarifies that a mathematical or business method or a computer programme per se or algorithms are not inventions and hence not patentable.

business method or a computer program per se or algorithms: ... (m) a mere scheme or rule or method of performing mental act or method of playing game." 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. I.A. No. 6735/2014 in CS (OS) No.1045/2014 at 151.

³²Ravindra Chingale and Srikrishna Deva Rao, "Software Patent in India: A Comparative Judicial and Empirical Overview", 20 *Journal of Intellectual Property Rights*, July 2015 at 212.

³³*Id.* at 213.

³⁴Comments on Draft Manual of Patent Practice and Procedure (2008), All Indian Peoples Science Network, New Delhi, available at : http://www.ipindia.nic.in/writereaddata/Portal/IPOGuidelinesManuals/1_60_1_16-indian-peoples-science-network-newdelhi.pdf

³⁵Parliament of India Rajya Sabha Department Related Parliamentary Standing Committee on Commerce, Eighty Eighth Report on Patents And Trade Marks Systems In India, 2008

³⁶Parliament of India Rajya Sabha The Patents (Second Amendment) Bill, 1999 Report of The Joint Committee, 2001

³⁷CS(OS) 1045/2014



- i. Under this provision, mathematical methods, business methods, computer programmes per se and algorithms are not considered as patentable subject matter.
- ii. Mathematical methods are considered to be acts of mental skill. A method of calculation, formulation of equations, finding square roots, cube roots and all other methods directly involving mathematical methods are therefore not patentable. With the development in computer technology, mathematical methods are used for writing algorithms and computer programs for different applications and the claimed invention is sometimes camouflaged as one relating to the technological development rather than the mathematical method itself. These methods, claimed in any form, are considered to be not patentable.
- iii. Business Methods claimed in any form are not patentable subject matter. The term Business Methods involves whole gamut of activities in a commercial or industrial enterprise relating to transaction of goods or services. With the development of technology, business activities have grown tremendously through e-commerce and related B2B and B2C business transactions. The claims are at times drafted not directly as business methods but apparently with some technical features such as internet, networks, satellites, telecommunications etc. This exclusion applies to all business methods and, therefore, if in substance the claims relate to business methods, even with the help of technology, they are not considered to be a patentable subject matter.
- iv. Algorithms in all forms including but not limited to, a set of rules or procedures or any sequence of steps or any method expressed by way of a finite list of defined instructions, whether for solving a problem or otherwise, and whether employing a logical, arithmetical or computational method, recursive or otherwise, are excluded from patentability.
- v. Patent applications, with computer programme as a subject matter, are first examined with respect to (b), (c) and (d) above. If the subject matter of an application does not fall under these categories, then, the subject matter is examined with a view to decide whether it is a computer programme per se.
- vi. If the claimed subject matter in a patent application is only a computer programme, it is considered as a computer programme per se and hence not patentable. Claims directed at computer programme products are computer programmes per se stored in a computer readable medium and as such are not allowable. Even if the claims, inter alia, contain a subject matter which is not a computer programme, it is examined whether such subject matter is sufficiently disclosed in the specification and forms an essential part of the invention.³⁸
- vii. If the subject matter of a patent application is not found excluded under the foregoing provisions, it shall be examined with respect to other criteria of patentability.

Until 2015, there was no uniformity among the four patent offices (Kolkata, Mumbai, Delhi and Chennai) in India on the issue of grant of software patents (a fact which was also noted by the Intellectual Property Appellate Board (IPAB) in the case, *Yahoo v.*

³⁸Manual of Patent Office Practice and Procedure Version 01.11 As Modified on March 22, 2011, Published By: The Office of Controller General of Patents, Designs & Trademarks.

Controller, and Rediff). In the absence of any guidelines on the issue of patents on computer related inventions (CRI), it was found that while some patent offices refused to grant software patents, others were inclined to grant patents on software. In order to remove inconsistencies related to grant of software patents in India, the Controller of Patents issued guidelines related to CRI.³⁹

A draft version of the computer-related inventions (CRI) guidelines was first published by the Indian Patent Office (IPO) on June 28 2013. The IPO consulted various stakeholders and considered their feedback. The final guidelines were published on August 21 2015. This version was more liberal than the draft version. However, the final guidelines were put in abeyance using a public notice on December 14, 2015 without clearly specifying reasons for the changes. A revised set of guidelines considered more restrictive than the previous set was issued on February 19 2016. Aggrieved by the restrictive terms, stakeholders made requests to the Department of Industrial Policy and Promotion (DIPP) and the IPO to reconsider the revised guidelines. The latest version was issued on June 30 2017 and marks a return to the liberal approach. This version is based on the recommendations of an expert committee established by the DIPP. The committee examined various representations and held intensive stakeholder consultations in order to consider a diverse range of views.⁴⁰

According to CRI Guidelines of 2016 examiners may rely on the following three stage test in examining CRI applications: properly construe the claim and identify the actual contribution; if the contribution lies only in mathematical method, business method or algorithm, deny the claim; and if the contribution lies in the field of computer programme, check whether it is claimed in conjunction with a novel hardware and proceed to other steps to determine patentability with respect to the invention. The computer programme in itself is never patentable. If the contribution lies solely in the computer programme, deny the claim. If the contribution lies in both the computer programme as well as hardware, proceed to other steps of patentability.

The Guidelines clarify that 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.

In relation to the Guidelines the Special 301 Report of USA 2016 observes that "India has also introduced unpredictability for patent applicants through the issuance of guidelines on the patentability of computer-related inventions following an opaque process for soliciting comments.

With respect to the computer-related invention guidelines, there was a lack of transparency in the process used to arrive at the current set of guidelines and the

³⁹Devika Agarwal, Software Patents: Prohibited under Indian law but granted in Spirit, available at: <http://www.firstpost.com/tech/news-analysis/software-patents-prohibited-under-indian-law-but-granted-in-spirit-3702725.html>

⁴⁰Joginder Singh, International report - Latest Guidelines for Examination of Computer - Related Inventions, available at: <http://www.iam-media.com/reports/detail.aspx?g=655f040d-d793-4449-962c-f48827c2a72c>



guidelines reflect a seemingly narrow interpretation of the relevant law, both of which raise concerns and threaten to undermine an important sector of India's economy."⁴¹

It is relevant to note that the criteria of 'further technical effect' and 'technical advancement' as mentioned in the previous guidelines have been removed completely in the 2016 Guidelines. Instead, a new, detailed test has been laid down under Regulation 4.2. Patent applicants will have to clearly prove that their invention shows either technical advancement or economic significance in comparison with existing inventions in the field.⁴²

Further, it is also important to note the observation of Ashish Bharadwaj that "the revised CRI guidelines are also likely to curtail the global presence of Indian software firms that have so far relied mostly on software-enabled services. Growth of Indian software companies (including a host of dynamic start-ups) will be determined by their ability to come up with patentable innovations to reach out to the global marketplace."⁴³

Criticisms of 2016 led to a new 2017 guidelines for CRIs. The most notable feature of the recent guideline is that it has done away with the three step examination process of the previous guidelines. The recent document does not refer to novel hardware for granting patent. The revisions have been carried out with great attention and even subtle or implicit references to hardware have been removed. For example, paragraph 4.4.5 of the 2016 guidelines contained two references to the "implementation" of claimed inventions. These have now been replaced by the word "performance". Implementation presupposes hardware, while performance does not. Like traitors in Ancient Rome or the intelligentsia in Stalinist Russia, the novel hardware requirement seems to have been killed and buried in an unmarked grave, purged completely from official memory.⁴⁴

The official position of Indian Patent Office as quoted by PTI on the 2017 guidelines is that the new guidelines only present clarification to the patent office's earlier guidelines. There is no change as far as policy of granting patent to CRIs.

"The language of the guidelines issued in February 2016 was somehow giving the understanding that 'novel hardware' clause is mandatory to seek patents for CRIs, which was not the case. But the Indian Patent Office has revised those guidelines and clarified that this clause is not mandatory."⁴⁵

Clause 4.5.4 of Guidelines for Examination of Computer Related Inventions (CRIs) 2017, Office of the Controller General of Patents, Designs and Trademarks provides for Claims

⁴¹2016 Special 301 Report, Office of the United States Trade Representative, April 2016 at 42, available at: <https://ustr.gov/sites/default/files/USTR-2016-Special-301-Report.pdf>

⁴²Asheeta Regidi, India says no to Software Patents, here's What This Means, available at: <http://www.firstpost.com/tech/news-analysis/india-says-no-to-software-patents-heres-what-this-means-3677617.html>

⁴³Ashish Bharadwaj, Patents on software: India's CRI Guidelines Create Impractical Situation, available at: <http://www.financialexpress.com/opinion/patents-on-software-indias-cri-guidelines-create-impractical-situation/424635/>

⁴⁴Balaji Subramanian, Patent Office Reboots CRI Guidelines Yet Again: Removes "novel hardware" Requirement, available at: <https://spicyip.com/2017/07/patent-office-reboots-cri-guidelines-yet-again-removes-novel-hardware-requirement.html>

⁴⁵<http://www.india.com/news/agencies/govt-eases-process-to-seek-cri-patents-revised-norms-out-2288062/>

directed as "Computer Programme per se": Claims which are directed towards computer programs per se are excluded from patentability, like: claims directed at computer programmes/ set of instructions/ Routines and/or Sub-routines; and claims directed at "computer programme products"/"Storage Medium having instructions"/"Database"/"Computer Memory with instruction" stored in a computer readable medium.

In the final analysis it is felt that while addressing the "computer programme per se" exclusion under Indian patent law, the recent CRI guidelines, though vague, appear to adopt a position similar to that proposed by the Court of Appeal of England and Wales in *Aerotel/Macrossan's*.⁴⁶ As mentioned before the test comprises four steps, which are as follows: (1) Properly construe the claim; (2) identify the actual contribution; (3) ask whether it falls solely within the excluded subject matter; and (4) check whether the actual or alleged contribution is actually technical in nature.

V. CONCLUSION

The merits of above guidelines being binding on the patent applicants are questionable, as they supersede neither the statute nor judicial precedents. However, these guidelines will be binding on the patent examiners and controllers. The latest guidelines will also have noteworthy practical implications. As examiners and controllers are obliged to abide by the latest guidelines while examining patent applications involving computer-related inventions, their approach when issuing examination reports or granting or rejecting patents to computer-related inventions will be determinative.⁴⁷ The merit of the recent guidelines is that now the inventors are assured that they need not always include a novel hardware for claiming patent on computer related inventions. The Indian law has largely followed the English and European laws. And it may be concluded that the recent attempt is in line with the *Aerotel* test of UK. India unlike USA and UK does not have the advantage of series of judicial decisions which could have developed the law on the point, therefore it becomes important that we explain the legal provisions with guidelines and thus to that extent the guidelines of Indian Patent Office are useful. The foregoing leads to the conclusion that the position of law and its interpretation is much less than harmonized and is in the state of flux even in USA and UK.

⁴⁶Jacob Schindler, India's latest computer-related invention rules are a boon to SEP holders, but leave plenty of uncertainty, available at <http://www.iam-media.com/Blog/Detail.aspx?g=0122504a-1c2f-437d-8568-92c9914fc05e>

⁴⁷Joginder Singh, *Supra* note 40.