Navigating the Complexities of Patentability of Computer Programs in India: Need for Roadmap

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ABSTRACT: The computer programs and its protection has become a complex and contentious issue, resulting in intense debates among policymakers, legal experts, and industry stakeholders, driven by the increasing of technological advancement and evolving legal interpretations. This paper aims to provide a comprehensive analysis of the contemporary issue surrounding the patentability of computer programs and the challenges faced by the inventors and innovators from the initial stage where the software's were not held as patentable subject matter and its development throughout different decades and provides potential solution to promote innovation, competition and collaboration. It also concludes by offering recommendations for the future directions in patent policy and practice to make sure that the patent system supports the continued growth and development of the software industry.

KEYWORDS: Computer programs, Invention,Innovation, Patent System and Software.

I. INTRODUCTION

Patent for Computer Related Inventions (CRI's) or software patents unfortunately is an evergreen issue in India due to the confusion, changes, lack of proper laws and much more, misunderstanding with ongoing debates in the sector of protection provided under intellectual property law and evolving technology[3]. As computer programs became increasingly integral to various aspects of modern life, the need for a clear and balanced patent system has never been pressing. The rise of this software innovations has transformed industries and revolutionized the way we live and work. However, our patent system is struggling to keep pace with these advancements, leading to uncertainty and inconstituency in patent granting and enforcement[4]. One of the prominent areas where innovations are changing in the 21st century is information technology that too on computer related inventions. Among the various types of protection under intellectual property, patent protection appears to influence the economic development of the nation. In India sec. 3(k) of Patents Act, 1970 provides that "computer programs *per se* is not patentable subject matter". But there are differences among the supporter software and anti-software patent. There is however no specific definition to the term software patent and everything done to define it will be mere conjecture. This can also be argued to mean that only software forming part of a more general invention of which it is party could be susceptible of being patented in its entirety, if it met the patentability criteria stated in the Act. This clarifies that the software *per se* is not a patentable subject matter under Indian Law. If the invention as a whole fall within the field of patent even only if the software application is part of the whole system[5]. The software patent can protect the company's research and developments, prevents copying of information's by other competitors, can also help to maintain its reputation and market value. On the other side, obtaining a software patent can be time-consuming and costly. Software protection under IP laws not only protect the owner's economic interest but also encourage innovation and technology.

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[3] HOLYYOAK & TORREMANS, INTELLECTUAL PROPERTY RIGHTS, (Paul Torremans, 18th edn,pg. no 571-610, 2019).

[4] N. R. SUBBARAM, HANDBOOK OF INDIAN PATENT LAW & PRACTICE S., (1st edn,pg no. 126-138, 1998).

[3] The Office of Controller General of Patent, Design & Trademark, Draft Manual of Patent Practice & Procedure (August 21 2024).

II. JUDICIAL ANALYSIS OF PATENTABILITY OF SOFTWARE

The influence of IP law can be treated as a pillar for the rise of Software industry, by providing a legal mechanism to the software developers. It was dealt that a computer software main feature in a source code, which is a literary work and hence protected by Copyright protection. When a software has been developed and is installed in a machine with a utility or usefulness then such a thing should be getting Patent protection. The U. S. Patent and Trademark Office (the PTO) decided in the 1960s that computer programs were Unpatentable generally. Fighting with the choice to patent the uniqueness of a working computerized gadget; in the middle of 1970s and 1980 the Supreme saw the matter of *Gottschalk v. Benson*[6], the case set with the issue that is the transformation of decimals into genuine binary numbers by calculations are patentable? Since the Mathematical algorithm should be considered as abstract idea which are not patentable, court held that *Parker v. Flook*[7] (The case based on the updation of an alarm limit method through a catalytic conversion process to determine the limits) And the conclusion was, the invention could not be granted patent since the algorithm is treated as an abstract idea, and thus the application won't be considered as patentable invention. In 1980s, in the case *Diamond V. Diehr*[8] the supreme court granted a patent. The invention was based on a method of examining of heating of rubber in order to get the best "cured". The explanation given by the court is that the invention cannot be considered as a complete mathematical algorithm since it includes another factor like molding of the rubber and can be considered as a patentable subject matter. The drastic difference between the judgments of these two cases (*Parker v. Flock* and *Diamond v. Diehr*).

In the decade of 1990s in the case of the highest court in deciding the Patent matters other than Supreme Court was the Court of Federal Circuit put forward some principles to follow which dealing with patentability of inventions. The court provide that when an invention was given for the protection of patent right the invention fully should be considered and examined, if the invention only consists of Mathematical algorithm or there appears to be no another particular then the invention is not patentable. But the invention shows a utilization after the application of any software, then the invention is treated as something related tom the real-world concepts and are patentable. In 1994, the court stated that data structures of a computer memory are patentable. Previously, the PTO argued that such structures were not patentable, citing the "printed matter exception" discussed under Section 102[9] and Section 103[10]. However, the court clarified that this exception only applies to human-readable text, not machine-readable data. Therefore, data structures, as processed by machines, are eligible for patent protection. In the case of *State Street Bank v. Signature Financial Group*[11] held on 1998, it is clarified that the patentability of software in respect to US. Signature Financials' patent on a "Hub and Spoke" method for managing mutual funds was upheld. The court ruled that business methods, like software, can be patentable if they produce a tangible result. After the State Street Banks case, a confusion regarding patentable matter of computer software and data structures still persisted. In 2007, the Court states that claims dealing with the mandatory arbitration was unpatentable subject matter according to sec. 101[12] of the Patent Act, this matter mainly covered only regarding the inventions connecting with mental processes or human intelligence. The courts signify that statement given in the Flook case[13] that is the "routine addition of modern electronics" providing that the mere addition of a computer program wont among to meet the criteria of patentable subject matter. In 2008, re Bilski decision further made a test to evaluate the processes of patentability, which states a machine is patentable if it is tied to a specific machine, or whether it transforms to a particular article, this test is known as machine- or-transfer test. The Bilski case impact a confusion the inventors regarding the process claims and apparatus claims.

[6] Gottschalk v. Benson, 409 U.S. 63(1972)

[7] Parker v. Flook, 437 U. S. 63 (1978).

[8] Diamond v. Diehr, 450 U. S. 175, (1981).

[9] The United States Patent Act, 1952, sec. 102, Constitutions Intellectual Property Clause,1954, USA.

[10] The United States Patent Act, 1952, sec. 103, Constitutions Intellectual Property Clause,1954, USA.

[11] State Street Bank v. Signature Financial Group, inc., 149 f.3d 1368.

[12] The United States Patent Act, 1952, sec. 101, Constitutions Intellectual Property Clause,1954, USA.

[13] *Supra* 5.

In 2010, the Supreme Court in *Bilski v. Kappos*[14] repelled the use of machine-or-transformation test. Bilski's invention was about an attempt to preempt an abstract idea and majority considered it as nonpatentable. The decision of this case was unable to provide an exact idea of what test or analysis should be used. From the post Bilski cases we can identify that the courts are largely scrutinizing software patents regarding the abstract ideas stating the implementation of an abstract idea merely even with the presence computer implementation will not amount to patentable subject matter[15]. A method of receiving and sending data between devices as a practical application was held unpatentable, stating it was an abstract idea. Only the specifically mentioned computer programs are held patentable[16]. In case of *Alice Corp. v. CLS Bank Int'l*[17,] 2014 the court stated the inventions relating to computer programs are patentable but the application given for seeking the protection should be claimed properly. The patent which produces a technical effect rather than just an improved version is a patentable subject matter.

The protection offered by IP has changed significantly over time. Among them patent law offers the most effective framework for protecting an invention more specifically and functionally[18]. The rights followed by copyright mostly of 2 types economic rights and moral rights, these includes the authors right to claim against any alteration, modification or other mutations of his own work that may be prejudicial for his dignity[19]. In many countries there is a distinction between hardware patents and software patent, these distinctions make the inventors difficult to protect and leverage the commercial value of the software related invention. For the invention to be patentable it should be novel, non-obvious and have utility. When an invention is protected under patent laws it also gets the benefits like; It ensures that that the inventors are getting a reasonable return from their successful innovations, makes it easier for the startup and small businesses to make fruitful business collaborations and promotes a systematic sharing of knowledge and helps in attracting investment partners and support business expansions[20]. Art 27 of the TRIPS Agreement states that Patents shall be granted for any invention, whether a product or a process, across all areas of technology, provided it is novel, demonstrates an inventive step, and is capable of industrial application[21]. The place of invention, the field of technology, and whether the products are imported or locally produced should all be taken into account. If inventions are necessary to protect public order and morality, members can exclude them from patentability[22].The European Patent Office grants patents for inventions involving computer programs if they demonstrate a technical effect that extends beyond the standard physical interaction between the computer and the program. There are no guidelines with regard to the patentability of computer software. Software patentability was a complicated subject matter. Different applications have arisen among the other member countries due to the uncertainty regarding the protection of computer programs. The WTO members should take other patentability requirements and make the rights available to the inventors based on the terms of the agreement.

III. COMPARISON OF PATENT PROTECTION SOFTWARE IN U. S. A. AND E. U.

Legal protection for computers was rapidly developed in the United States and Europe as the growing economy emphasized the strong need to support the software industry. Initially, there was a special protection for computer programs because they represented innovation in the work, but there was no protection for the computer programs because they represented innovation in the work, but there was no protection for words of the past. Although copyright protection was a difficult process, the United States and Europe influenced each other until the EU Treaty beganto protect computer patents. The main reasons for accepting patent protection were: first not a commercial monopoly, but the need to spread and develop knowledge and culture, and to establish monopoly, but the need to spread and develop knowledge

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[14] Bilski v. Kappos, 561 U. S. 593 (2010), at supreme.justia.com.

[15] Cyberspace v. Retail decisions, 654 F.3d 1366, 1375 (Fed. Cir. 2011).

[16] Dealertrack v. Huber, 674 f.3d 1315 (Fed. Cir. 2012).

[17] Alice Corp. v. CLS Bank International, 573 U. S. 208 (2014).

[18] WIPO Magazine, Patent Protection for Software – Implemented Inventions.

[19] ResearchGate, A Comparative Analysis of The Patentability of Computer Software Under the Trips Agreement; The U. S., The E. U., And Turkey.

[20] *Supra* 15.

[21] TRIPS Agreement 1995, Article 27, World Trade Organization, 15 April 1994.

[22] EU Parliament, Directorate-General for Research Working Paper, The Patentability of Computer Programs. Discussion of European-level Legislation in the Field of Patents for Software.

and culture and to establish rules only if all requirements were met. Second, provide a licence that would allow other manufacturers to prevent abuse of the market[23]

1. Patentability of Computer Program in USA

In the U. S. patent protection is reserved for seconds. Section 101[24] of the Patent Act specifies the products that can be protected by patents. The fundamental problem with patentability is that the sequence of instructions in the program code is unique and therefore tends to be closed to the person due to their abstract nature. Moreover, software mostly contains mathematical algorithms which are considered to be abstract or general knowledge or idea. The first U. S. case concerning the Intellectual Property Right of computer software's was filed in Gottschalk v. Benson[25], for a method of converting digital data from binary coded decimal numbers to pure binary numbers. It is completely patentable and also clearly states that the algorithm of the computer program itself, although important, wont amount to satisfy the criteria of patentability. In the cost method, the court rejected the application because it found only differences in the algorithm with the prior art. In the 1981 Diamond v. Diehr case[26], the question was whether the software used in the process of molding rubber into special products was necessary. The court's decision was to qualify   for a patent, and the patent was granted because t he invention used a physical machine that used mathematical models. Easier. The test begins to turn into machine testin g or modification. In 2010, the Supreme Court in Bilski v. Kappos moved away from the CAFC's position on   modifica tion or mechanical testing as the sole basis for patent eligibility. The court ruled that the CAFC had misinterpreted pate nt law because testing can only be done after the device isconnected, and that the test did not fit the situation because m any structures contain immutable and therefore unreliable information. As a result, beyond this issue, the law on patent ability of business processes and computers appears to have evolved into very little practice. Guidance on patentability of business methods and computers. In 2009, in an effortto clarify all of these issues, the USPTO issued an Interim Rev iew Order to assess the lack of content in Section 101.[27]

2. Patentability of Computer Program in Europe

In order to know the history of software patents in by comparison it with United States. In the mid of 1980s, there is a favorable position towards the granting of computer related inventions by European Patent Office. Article 52[28] of EPC excluded the computer from software programs, by providing a list of matters which lack the "technical character" and stating that computer programs are had no practical functions and are mere abstract ideas, it was interpreted by EPO Technical Boards of Appeals in 1980s. At those periods "technical problem is considered as a basis factor to check patentability and whether the invention is able to provide solution for any technical challenges in a clear and compressible manner[29].

The first case in 1986 that show the requirement of "technical character" was Vicom\Computer-related invention[30] in this case the invention dealt with the improving of the digital images made by the computer by making a reduction in the calculations. The EPO stated the invention doesn't contain any technical advancement; it includes the mere mathematical procedures. Later it was suggested that this method will be useful for the industrial application by the Board of Appeal and hence stated that it can be patentable. It is also considered that if the invention as whole is capable of solving a technical problem, it can be said to be patentable[31]. This case consists of a mix of patentable and nonpatentable subject matters thus, a clear example of "mix invention". From this case a conclusion for the meaning of technical result was clarified that the program or software should be able to make any physical changes to the machine in order to be qualified

[23] Googlescholar, Intellectual Property Rights on Software; Patentability of computer programs.

[24] *Supra* 9.

[25] *Supra* 4.

[26] *Supra* 6.

[27] *Supra* 9.

[28] European Patent Convention, Article 52, Patent European Organization, 1977.

[29] H.C. THOMSEN, the patentability of computer programs and methods of doing business, EPO Official Journal, Special Edition, n.2, 2001, 150-152.

[30] T 0208/84 (Computer-related invention) of 15.7.1986, at www.epo.org/law-practice/caselaw-appeals/recent/t840208ep1.html.

[31] Software related Patents: European Patent Convention, http://www.jurisdiction. com/epc.htm.

as patent. Mere interaction between the technical and non-technical component won't make the invention patentable. Even though still after the decision and conclusion was given by the EPO regarding the subject of "Technical character" there were confusions and difficulties regarding the patentability and was criticized by so many inventors[32]. In conclusion the EPOs approached towards the protection of computer programs regarding patenting mostly circles around the concept of technical character while the English courts give more importance to the technical nature of the invention as such. The lack of an appropriate approach still makes it hard to determine the cases regarding the computer patentability[33].

IV. EVOLUTION OF PATENTING OF COMPUTER SOFTWARE'S IN INDIA

Initially the rights relating to the computer software's are protected under Copyright protection. Under IP laws computer includes any electronic or similar device having information processing capability[34]. Sec. 2(ffc) of The Copyright Act describes about A computer program is a set of instructions designed to enable a computer to perform a specific task or achieve a particular outcome[35]. The copyright protection provides for the economic and moral rights for the literal works of a computer program that is the source code. But when a program or a software has some technical character and can be utilized further, then it cannot be treated merely as a literal works, such inventions should need to be protected under the patent rights. This realization was arrived at the conclusion of many controversies and confusion and finally the patent regarding the computer programs is referred in the Patent Bill.

Later, in December 1999, a joint Committee of Representatives was constituted and this Committee decided that Section 3 (k) of the Act[36] should be slightly amended by adding the phrase "per se" which is mow read as "mathematics or business" or in dividual computers or algorithms. The recommendations of the Committee were later implemented under the patent Act 2002 and Section 3 (k) of the Act. Later, after a more detailed review of the changes proposed in the applicant's application, another report was published, again falling under Article 3(K) of the Act. In 2013, the Computer Relate Inventions (CRI) published guidelines on computers. The process set forth in the guidelines would reduce patentability restrictions on new hardware products, as it would allow CRI patents to cover new computer programs or functions. The second system was published in 2016 and corrected many of the problems with the previous system, stating that no type or quality of software could be patented unless new devices were available. The guidelines were last updated in 2017, updating the "Information for Computer Science Research." According to the third section, the manufacturing process must be determined according to the claims. After considering all the elements, it concluded that the design should be patentable unless it falls within an excluded group that cannot be patent. In 2019, the Supreme Court in Delhi held in the case of Ferid Allani v. Union of India and Ors[37], it applies only to "computer program itself" and not to all the programs. The court held that technological inventions and partnership are patentable. Here, the patent applicant is seeking a patent for "methods and devices for accessing information and network services". The patent Office objected to the lack of novelty and patentability. Sections 2(1)(j)[38] and 3(k) of the Act. The document strengthens the term 'technology' in the Computer Related Inventions (CRI) Guidelines, 2013. In 2023, in Ericsson v. Intext Technologies[39] the Delhi High Court held that, inventions which are software combined with hardware, rather than mere hardware. The court emphasized that the focus should be on the underlined substance of the invention, not the form which is presented. It concluded that if the software results in technical contribution or has industrial applicability is Patentable. Right now, in order to be a software related invention patentable there should be a technical effect which means that the software must provide practical, real world functionally such as improved device efficiency, increased speed or better resources management and those inventions which are combined with hardware components are more likely to be patentable if they enable a unique technical function. In the case of Ericsson v. Intex, the court had said that patents for software

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[32] Gupta V K, Managing software protection, Journal of Intellectual Property Rights, 6, 2001, 277-285.
[33] Comparison of Patenting Software Practice, http://www.slwk.com/av/asia.pdf.
[34] The copyright Act, 1957, sec.2(ffb), Acts of Parliament, 1957(India).
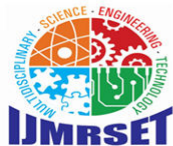[35] The Copyright Act, 1957, sec.2(ffc), Acts of Parliament, 1957(India).
[36] The Patent Act, 1970, Sec. 3(k), Acts of Parliament, 1970 (India).
[37] Ferid Allani v. Union of India and Ors, 2019 SSC Online Del 11867.
[38] The Patent Act, 1970, Sec. 2(j), Acts of Parliament, 1970 (India).
[39] Ericsson v. Intex Technologies, FAO (OS) (COMM) 296/2018.

embedded within telecom devices that improve technical processes. This requirement for hardware integration helps ensure that software inventions provide tangible, practical applications rather than merely executing abstract ideas[40].

V. CURRENTS SITUATION AND FUTURE DEVELOPMENTS

In the field of software industry, India has made its pathway in recent years. India acquires a well position while granting software patents with appreciative business environment and proficient software developers. One of the key areas where the software patenting is developing and further develops is in the field of artificial intelligent, machine learning and blockchain[41]. AI and ML are different from traditional software because they can learn and evolve after being created. This makes it hard to define the "invention" in patent applications since the software might change after being trained. One big challenge is that many AI systems rely on algorithms and mathematical methods, which are often not considered patentable[42]. For example, under US law, after the Alice Corp. v. CLS Bank case, software must show a real-world application to be patented. AI sometimes struggles to meet this requirement. Another issue regarding the inventions made by the AI is who will be the inventor? In Thaler v. Vidal[43], 2022 the federal Circuit established that the inventors should be natural persons under U. S. Patent Act. Resulting that AI cannot be an inventor. Human made inventions while getting assisted by AI can be patentable when there is substantial amount of contribution by the inventor beyond the patented tools. And later came up with a conclusion that the usage of AI tools won't negate the inventor from patenting his invention., claiming that whatever AI provides there will a significant contribution from the person while conducting the research and its development. Recently in 2024, U S Patent and Trademark Office has issued an Inventorship Guidance for AI assisted inventions[44], which provides a clarity on how the USPTO will evaluate the Inventorship regarding the AI assisted or generated inventions. Even AI plays a significant role in assisting innovation, it is still viewed as a tool rather than an inventor. There are many Challenges include determining the extent of human involvement, attributing ownership in collaborative environments, and addressing the growing role of AI in generating novel ideas. Despite these issues, inventorship remains focused on human effort under existing laws. For now, patent systems emphasize human contributions, requiring inventors to document their involvement carefully. Moving forward, legal frameworks may need to evolve to address AI's increasing impact on innovation. Until then, innovators must clearly demonstrate the human aspect of their work to ensure compliance with current laws.

In 2019, an AI invention named DABUS has been invented by Stephen Thaler and applied for patent putting AI as an inventor in U. S. But the patent office stated that they have no provision for providing a non-human entity as an inventor. In Australia, the Federal Court initially sided with Thaler, permitting DABUS to be recognized as an inventor. However, this ruling was later overturned by the Federal Court, which stressed that only human inventors are acknowledged. A request for special leave to appeal to the High Court was denied, effectively concluding the case in Australia. The European Patent Office (EPO) dismissed Thaler's applications, asserting that the European Patent Convention mandates inventors to be natural persons. Likewise, Germany's Federal Patent Court determined that while inventions created by AI can be patented, a human must be designated as the inventor for the application to move forward. The UK IPO and courts also rejected Thaler's applications, citing that the Patents Act 1977 requires inventors to be human. The Court of Appeal turned down Thaler's appeal but recognized the necessity for possible policy changes to consider AI's role in inventorship. In India, the objections against DABUS (AI-generated inventions) have been recorded by the Controller of General Patent. And concluded it is against Sec. 2[45] and Sec. 6 of the Patents Act 1970[46] since AI cannot be recognised as a person. It is claimed that even though the technical assistance has been taken from the AI it cannot be considered as a "person" in the eye of law[47]. Other countries, such as South Korea, Israel, and New Zealand, similarly denied Thaler's

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[40] *Supra* 37.

[41] Ashish Auro, The software Industry and Indian Economy Development, ScienceDirect, volume 14, issue 2, June 2002.

[42] Jayakumar, M., & Vardhan, A. H. (2008). Software Patents in the Indian Framework: An Economic Analysis of Problems and Prospects. National Law School of India Review, 20(2), 220–228.

[43] Thaler v. Vidal, No. 21-2347 (Fed. Cir. 2022).

[44] Inventorship Guidance for AI assisted inventions, U. S. Patent and Trademark Office, February 2024.

[45] The Patent Act, 1970, Sec. 2, Acts of Parliament, 1970 (India)

[46] The Patent Act, 1970, Sec. 6, Acts of Parliament, 1970 (India)

[47] Som Prakash Rekhi v. Union of India & Anr AIR 1980 SSC 212.

applications on the same basis. However, South Africa granted a patent to DABUS, thanks to its depository system, which does not assess substantive issues like inventorship. Thaler's case underscores a worldwide discussion on whether existing patent laws can adapt to accommodate inventions generated by AI. While the majority of jurisdictions assert that inventors must be human, policymakers are starting to consider potential reforms to address the increasing impact of AI on innovation.

The advent of Artificial Intelligence as a tool for generating inventions has created quite a stir as to how human innovation will eventually take place. AI systems such as DABUS can independently create new solutions and, hence, challenge the erstwhile traditional role of human inventors in various fields. AI can be perceived as an enhancer of human creativity, meaning that it can get rid of routine activities and provide emerging solutions that may not occur to humans. As a result, this can enhance speed and efficiency in producing new technologies, owing to an inevitable reduction in time and costs for research and development. Independent invention creation for AI may lead to direct competition with even human inventors. In many areas now, individual creativity would not be very important in the end, thus keeping companies away from relying overmuch on human ingenuity rather than being totally dependent on AI-generated solutions. Up-and-coming inventions from AI have raised legal and ethical questions, including ownership and liability for them. Most jurisdictions do not provide clear guidance on whether, in order to be described as an inventor, there is a need for AI's monetary contributions. AI does not have to replace humans; it can be a collaborator for inventors in their quest to achieve breakthroughs. This invited much more interdisciplinary work designed to take the human mind and associate it with computation capabilities of the AI. Efforts to invent based purely on AI-created inventions might lead to levels of skill shortage whereby the human inventor is unable to sharpen his craft because of the lack of creating challenges. Long-term implications of this for human creativity and education in fields associated with innovating concerns are raised by these factors. The fact remains that even though it must impact positively and negatively on human-generated innovations, this technology has the potential of revolutionizing the process of invention. Balancing such capabilities will be important between human creativity and AI capability.

VI. CONCLUSION AND SUGGESTIONS

Today, software patents play a significant role in progress. Intellectual Property is the type that drives innovation by protecting product rights. Software is an important part of the rapidly changing digital age, and the behavioural decisions associated with it need to be adapted to ensure that it is adequately protected. Although the CRI guidelines issued by the IPO have eliminated cloud-based software patents, and provides the original developers with a competitive advantage over other developers who may have used additional resources to compromise existing patents. A patent protection provides the owner privilege to mark their product without being used by others. Patent rights are important for startups or independent developer because without exclusive rights, large companies can create competitive software better than startups and independent companies. Large companies have large network and distribution system, so they can crowd out startups. With the help of patents, startups can prevent large companies from competing in the market and achieve a balance market. India has not been able to protect computer software through law, but patent protection is still lacking. Since patents provide more power than laws, further developments will be more beneficial. Since there exists global disparities among the patenting of software like the U. S. patent system focus more on the practical application while the European system provides importance to the presence technical effect, while coming to India Computer Programs and business methods are not patentable per se but can be patentable according the level of Industrial application. By making a more similar legislature will helps in understanding and using the software related invention. Internationally since the computer software's are not limited to a country. To make patent laws work better for AI, ML, and blockchain,the following are the suggestions : Patent offices could update their guidelines to make it clearer how these technologies can qualify for patents. Shorter patent terms might be better for fast-changing fields like AI and blockchain. Encouraging open-source development alongside traditional patents can balance innovation and public access.

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