Jus Corpus Law Journal

Open Access Law Journal – Copyright © 2023 – ISSN 2582-7820
Editor-in-Chief – Prof. (Dr.) Rhishikesh Dave; Publisher – Ayush Pandey

Chat GPT: Patentability of AI Inventions

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Received 13 February 2023; *Accepted* 03 March 2023; *Published* 06 March 2023

Artificial intelligence had its beginning in the 20th century when a British computer pioneer, Alan Mathison Turing, described a machine with illimitable memory and actions that are controlled through instructions stored in that memory. The idea that computers might replace humans one day was an outlandish assertion but it seems practical, now that robots are seen working at restaurants as waiters or at hotels as cleaners. With the advancement in technology, we have moved a step further where the working of AI is not just related to performing minute tasks but is now considered analogous to the functioning of a human brain. This AI can now produce its content and its ownership comes into question: the texts generated by OpenAI's ChatGPT are such examples. Are laws about patents outdated? Should they be amended? Can an AI be named an inventor of its inventions? This article reviews the meaning of AI, ChatGPT, patents; a court ruling; and the position of patentability in other countries.

Keywords: *ai inventions, chatgpt, patentability, intellectual property.*

INTRODUCTION

The phrase 'Artificial Intelligence' which once sounded either fancy or scary just a couple of years ago was first coined at Dartmouth College in 1956 and was defined by Marvin Minsky

and John McCarthy who is also known as the fathers of the field.[1] The evolution of AI is enormous in any field, be it agriculture or education, and almost all have interacted with it at some point in their lives, knowingly or unknowingly. From "Hey Siri, can you sing me a song?" to chatbots like ChatGPT passing law and medical exams, that's a huge leap. Is it on its way to becoming a future virtual lawyer or doctor? To briefly elucidate what Chat Generative Pre-trained Transformer or ChatGPT is, the developers describe it as a chatbot that uses an upgraded version of the GPT-3 model to generate responses in a conversational way to text prompts.[2] It can create unique responses for essays, journals, articles, and so on. The question here arises is whether the invention enabled by this AI be patented. For this, different facets of patentability should be considered.

ARTIFICIAL INTELLIGENCE AND CHAT GPT?

Artificial Intelligence is, in layman's language, a computer technology that has decision-making abilities equivalent to human intelligence. Though our understanding of AI is limited, self-aware robots are helping us to advance our knowledge of what they are and what they are capable of.[3] Despite being a manmade discovery, the man himself is not fully cognizant of its nature and potential. ChatGPT as described earlier is an AI and is the buzzword in today's time. It was developed by OpenAI and functions on a large language model (LLM). Some researchers believe that it has passed Turing's test which checks whether a machine can behave like humans.[4] It serves the purpose of generating a reply to questions such as writing a happy birthday message or a code.

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[1] 'Artificial Intelligence' (*Business Standard*) <https://www.business-standard.com/about/what-is-artificial-intelligence/7#collapse> accessed 02 February 2023

[2] Ben Parkhill, 'What is ChatGPT? How AI Is Transforming Multiple Industries' (*Forbes*, 1 February 2023) <https://www.forbes.com/sites/qai/2023/02/01/what-is-chatgpt-how-ai-is-transforming-multiple-industries> accessed 03 February 2023

[3] Raquel Acosta, 'Artificial Intelligence on Authorship Rights' (2012) Harvard Journal Of Law And Technology <https://jolt.law.harvard.edu/digest/artificial-intelligence-and-authorship-rights> accessed 03 February 2023

[4] Damir Yalalov, 'ChatGPT Passes the Turing Test' (*Metaverse Post,* 20 January 2023) <https://mpost.io/chatgpt-passes-the-turing-test/> accessed 03 February 2023

WHAT IS A PATENT AND WHAT ARE THE STANDARDS FOR GETTING INVENTIONS PATENTED?

By World Intellectual Property Organization, "a patent is an exclusive right granted for an invention, which is a product or a process that provides, in general, a new way of doing something, or offers a new technical solution to a problem."[5] Patents being territorial rights are exclusively applicable to a particular country or region where it has been filed or granted concerning the laws of that area. The following conditions must be met to obtain patent protection in consonance with TRIPS Agreement:

Novelty: The invention must be new and dissimilar to other existing inventions. There should be no prior publication. In Gopal Glass Works Ltd. v Assistant Controller of Patents, it was held that the invention must be new and original to be patented.[6]

Inventiveness: The invention must be an inventive solution and a mere change in the form of prior use or knowledge is not enough. This concept was introduced through Bishwanath Prasad Radhey Shyam v Hindustan Metal Industries in which the four tests of obviousness[7] were ingeminated.[8]

Industrial Applicability: The invention must have industrial utility to allow its commercial use and this was observed in Cipla Ltd. v F. Hoffman-La Roche Ltd. & Anr.[9]

PATENT LAW AND ARTIFICIAL INTELLIGENCE

As the usage of AI is increasing, there is a legal dilemma concerning patent laws and it has become challenging to discern whether an AI invention can be patented. Initially, the functioning of systems was simple with the early computers only being used for calculations but now it has become complicated, especially with the development of ChatGPT.

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[5] 'Patents' (*WIPO*) <https://www.wipo.int/patents/en/> accessed 03 February 2023
[6] *Gopal Glass Works Ltd. v Assistant Controller of Patents* (2007) 1 CALLT 290 HC
[7] *Graham v John Deere Co.* [1966] 383 US 1
[8] *Biswanath Prasad Radhey Shyam v Hindustan Metal Industries* AIR (1982) SC 1444
[9] *Cipla Ltd. v F. Hoffman-La Roche Ltd. & Anr* (2015) 40 PTC 125 (Del)

The paper will examine the position of AI inventions in the Indian context concerning the Indian Patent Act of 1970.[10] The Act mentions extensively the products that do not come under the definition of an invention under which Section 3(k) states that "a mathematical or business method or a computer program per se or algorithms" cannot be considered as an invention.[11] This displayed that there is a complete embargo on the patentability of computer programs and algorithms but provided no clarification regarding software. The ambiguity of the wording of the law led to the amendment in 2005 which specified that computer program coalesced with hardware is patentable.

Hitherto the courts denied patentability not just based on the Act but also because it was concluded that the content generated is not inventive which is required as per the patentability test or the four tests of obviousness. Moreover, the prerequisite of novelty raises doubt as there are instances where ChatGPT generated responses on existing models or concepts since most AI systems are designed to achieve results with pre-existing objectives. However, there is a shift from this rigid requirement since AI inventions entail practical utility in various sectors which suffice the industrial applicability criteria. Therefore, further amendments could be brought about after scrutiny of the issue as there is no clear picture about granting patents for AI inventions, particularly ChatGPT-generated replies.

The debate does not end with conditions necessary to grant patents as there also emanates cases of penalties and patent infringement. Sections 118-124 deal with the provisions of penalties which include contravention of secrecy provisions relating to certain inventions,[12] falsification of entries in the register, etc.,[13] the unauthorized claim of patent rights,[14] wrongful use of words 'patent office'[15] refusal or failure to supply information,[16] practice by non-registered patent

[10] Indian Patent Act 1970
[11] Indian Patent Act 1970, s 3(k)
[12] Indian Patents Act 1970, s 118
[13] Indian Patents Act 1970, s 119
[14] Indian Patents Act 1970, s 120
[15] Indian Patents Act 1970, s 121
[16] Indian Patents Act 1970, s 122

agents[17] and offenses by companies[18]. The patentee (someone who holds a patent for an invention) is given a remedy in case of any violation of the rights which comprises injunction, damages, or an account of profit, seizure, or forfeiture of infringing goods.[19] Novartis v Union of India is a landmark judgment regarding the infringement of patents.[20] Apart from that, section 107A contains certain acts not considered an infringement.[21] Since a patent is a component of Intellectual Property Rights, the paper will now discuss the concept of intellectual property and its rights, and then move on to analyze the treatment of AI inventions in other jurisdictions.

INTELLECTUAL PROPERTY AND INTELLECTUAL PROPERTY RIGHTS

WIPO defines intellectual property as an intangible property created out of the figment of the imagination of human intellect: "Intellectual property (IP) refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names, and images used in commerce."[22] It is believed that the origin of intellectual property goes back to the sixth century in the ancient Greece era, with the first property being licensed in 1331 by King Edward III of England and the first enactment in India in 1856.[23]

According to World Trade Organisation, "Intellectual property rights are the rights given to persons over the creations of their minds. They usually give the creator an exclusive right over the use of his/her creation for a certain period."[24] The different types of intellectual property rights are copyright, patents, trademarks, industrial designs, geographical indications, and trade

[17] Indian Patents Act 1970, s 123
[18] Indian Patents Act 1970, s 124
[19] Indian Patents Act 1970, s 108
[20] *Novartis Ag v Union of India & Ors* (2013) Civ App No 2706/2716
[21] Indian Patents Act 1970, s 107A
[22] 'What is Intellectual Property?' (*WIPO*) <https://www.wipo.int/about-ip/en/#:~:text=Intellectual%20property%20(IP)%20refers%20to,and%20images%20used%20in%20commerce.> accessed 04 February 2023
[23] Sony Kashayp, 'History and Development of Intellectual Property' (2021) 03(01) IJEMMASSS
[24] 'What are intellectual property rights?' (*WTO*) <https://www.wto.org/english/tratop_e/trips_e/intel1_e.htm> accessed 04 February 2023

secrets. Each type holds different rights to its inventor or creator to further encourage skills and creativity.[25]

The above definition of intellectual property rights indicates that artificial intelligence does not hold rights to their inventions since there is only inclusion of those creations that are created by a person's mind but the definition of intellectual property is quite dubious since it does not elucidate on the kind of mind as the working of artificial intelligence in contemporary times is analogous to that of a human mind. So it becomes inconvenient to not put AI inventions under the category of intellectual property. Hence, unless there is clarification on what constitutes a mind or some modifications are brought about in the definition of intellectual property rights, the position of ChatGPT-generated responses cannot be ascertained.

CONDITION OF PATENTABILITY IN OTHER JURISDICTIONS

The patentability of AI inventions is treated differently in other jurisdictions.

US: According to the Consolidated Patent Laws of the United States, "the term "inventor" means the individual or, if a joint invention, the individuals collectively who invented or discovered the subject matter of the invention."[26] This indicates that only human beings who either invented or discovered an invention are termed inventors and the slightest possibility of anyone other than a human cannot be considered but in recent years, there has been an increase in the involvement of artificial intelligence in invention processes and therefore legal perusal ought to be demanded. In light of this, the United States Patent and Trademark Office (USPTO) issued a Revised Patent Subject Matter Eligibility Guidance in 2019 for conducting the two-part eligibility test which was established in a landmark decision of the Alice case[27] under Section 101 of the Patent Laws that deals with the eligibility of the subject matter.[28]

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[25] Lalit Jajpura et al., 'An Introduction to Intellectual Property Rights and their Importance in Indian Context' (2017) 22 Journal of Intellectual Property Rights

[26] Consolidated Patent Laws 2005, s 100(f)

[27] *Alice Corp. v CLS Bank International* [2014] 573 U.S. 208

[28] 'Patent Eligibility and Alice… Not Who, But What?' (*Ference*) <https://ferencelaw.com/patent-eligibility-alice/> accessed 09 February 2023

Japan: Being one of the most advanced countries in terms of technology, Japan gives strong protection over patent rights. Under Japanese Patent Law, the term invention means "the highly advanced creation of technical ideas utilizing the laws of nature."[29] Software is patentable only when all the steps within the invention are tied to hardware, this could include a processor, the computer, etc.[30] The ambit of the subject matter concerning the patent of a "computer program or anything equivalent" is also broader than other jurisdictions. In the Japanese Patent Office (JPO) Examination Guidelines, computer inventions are categorized into four types: method, computer-readable storage medium, computer program, and information equivalent to a computer program. The rights of an inventor, who must be a natural person, may be transferred to either natural persons or legal persons such as a company.[31]

EU: The European Patent Convention mentions patentable inventions. The inventions can be granted in any field of technology provided that they meet the requirements of the TRIPS Agreement.[32] It also describes inventions that cannot be regarded as inventions such as "discoveries, scientific theories, and mathematical methods; aesthetic creations; schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers; presentations of information."[33] The European Economic and Social Committee (ESC) criticized the European Patents Office's analysis of article 52(2)[34] by describing it as "the product of legal casuistry" as the term "invention" is defined as negative. After many Board judgments, the concept of 'whole contents theory' was adopted but the ESC arraigned this approach and it was turned down because of a paucity of lack and reasoning.[35]

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[29] Japanese Patent Law 1959, art 2(1)
[30] 'What can be patented in Japan? – A simple introduction on requirements for patentability' (*Transeuro,* 28 September 2020) <https://www.trans-euro.jp/en/English/blog/what-can-be-patented-in-japan-a-simple-introduction-on-requirements-for-patentability> accessed 09 February 2023
[31] Masato Iida & Shinya Jitsuhiro, 'Japan : Patents Comparative Guide' (*Mondaq,* 8 March 2022) <https://www.mondaq.com/intellectual-property/989178/patents-comparative-guide> accessed 09 February 2023
[32] *Ibid*
[33] European Patent Convention 1973, art 52(2)
[34] *Ibid*
[35] Justine Pila, 'Dispute over the Meaning of "Invention" in Article 52(2) EPC – The patentability of computer-implemented inventions in Europe' (2005) 36 (2) International Review of Industrial Property and Copyright Law

THE DABUS CASE STUDY

The application for DABUS marked a watershed moment in patent law history because no AI before it had been attempted to be listed as an inventor to get patent rights. DABUS or Device for the Autonomous Bootstrapping of Unified Sentience is owned by Dr. Stephen Thaler and due to this ownership, the right to grant patents has been transferred to Thaler by DABUS.[36] This is the contention that is assumed which has caused a conundrum about whether an AI is entitled to have a patent, let alone transfer it. The application was filed in various patent offices across the globe including the European Patent Office, the USPTO, the Australian Patent Office, the South African IP office, and the UK IP office, all of them rejected Dr. Thaler's application except the South African IP office, making it the world's first patent office to grant a patent with artificial intelligence as the inventor.[37]

The decision of the UK's court to reject granting a patent to an AI might not be appropriate. The court thoroughly scrutinized the definition of 'person' to understand what it constitutes and only revolved around the term 'inventor' associating it with 'person' which is presumed to be a human being. Undoubtedly, DABUS is neither a natural person nor a legal person so it is not entitled to hold a patent. Moreover, the court failed to address the issue of the subject matter holistically leaving the fate of future cases relating to AI inventions in uncertainty. Hence, the narrow interpretation and the inability to address the matter that could dictate the jurisprudence to govern AI-related inventions in the world can be said to be a missed chance.[38] As for South Africa granting the patent, it is pertinent to note that the country does not have a substantive patent eligibility test and therefore did not carry out elaborate formalities to examine the application.[39] Moreover, an inventor is not defined in its laws.

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[36] *Stephen L Thaler v Comptroller General of Patents, Design and Trade Mark* [2020] EWHC 2412 (Pat)
[37] Sanjana, 'A Brief Overview of the DABUS Patent Case' (*GlobalPatentFiling,* 23 October 2021) <https://www.globalpatentfiling.com/blog/brief-overview-dabus-patent-case#:~:text=DABUS%20case%3A%20Brief%20facts%20Device%20for%20the%20Autonomous,computational%20invention%20that%20was%20created%20back%20in%202018-19.> accessed 10 February 2023
[38] Saransh Chaturvedi, 'The Curious Case of Dabus: Who should own the AI-Related inventions?' (*SCC Online,* 26 December 2020) <https://www.scconline.com/blog/post/2020/12/26/the-curious-case-of-dabus-who-should-own-the-ai-related-inventions/> accessed 10 February 2023
[39] *Ibid*

CONCLUSION

The current position of ChatGPT is problematic because despite having industrial applicability, it does not give concrete answers to the questions of proving novelty and inventive steps since they hinge on the availability of prior art. It becomes even more challenging to establish the requirement of an inventive step because the algorithm of ChatGPT, trained with supervised and reinforcement learning techniques, utilizes information that is already accessible in the public domain to generate human-like written articulation using AI. The comparison of different jurisdictions exhibits that most of them focused on laws that have not undergone any change in the past few years and have become obsolete, the DABUS case is the epitome of such a situation. There is a dire need for amendments at the current time considering the escalating significance of AI inventions. A positive démarche could be that countries devise a uniform law that recognizes AI-generated inventions or gives some clarity on the status of such inventions.