



Cover Page



DOI: <http://ijmer.in.doi./2022/11.05.112>

INTELLECTUAL PROPERTY RIGHTS IN THE ERA OF ARTIFICIAL INTELLIGENCE: A STUDY REFLECTING CHALLENGES IN INDIA AND INTERTIONAL PERSPECTIVE

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ABSTRACT

Artificial Intelligence, which appeared like a faraway possibility at one moment, has already moved from books and movies to our world, gaining traction in recent years and resulting in numerous breakthroughs in practically every area. Artificial intelligence will affect every industry, and Intellectual Property Rights (IPR) is no exception. Artificial Intelligence (AI) will have a two-fold effect on IPR. Towards one end, it will appear to be a benefit in sectors such as patents and patent search engines, precise and appropriate research, and offering a method to sort out innovations and concepts. AI may, on the other side, emerge to be a danger to innovation and growth, which are the true essence of IPR, by providing a mechanism to the inventor on existing patents comparable to his idea, among other things. This research paper will go through the impact of digital technologies on IPR, the advantages and disadvantages of AI on innovation and development in IPR, as well as the future perspectives of AI in IPR.

Keywords: Artificial Intelligence, Intellectual Property, Innovation, Accountability.

INTRODUCTION

The term "Artificial Intelligence (AI)" refers to activities that machines can complete without human involvement. The machine can be used in place of the term computer. Natural language processing, sentiment classification, detection and face recognition, risk evaluation, and detection of fraud are all examples of cognitive technologies. The industry may employ AI to provide real-time data for supply chain monitoring and real-time notifications for manufacturing activities.

Artificial intelligence is defined as a science that aims to understand the nature of human intelligence through the work of a computer program, and the ability to simulate intelligent human behavior, and it means the ability of a computer program to solve a problem, or make a decision in a situation, that is, the program itself Finds the method that should be followed to solve the issue or reach a decision to identify the similarities between different situations and adapt to emerging situations.¹

Millions of sources of data can be protected, both organized and unorganized, domestic and foreign. So much of this data can be used to develop personalized displays for customers. AI-driven automated cars can substitute for human error. AI combined with the web of things can potentially generate smart cities with minimal pollution and improved traffic management.²

Since John McCarthy originally identified Artificial Intelligence as "the engineering and science of producing machine intelligence" in 1955, he estimated that its theoretical triumphs would require five to five centuries.³ He wasn't mistaken. Systems can now create an astonishing amount of material, assist in the crunching of massive amounts of digital data, and even forecast litigation results. Nonetheless, the Intellectual Property (IP) landscape is growing more competitive, and organizations who rely on IP portfolios get a narrower window than before to guarantee that they are protected and used internationally.

Machine learning includes artificial intelligence. Convolutional neural networks, which seem to be basically computer applications, make up the system. These optimization algorithms, which consist of mathematical processes and a set of variables, produce results that are comparable to human intellect. Deep learning and machine learning are perhaps the two essential elements of AI, and Deep supervised machine learning seems to be the best way to characterize AI. Machine learning eliminates the need for step-

¹ Jamal bin Subaih Al-Hamlan Al-Sharari, The Impact of Artificial Intelligence on the Quality of Administrative Decision from the Point of View of Secondary School Leaders in Al-Jouf Educational Region, Volume 8, Part 1, Solouk Magazine, Ibn Badis University Mostaganem, Algeria, 2021, pp. 18-19.

² Ballardini, R. (2021). Artificial Intelligence and IPR: The Quest or Plea for Ai as a Legal Subject. Ballardini RM & van den Hoven van Genderen R., "Artificial Intelligence and IPR: the quest or plea for AI as legal subject", in Pihlajarinne T.(eds), Alen-Savikko A.(eds) and Havu K.(eds), AI and the Media-Reconsidering Rights and Responsibilities, Edward Elgar

³ Prof. A.Lakshminath&Dr.MukundSarda, Digital Revolution and Artificial Intelligence- Challenges to Legal Education and Legal Research, CNLU LJ (2) (2011-2012).



Cover Page



DOI: <http://ijmer.in.doi./2022/11.05.112>

by-step directions to obtain the output. The system learns to spot trends in information on its own⁴. The system or hardware makes intelligent decisions depending on these structures, just like a human could. The term cognition is crucial here. Observation, memory, recollection, and reasoning are the four cognitive cerebral processes that constitute human development.⁵

When a computer is given the opportunity to learn intellectually, it can handle, process, and analyze vast amounts of raw data. Documents, periodicals, metadata, analogue data, including content in mails, audio recordings, media files, webpages, medical histories, and scientific documents are examples of unstructured information.

The verbal, aural, and visual aspects of human interaction are all included in this unstructured information. These forms are used by machine learning to identify large amounts of data. In the sphere of education, AI-based instructors can provide pupils with personalized training and supervision. The demands of the pupils are met in a tailored atmosphere. AI has multiple uses in the realm of the healthcare system. It's utilized for things like hospital administration, disease diagnostics, patient surveillance, clinical outcomes, wellbeing system and therapeutic decision-making improvement, care management enrichment, and facility efficiency.

SIGNIFICANCE OF THE STUDY

Companies must establish a suitable IP approach for the machine learning and AI systems in order to enjoy the benefits of AI in IP. This will enable businesses to gain a competitive edge over existing or prospective rivals and exhibit creative foundations, making them more appealing to investors and purchasers.

STATEMENT OF PROBLEM

There is a high likelihood that there'll be a deluge of IPR claims because AI technology is significantly more powerful at inventing than humans. AI would have adverse effects on human creativity in the future. Human intellect would deteriorate if natural person inventions were replaced with autonomous computers.

As a result, high-tech research & design employment and corporations will be eliminated.

There has to be a sufficient system in place to verify that patent filers really aren't misleading about AI's role in the creative process. Without human oversight, AI inventions may have negative ramifications. Transparency and responsibility must be promoted through measures.

Current intellectual property rules, such as patent, trademark and copyright laws, must be amended to include AI-driven advancements, such as AI ethics, data protection, and security. The IP policy should also address whether AI technologies are patentable. The idea that AI can create is widely held. Another consideration is shared inventorship. Is AI capable of sharing an apprenticeship with an Individual? Also, in case of infringement of the IPR's who is accountable?

RESEARCH QUESTIONS

- Whether AI will be held responsible for any mishappenings to IP?
- What will be the legal sanctions imposed on AI, if it infringes the Right of the IP Holder?
- How will human deals with AI that doesn't need human intervention and who will be accountable for the act of AI?

LITERATURE REVIEW

- **AI and IPR: The Quest or Plea for Ai as a Legal Subject, Rosa Ballardini.**

This paper has investigated the necessity to govern AI operators as legal persons by situating our study in the relevant industry environment of entertainment as well as the press, as well as in connection to the legislative structure of IPR. ⁶

⁴ Tripathi, S., & Ghatak, C. (2018). Artificial intelligence and intellectual property law. *Christ University Law Journal*, 7(1), 83-98.

⁵ Ibid 1

⁶ Ballardini, R. (2021). Artificial Intelligence and IPR: The Quest or Plea for Ai as a Legal Subject. Ballardini RM & van den Hoven van Genderen R., "Artificial Intelligence and IPR: the quest or plea for AI as legal subject", in Pihlajarinne T.(eds), Alen-Savikko A.(eds) and Havu K.(eds), *AI and the Media-Reconsidering Rights and Responsibilities*, Edward Elgar



Cover Page



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● **The role of intellectual property in the intelligence explosion by Andrea Moriggi**

This article looks at the potential legal problems of Intellectual Property in the context of AI (AI), emphasizing the importance that AI could serve in speeding up the process and extent of innovation.⁷

● **AI and Intellectual Property Law by Swapnil Tripathi and Chandni Ghatak**

This article offers valuable insights into the growing ambit of IPR legislation and artificial intelligence, as well as the inherent issues that a global perspective on the subject presents. It also tries to make suggestions that are not restricted by IPR.⁸

RESEARCH METHODOLOGY

The research also includes a content analysis of old records, journals, government documents, conferences, law commission reports, law reporters, reference materials, scientific papers in both articles and books and e-journals, magazine articles, series of documentaries videos online, newspaper articles, national parliament debates, and so on. The issue of AI patentability is being investigated using an interdisciplinary perspective. The research is based on both primary and secondary data.

HOW DOES AI DEAL WITH IP?

The worldwide copyright industry now agrees that AI technologies are software-based, and also that all of the typical software program, IP problems that come with developing an application applies. Nowadays, it is undeniable that "programs are not merely text...they also operate," and that, while creative thought and creation remain inherently human activities, computers are becoming highly proficient.

Providing AI algorithms – and, perhaps even more problematically, their inventions – constitutional protection poses basic legal concerns.

RELATION OF AI WITH IP

The effect of widespread digitalization is not limited to the IP sector.

Document identification and evaluation is an important element where technology has already been decreasing the demand for human intervention which has been a productive testing ground for AI technologies in the past.

Administrative duties are some of the most time-consuming and difficult and dangerous in legal firms, patent offices, and sometimes even legal tribunals, and also have historically been fueled by paperwork, laborious searches, or complex decision-making procedures, wherein a single input mistake might put huge amounts of money at risk.

With the automation revolution, enterprises and firms will be able to tackle a number of major issues, including a lack of staff and a limited budget, while also improving job precision and reliability, lowering risks, and expanding market rivalry.

In 2017, the world's first online court heard its first lawsuit, employing face and speech identification to compile trial recordings digitally and AI to prepare judgments⁹.

Moreover, AI is projected to be responsible for deciding cases independently in the near future, since studies suggest that lawsuit forecasting now has reached a high degree of accuracy. Computer programmers at UCL even created an algorithm that looked through English language statistics for 584 instances, analyzing the data and making its own court conclusion¹⁰. The AI judgment was

⁷ The role of intellectual property in the intelligence explosion, Andrea Moriggi, 2017, https://www.4ipcouncil.com/application/files/9615/1638/1031/The_Role_of_Intellectual_Property_in_the_Intelligence_Explosion.pdf, last accessed on 7 May 2022

⁸ Artificial Intelligence and IntellectualProperty Law Swapnil Tripathi and Chandni Ghata, Christ Law Journal,2018

⁹ Changqing Shi, Tania Sourdin and Bin Li, ‘The Smart Court – A New Pathway to Justice in China?’ (2021) 12(1) International Journal for Court Administration 4. DOI: <https://doi.org/10.36745/ijca.367>

¹⁰ See C. JOHNSTON, Artificial Intelligence ‘judge’ developed by University College London computer scientists, available at: https://is.gd/article_law_UCL_AI_judge.



Cover Page



DOI: <http://ijmer.in.doi./2022/11.05.112>

identical to the court verdict in 79 percent of the cases studied. The notion that IP lawsuits may be readily computerized must have a significant impact on how lawyers interact with their customers.¹¹

EXISTING IP CHALLENGES AND ISSUES

Current IP rules, such as patent and copyright laws, must be amended to incorporate AI-driven advancements, which incorporate AI ethics, data protection, and security. The IP policy should also determine whether or not AI technologies are patentable. The notion that AI can create is generally held. Another issue to consider is shared inventorship. Is it possible for AI to share an apprenticeship with an individual?

AI is becoming more prevalent in technology. It is only fair that the inventor declares the use of AI software.¹² The distinction between innovators and proprietorship is evident in traditional applications. The claimant declares that he is the owner of the innovation. The issue of ownership for AI inventions is unclear.

Who owns the rights of AI-based creations is a concern of Intellectual Property (IP) Protection? A human shows up with an imaginative step and creates an innovation. The invention pertains to that person or his or her employer. When AI is used to produce a new product, the person that utilizes the technology is the creator and owner of the new product. A person's simple possession of a device somehow doesn't qualify them for proprietorship. The subject as to whether a computer can file a provisional patent for such an AI innovation which does not involve human intervention. Since a machine cannot apply for a patent, would it be in the public domain?

IP administration procedures are among the most time-consuming and dangerous aspects of the field. At any given point in time, legal companies and corporate IP divisions are handling thousands of distinct items of IP material from tens of jurisdictions and hundreds of different items. This has traditionally been a very laborious and slow procedure.

Consider a single patent for which a corporation has sought protection in several nations. The company will be assisted by a network of dealers who are acquainted with the precise processes necessary to receive protection in particular nations. Hundreds of pieces of documentation will be produced along the route, in many languages, each of which has a set of obstacles and possibilities.

All of this data is now reviewed manually before being entered into such an IP management platform. Consequently, this might lead to a slew of information processing problems. Now multiply this by the number of patents. The chances of making a mistake are nearly endless. Despite this, IP remains the most important asset for many businesses. A simple mistake in entering a renewal date might result in a corporation squandering an asset worth thousands of dollars. "The World Intellectual Property Organization (WIPO)" predicts that about a quarter of patent data is incorrect. As a result, the perils are obvious.¹³

Furthermore, the human labor needed in data entry consumes a significant amount of time and money. If this process can be automated, legal firms and IP experts would be willing to concentrate on more major decisions. AI, which is efficient at swiftly and effectively processing enormous volumes of data, can help with both precision and reliability. This also allows law corporations and IP specialists to play a more proactive role within the organization, creating insights from data to assist define prospective performance of the company while computers handle the more practical aspects of IP administration.¹⁴

Interactions from the numerous patent applications and agent networks may be easily sorted and searched on demand by automating data input and guaranteeing that each and every single piece of IP does have a unique identification.

The important information in correspondence could then be identified using an AI engine, delivering in quicker and more effective results.

¹¹ Chikhaoui, E., & Mehar, S. (2020). Artificial intelligence (AI) collides with patent law. *Journal of Legal, Ethical and Regulatory Issues*, 23(2), 1-10.

¹² *ibid*

¹³ Final Report, NATIONAL COMMISSION ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS 4 (1978), <http://eric.ed.gov/PDFS/ED160122.pdf> last accessed on 7 May 2022

¹⁴ Mireille Bert-JaapKoops, et al., Bridging the Accountability Gap: Rights for New Entities in the Information Society?, 11 MINN. J.L. SCI. & TECH. 497, 549-50 (2010)



Cover Page



DOI: <http://ijmer.in.doi./2022/11.05.112>

AI'S IMPLICATIONS ON IPRS

The protection of IPR has become increasingly important as machine learning and latest technological progress. The late-twentieth-century tech transformation, as well as the rise of the internet as a global communication medium, has put constant demand on IPR adaptation. Several treaties have been enacted by the "World Intellectual Property Organization (WIPO)" in response to the development of revolutionary technological advances and the protective measures of intellectual property rights. AI (AI) and machines have long been the stuff of science fiction, but they have now become a truth with which humans must contend. As per market research company IDC, the AI market will rise from \$ 8 billion in 2016 to even more than \$ 47 billion in 2020.¹⁵ The global artificial intelligence market size was valued at USD 93.5 billion in 2021 and is projected to expand at a compound annual growth rate (CAGR) of 38.1% from 2022 to 2030.¹⁶

AI is expected to grow significantly, thanks to the confluence of large data, the easy accessibility of processing capacity, and the deployment of cost-effective equipment. While each AI is unique in its execution, we must acknowledge that several modern AI challenges relating to intellectual property can occur as a result of its progress. In reality, by reproducing parts of human cognition, AIs have the tendency to participate in content production. Furthermore, many Ai technologies go through a training process in which they construct their internal decision-making techniques and principles by exercising as well as using feedback to enhance future actions. Furthermore, AI systems are routinely used to analyze massive amounts of data in order to find statistical patterns.

PATENT AND AI

The connection between patent laws and AI is expanding in today's technological environment. As illustrated in the previous portion of this work, AI has been extensively used to ease the execution of basic functions as well as, in specific, to reduce human labor. AI-enabled gadgets work perfectly in a similar manner to calculators and some other related technologies at first glance. Technology, on the other side, operates in a significantly more complex manner. AI-enabled computers can now do activities that focus on their own significant observations, perhaps allowing them to create anything. While this is an important technological achievement, it also poses new and challenging legal challenges, notably in the field of patents act.¹⁷

Patent protection in AI systems and technologies has its drawbacks. In most cases, an AI technology is imitating a human task. Microsoft's Inner Eye project, for instance, is very much an AI system that helps oncologists tailor treatment for cancer in less time. It accomplishes this goal by analyzing neuroimaging scans of individuals and distinguishing malignancies from healthy bone and cartilage using machine-learning methods. The oncologist had already completed this task by hand-drawing outlines on 3D photographs. If a statement of claim for this task performed by the machine is filed, it will be rejected since one of the essential conditions of patentability, describing how well the invention operates, also isn't fulfilled in this situation.¹⁸

The core of social inclusion is inventions and fresh ideas. Creations have traditionally been safeguarded by a framework of intellectual property law, which includes patents. While patent law remains profoundly rooted in industrialization, it has also been capable of adapting to subsequent revolutions such as computing to a larger extent, but with certain problems. The world is already on the verge of an unparalleled revolution, one whose implications for patent law, in particular, are so far that their impact is still unclear. This is the age of AI.

PATENTS AND THE PRESENT LEGAL FRAMEWORK

A patent gives you the sole right to create and sell your innovation. This 'innovation' has already been construed to encompass any product or technique that gives users a new way of doing something, even if it was a creative solution to an existing technology problem.

The holder of such a property does have the statutory authority to prohibit others from making, selling, or even using the protected invention for a certain period. As a consequence, the privilege granted in this case justifies the imposition of a restriction in

¹⁵ Intellectual Property Rights in an Age of Electronics and Information, U.S. OFFICE OF TECHNOLOGICAL ASSESSMENT (1986), <https://www.princeton.edu/~ota/disk2/1986/8610/8610.pdf> last accessed on 7 May 2022

¹⁶ Artificial Intelligence Market Size, Share & Trends Analysis Report by Solution, By Technology (Deep Learning, Machine Learning, Natural Language Processing, Machine Vision), By End Use, By Region, And Segment Forecasts, 2022 - 2030

¹⁷ Rashmi, R., & Sneha, S. (2017). Artificial Intelligence: IPR, Liability and Ethical Issues. *Int'l. In-House Counsel J.*, 11, 1.

¹⁸ *ibid*



Cover Page



DOI: <http://ijmer.in.doi./2022/11.05.112>

favor of the original inventor. As already said, AI-enabled systems are capable of implementing tasks and even inventing things that would normally require the application of human thinking capabilities.¹⁹

In reality, these devices produce outcomes that could be classified as patentable breakthroughs. Even according to US patent law, a "inventor" is an individual or an organization of people who generated or saw the primary sources for the invention. This wipes out the possibility that now the legislative goal in the United States was to encompass innovations, or the potential for inventions made by anyone other than humans. Furthermore, as Ai technologies become more engaged in the artistic process, legal considerations will arise. The European Union is attempting to persuade countries to expand their domestic laws in order to embrace copyrightable works made by computer devices under the category of "own creative labor".

Even though this is a step ahead in acknowledging the creativity demonstrated by these technologies when creating literature, artworks, as well as other kinds of creation, Ai technologies ideas and patent applications should be given adequate consideration as well. If AI systems are left unchecked, they may surpass human intelligence in terms of performing operations in a few years, raising concerns about how such AI systems will manage and supervise their own existence. Since AI systems have such a high degree of independence, patent claims must be given extra attention. Because of its mobility, AI-enabled gadgets may do tasks without requiring much human engagement.²⁰

THE SIGNIFICANCE OF TRADEMARKS FOR AI FIRMS

Trademarks assist a name and brand by distinguishing its products and services available in the market. The brand's reputation is bolstered by the algorithms' transparency and openness in the realm of AI. When selling AI technology, businesses can utilize their brand name. Furthermore, they may be using trademarks to market very powerful AI systems.

For instance, Google Deep Mind has also acquired the trademark "Alphago," and IBM has filed the trademark "Watson." Companies ought to be cautious not to permit their trademarks to lose their uniqueness if the elements that make them up are also utilized as identities in the Information system. Furthermore, registering with a trademark buzzword that are popular and evocative of AI will become more problematic than registering imaginary and meaningless terms. Therefore, certain trademarks are more powerful than others.

LEGAL AMBIGUITY

The patent system exists to incentivize inventors to invest more in technology by ensuring that their inventions will yield a reasonable profit. A patent's market value can be harmed if there is ambiguity about its authenticity and enforceability. This would affect the ability of a rights holder to create profit through registration or lawsuits. It would be incorrect to claim that patents safeguard applicants' investments or assess the accuracy of a claim if it has been challenged. However, they do help to speed up investment and innovation and spread information, which is exactly what the patent system is designed to achieve.²¹

AI AND COPYRIGHT

Conventional copyright law doesn't acknowledge works created by AI. It exclusively safeguards a person's original creations. The United States Copyright Office stated in the landmark Monkey-Selfie copyright case that a work should be made by a human person to be protected under copyright law. The copyrightability of AI-generated creations has been questioned as a result of this judgment.

Conversely, the legislation in the U.K is quite different. A clause in the UK Copyright Act states that when a creation is machine-made, the author is presumed to have been the individual who aided the work's creation. Similarly, we might presume that perhaps the creator of AI-generated work is the one who established the essential arrangements.²²

Section 2 (d) of the Copyright Act, 1957, specifies author as "the individual who enables the work to be produced" in connection to any literature, theatrical, orchestral, or aesthetic work that is computer-generated.²³ Once AI becomes much more developed and

¹⁹ Atul Jain , Intellectual Property Rights in the Age of Artificial Intelligence, 4 (2) IJLMH Page 1501 - 1506 (2021), DOI: <http://doi.one/10.1732/IJLMH.26323>

²⁰ Supra note 10

²¹ Rashmi, R., & Sneha, S. (2017). Artificial Intelligence: IPR, Liability and Ethical Issues. Int'l. In-House Counsel J., 11, 1.

²² Artificial Intelligence Poses a Greater Risk to IP than Humans to, TECHCRUNCH(Dec. 31, 2015), <https://techcrunch.com/2015/12/31/artificial-intelligence-poses-a-greater-risk-to-ip-than-humans-do/>.

²³ Section 2 (d) of the Copyright Act, 1957



Cover Page



DOI: <http://ijmer.in.doi./2022/11.05.112>

completely automatic, and it also has the freedom to make its own judgments, it becomes even more difficult to declare with certainty who will make the arrangements necessary for the production of work. Just human-authors of artistic content may currently benefit from copyright law. Nevertheless, some academics have called for non-human authors to be granted copyright. They propose that the definition of authorship of words must be expanded to also include “human and non-human authors”. The authorship of an AI-created piece is still debatable.

INTERNATIONAL INSIGHTS

Worldwide, the amount of Intellectual property is increasing. Patent submissions increased 7.8% between 2014 and 2015, as per the World Intellectual Property Organization. The increase of filings has been going on for nearly 20 years. As a result, IP tools and information are expanding. Finding useful data in such a large volume of information has become exceedingly challenging. Traditionally, searches were conducted physically, with static searching engines serving as the only aid.

Not only can AI and Machine Learning (ML) simplify the process of scanning large databases, but they can also retain and utilize previously obtained data to enhance the precision of future surveys. AI can also be utilized to gain insights into a certain geographic or sectoral industry.

THE UNITED STATES OF AMERICA (USA)

There are two basic groups of AI advancements. The fresh and upgraded AI technologies will be the first. Second will be the recognized AI approaches. The AI application or mechanism must be novel, obscure, and not based on an abstract concept. A patent is available for an AI application or program that automates an activity that was traditionally performed by human beings using an unique and fresh process.

UNITED KINGDOM (U.K.)

Patents in the United Kingdom can be obtained through either the UK Intellectual Property Office or the European Patent Office.

Computer systems and mathematical calculations are included in the list of items that do not comprise invention, as per article 52(2) of the European Patent Convention (EPC). They are patentable, however, if they "add to the technical nature of an invention, i.e. assist in creating a functional requirement that fulfills a technological purpose." Consider an AI program that provides medical diagnostics via an automated system that analyzes physiological data.

CHINA

China wants to be the global leader in AI by 2030. In comparison to other nations, the proportion of patents including the terms "AI" or "deep learning" has surged in China. In terms of finance and research & innovation, China has surpassed the United States. To be patentable, AI software should be presented in the format of "medium plus computer program method" claims and equipment assertions that describe a component executed by a computer algorithm.

China has been able to put up a better structure for protection of AI. Though there are still ambiguities lying with respect to the ownership, especially in case of multiple stakeholders.

JAPAN

For acquiring patent protection for AI-related developments, the Japan Patent Office offers a rather patent-friendly environment. AI as well as the Web of Items related to inventions are classified as business-related innovations. Allowance rates for business-related discoveries are about 70%, that is nearly identical to the allowance percentage for patentability in all the other technical domains.

INDIA

India's patent legislation is governed by “the Patents Act of 1970”. It advises and assists the Indian Patent Office including the court system in determining if a product or technique is patentable or not. Absolutely novel, original idea, and industrial applicability are the three levels of criterion for patentable subject matter of inventions. “The patentability of software advancements in India must be interpreted in view of Section 3(k) of the Patents Act, 1970, as well as the Office of the Controller General of Patents, Designs, and Trademarks' Guidelines for Examination of Computer Related Inventions (CRIs)”. A software program is not patentable in and of itself, according to Section 3(k). However, software inventions are patentable in reality if they meet the following criteria:



Cover Page



DOI: <http://ijmer.in.doi./2022/11.05.112>

- The invention improves on existing prior art in terms of technology; and
- By delivering a direct implementation or a sufficient technical impact of the fundamental program, the invention gives a technological remedy to a technical issue.

THE NEW DIMENSIONS OF 'INVENTION' AND 'INVENTOR'

As may be observed, a number of criteria determine whether a patent is granted or denied. However, there are specific requirements that must be met in order to be classified as an inventor. In the particular instance of *Townsend v. Smith* in the United States, it must have been allowed to hold something before it could be interpreted as a legally acceptable outcome of a discovery, it should go through the entire 'creation' step, i.e., a fixed notion had to have been envisioned in the creator's mind before it was even put in place. Anything that is reduced without prior thought cannot be labeled an invention, and the person who shortened it would not be an innovator.²⁴

It has been proposed that such sorts of creative thought can arise solely in the conscious imagination with such ideation notions. The reasoning behind the elimination of the "spark of enlightenment" patentability requirement is among the most powerful justifications for AI's participation in the classification of "inventor." Whereas this test recognized the necessity of conception for acknowledging something as an innovation, the US Congress rejected this requisite, stating that when an invention was contributing to the development of the scientific knowledge it was operating on, the process by which it emerged in the inventor's mind became irrelevant. Many AI algorithms, such as AlphaGo, Watson, and others, perform operations such as providing solutions depending on enormous influxes of data, so it's only natural.²⁵

It could be contended that all these approaches serve to the development of research and, as a result, should be awarded patent protection. Researchers, on the other hand, believe that the issue is not that simple. Even though the collaborative invention statement were to be used, that would recognize computer systems as inventors alongside their human counterparts, this would've been invalid due to the absence of 'legal identity' conferred to machines in most judicial systems, which really is similar to the situation of corporate entities of never being citizens. The realization of the 'incentive theory' is yet another justification for giving computers to be designated as inventors and granted patent rights. While machines that are incapable of emotion will not be motivated by this, it will help to inspire humans to develop such technology since they comprehend the benefits.

Patents are principally aimed to safeguard the creator and maintain his dedication to the creation that he doesn't really want everyone to use at an accelerated pace. As a consequence, critics of AIs being granted patent protection argue that computers lack this capability. This prevents individuals from forming strong opinions about how their invention may be used, therefore defeating the purpose of intellectual property rights.

CONCLUSION

The influence of patentability on AI development, the industry, and society will be profound. Given the rapid advancement of AI technology, it is critical that relevant parties such as patent experts and academics engage in conversations to determine how the patent system can foster innovation. Furthermore, sufficient measures must be implemented to ensure that harmful social and moral consequences are avoided.

The current patent-eligible subject - specific criterion must be carefully assessed to see whether it has a material detrimental effect on AI or AI-driven innovations. If this is the case, stakeholders must determine what changes to the regulation could've been made to accomplish the primary goals of Patent law.

The current liability regulations do not take into account cases where an AI causes patent violation on its own. It must be defined who'll be held responsible and how accountability will be evaluated in such cases. All of these difficulties must be treated with caution.

One of the most important goals of patents would be to spur innovation and science and technology. AI is rapidly evolving. With regard to AI, patent law must be adaptable in character and attempt to accomplish economic and societal good.

²⁴ Prof. A.Lakshminath&Dr.MukundSarda, Digital Revolution and Artificial Intelligence- Challenges to Legal Education and Legal Research, CNLU LJ (2) (2011-2012).

²⁵ Tripathi, S., & Ghatak, C. (2018). Artificial intelligence and intellectual property law. *Christ University Law Journal*, 7(1), 83-98.



Cover Page



DOI: <http://ijmer.in.doi./2022/11.05.112>

Courts' attempts to re-interpret patent system in order to adequately safeguard Artificial Intelligence might indeed end up questioning the very framework of patents act itself: for example, the very requirement of patentability has already been dissolved in the frame of reference of US legal precedent in order to expand the awning of protection given under patent law.

The attempt to compensate the proprietors of AI technologies by enabling a return for the innovations or works of art made by AI, on the other hand, presents major risks to the notions of inventorship and authorization, compromising both patents and copyrights law's founding principles.

Finally, the outmoded character of present global IP legislation is failing to represent this current situation, thereby reducing the incentives that innovators and producers have to defend their intellectual property rights.

The ramifications of this chasm are far-reaching, and they may cause a dramatic halt in current society's development, towards the cost of industry and the overall social organization. If we don't want to miss out on the advantages of this new era, we must negotiate this unknown area and adapt the legislative framework to the complex questions of possession and patent protection in the Digital age. And they need to constantly adapt.