

## Can Artificial Intelligence (AI) Machine be Granted Inventorship in India?

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Artificial intelligence (AI) is prolific emerging algorithmic general purpose technology that helps inventors in the innovation process or is a component of an invention. AI-assisted inventions and other computer-related inventions (CRIs) generally have few significant differences. A simple instrument for creativity, machines are now a significant contribution to creation because to AI advancements. Medical researchers are using AI machines to find new drugs. These automated systems, also known as “innovative AI”, have been helping to develop new inventions with little to no human involvement.<sup>1</sup>

Since AI's contribution and autonomous invention process is exponentially growing, there have been instances where a patent applicant has opted to name an AI programme as the inventor in a patent application. The patent offices of the United States, the United Kingdom, the European Union, and New Zealand recently rejected a patent application seeking inventorship for an AI computer. Australia and South Africa, on the other hand, have recognised AI as an inventor. In light of the various approaches used around the world, this article examines the key question that emerges in patent granting: can an AI system that is not a natural person be recognised as an inventor and granted a patent in India, including inventorship and ownership?

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### AI Inventions

The components of AI include algorithms and models such as abstract algorithms, software, inference models, training process; data, including training data as well as intermediate data and data sets such as weights; and hardware like computers, robots, cars, sensors, storage medium, other devices. The usage of computer programmes and codes could be utilised to apply and implement AI. These categories are important in conceiving AI protection through intellectual property because they represent the foundation of existing patentable subject matter categories. Patent laws safeguard technological innovations.<sup>2</sup>

The Indian Patent legislation defines the term “*Invention*” as, ‘a new product or process involving an inventive step and capable of industrial application.’<sup>3</sup> ‘Inventive step,’ according to this definition, is a feature of an invention that entails technological advance in comparison to existing knowledge or has economic relevance or both and that makes the invention not evident to a person versed in the art<sup>4</sup> fresh results, new articles, or an improved or cheaper version of an old piece must be produced by an innovator. “*Invention*” above what is already known must be included in the new patentable

subject matter. It is not enough that two or more non-inventive faculties are united to receive patent protection to give it.<sup>5</sup>

New results, new articles, or an improved or cheaper version of an old piece must be created by an innovator. The “*invention*” component of the novel patentable subject matter must go above and beyond the prior art. The mere combination of two or more non-inventive faculties does not warrant the issuance of patent protection.<sup>6</sup> Whether or not the putative discovery lays so far out of the Track of what was known before as not naturally to suggest itself to a person thinking on the matter, it must not be an obvious or natural suggestion of what was previously known to be patentable.<sup>7</sup>

An invention must meet all three of the most demanding requirements for patentability: novelty, inventive step or non-obviousness, and industrial applicability in order to receive patent protection. To be eligible for a patent, an invention must meet all three of these requirements. TRIPS grants patent protection to all inventions, regardless of whether they are products or processes, so long as they are novel, contain an innovative step (or are not obvious), and may be used commercially (or are useful). Business method inventions are clearly excluded from patent protection under the TRIPS framework.<sup>8</sup>

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Patents (Amendment) Act, 2002 determined that “a mathematical or business process or computer programme *per se* or algorithms” was not an innovation within the scope of the subject matter of patentability, taking effect from May 20, 2003.<sup>9</sup> As a result of this modification, patentability of patent was narrowed to only those inventions that meet the basic test of novelty, inventive step, and industrial application. The software patents or algorithms were explicitly excluded, but judicial recognition of such an invention was left open. In the event an AI equipment or system is devised in response to a “technical” challenge solved by software patents or algorithms, the invention may be patentable.<sup>9</sup>

### Concept of Inventorship of Patents

In the patent system, inventorship is a crucial concept. An Inventor, according to this definition, is someone who contributes the creativity required to produce an innovation. However, such an invention does not have to be created by a single individual; it is also feasible for an invention to be created by two or more co-inventors.

It is common knowledge that the patent system grants the creator a limited monopoly over the invention. The patent rights belong to the inventor, and if the creator is not identified, the patent may be declared invalid. The issue with innovative AI is whether a lifeless computer can be labeled a “inventor” if it generates an independent innovation or production.<sup>10</sup> It goes without saying that the term “inventor” is assumed to refer to a person or an individual. While stretching the subject matter criterion for patents in the United States, the court in *Diamond v Chakrabarty*,<sup>11</sup> opined that “anything under the sun that is made by man is patentable.” The rationale behind this strategy was to ensure that an invention remained in the hands of the person who conceived it rather than a legal body like a company, because individuals, not companies, conceive.<sup>12</sup>

AI technology has progressed to the point where it can currently provide results with only a small amount of human intervention. They would qualify for patent protection if they had been developed by a human inventor. The main question raised by this is whether an AI system may be considered the inventor under the current patent laws. This question, we believe, has a negative answer.<sup>13</sup> The patent system is built on a “human inventor,” including its logic and the underlying principles that underpin patentability requirements.<sup>14</sup> Thus, the basic basis for patent law

is utilitarian, i.e., to encourage and reward inventors' innovative activity. Inventions that are unique are given protection.<sup>15</sup> All of these factors revolve around the inventive and intellectual endeavours of “human inventors,” leaving little room for “non-human innovators.”<sup>16</sup>

An innovation is “conceived” by a “natural person,” which denotes that an actual human being gave it some thought. *Townsend v Smith* defined “creation” as “a creation in the mind of the inventor of a distinct and permanent notion of the complete and operative invention as it is, subsequently, to be employed in practice.”<sup>17</sup> The creation must reveal the brilliance of a human being's creative intelligence, not just the competence of the calling, as the AI-driven machine did.<sup>17</sup> Such ideas can only exist in the minds of real humans. However, in 1952, the US patent law was modified, and the mental act' criterion was removed.<sup>18</sup> The development of science or useful arts attained by the innovation, not the inventor's thinking process, is what matters, according to US lawmakers.<sup>19</sup> Those US politicians could not have imagined at the time that AI development would occur in the future, but for those who are fervently pushing for the legalisation of inventive AI as an inventor, this has turned out to be a blessing in disguise for AI inventions. Despite this, the legal situation is still uncertain.<sup>1</sup>

### Personality Theory and AI

Intellectual property rights are also justified using the personality hypothesis. This viewpoint sees creations as an extension of the creator's personality, and ownership of such creations as a way for the creator to grow and express himself.<sup>20</sup> In copyright disputes, the personality rights approach has been used, but less frequently in patent disputes.<sup>18</sup> However, it has been argued that these outlooks, are based on a superficial grasp of personality because the inventive process is influenced by the inventor's intelligence, vision, and imagination.<sup>21</sup> The personality theory may be used to justify patent rights even though discussions of patent justifications do not depend on it.<sup>22</sup>

### Utilitarian Theory and AI

The major premise behind the patent law in the United States is utilitarianism. The granting of patent and copyright protection under the Constitution of United States is essentially utilitarian, and it states that Congress may “promote the Progress of Science

and useful Arts.”<sup>23</sup> Many of the normative beliefs of patent academics and much of the emphasis in US patent law are utilitarian in nature.<sup>24</sup> The United States Supreme Court, for example, has used the concept of utilitarianism to decide patent issues.<sup>25</sup> The private property rights may be provided to promote overall societal welfare, according to the utilitarian principle of pursuing the greatest good for the greatest number and its concepts of utility, rather than deontological views of good.<sup>26</sup>

According to utilitarianism, invention will only occur if exclusive rights are granted, and the issue of patents will stimulate the production of new inventions. Although some research suggests that patents do not foster innovation,<sup>27</sup> utilitarian arguments are used to support the claim that granting patents on an object will enhance its production. If a certain sort of invented object is thought to be socially acceptable, then increasing the number of these objects is likewise thought to be beneficial.<sup>20</sup> So, what exactly is the utilitarian argument for patenting AI-generated output?

Most AI-generated output is likely unnoticed. The generation of AI-generated content, on the other hand, is important to the innovator. AI-assisted inventors invest time and money in research and development in order to apply AI-based technologies, and they place a high value on the AI-generated output they produce. However, AI-assisted inventors spend substantially less time and money on AI-generated output than they would if they didn't employ AI-based technologies. From a utilitarian standpoint, the award of patents on acceptable AI-generated content should be justified based on its worth to the inventor. Even if the social utility of AI-generated output is viewed narrowly, utilitarianism provides adequate justification for considering such output as beneficial to society.<sup>28</sup>

There are some utilitarian arguments to patenting AI-generated output, the first of which derives from the application of intellectual property law doctrines. While utilitarianism may justify the grant of exclusive rights to inventors, it is not an unrestricted warrant; rather, it places restrictions on such rights. Even if specific patentable subject matter meets all other patentability standards, there may be limitations on the granting of patent rights, such as the exclusivity term. It may be too early to determine the optimal balance of utilitarian aims and limits at this level in AI research. The second argument is that patenting

AI-generated output will limit the welfare and value of the technology.<sup>20</sup>

### **Incentive Theory and AI**

The primary objective of the patent system is to provide incentives to the inventor or innovator of patents as a motivator to develop for the good of society.<sup>29</sup> Without a patent, the creator would be discouraged from innovating since she would be unable to prohibit free-riders, according to this viewpoint.<sup>22</sup> Another problem with assigning patent rights to an artificial intelligence machine, which is not a natural person, is that it will invalidate the very concept of incentive theory's IP rights component. When it comes to defending the grant of IP rights to human, incentive theory presents a compelling case. The exclusive patent rights should be granted to make, use, and sell an invention for a fixed number of years only to the human inventor in order to assist him make money and provide an incentive to develop or innovate more products or processes.<sup>30</sup> The patent holder must sue someone infringing the patent granted to him in order to enforce their rights and misappropriates his incentives.

The assumption that providing inventor title to semi-cognitive AI computers will inspire scientists to do more research and development in these machines, resulting in societal benefits, is incorrect.<sup>1</sup> Another claim is that since non-economic incentives like recognition and scientific curiosity are sufficient to encourage study in this area, AI does not require patent protection. Due to the significant investment in resources required—which can only be made by a few number of large corporations—the inventive AI machine cannot be given the title of inventor.<sup>1</sup> The monopoly of patent rights in the hands of these large corporations due to the patent protection for AI developments may not be tenable given that currently even MSMEs, startups, individuals, and science and technology universities and organisations are adopting creative AIs for various purposes.

AI technologies have progressed to the point where they are capable of developing and inventing new products and processes using Machine learning and Deep learning algorithms, with only a small amount of human input in the patent invention process. Although such patentable subject matter is capable of receiving patent protection, an AI system cannot be recognized as the inventor under the current system of patent law because it was not conceptualised by a

human inventor.<sup>16</sup> A patented invention must always be owned by a person who is either a "natural person" includes a living or physical person or a "legal person" that includes a juridical personality, or juristic personality. Therefore, AI-induced patent inventions are almost similar to other computer-assisted inventions, and the AI systems can be an inventor and granted patent rights to the AI invention.<sup>16</sup>

The "human inventorship" is the logic and essential premise on which the standards of patentability of subject matter in the patent system are based. As a result, the underlying logic of patent law is utilitarian, i.e. rewarding and motivating inventors for their inventions by providing them exclusive patent rights.<sup>31</sup> Patent protection is given to inventions that are the result of "human intellect," not just findings or obvious extensions or workshop variations of what was previously known. The term "innovation" refers to a human mind's intellectual creation rather than a machine or technology.<sup>15</sup> Furthermore, the distinction between patentability of an invention and a mere extension of existing knowledge is based on 'human capabilities' by comparing whether or not an invention is patentable.<sup>16</sup><sup>44</sup>

At the time of determining who the inventor of a specific patentable invention is, it's not uncommon that the courts focus on the ideas emanating from the mind of the human inventor, i.e. conception of the invention and the cognitive and creative abilities of humans.<sup>32</sup> Therefore, a person will be only recognized as the inventor provided he can validate that he has contributed to the "inventive concept". Conversely, a mere contribution of an "unnecessary detail" to the invention by a person,<sup>33</sup> or any contributions of a managerial, administrative or financial nature,<sup>34</sup> are considered as the invention. Therefore, the hallmark in describing inventorship is the nature of the genuine contribution to the concept of inventorship based on human cognitive abilities.<sup>35</sup> This theory dismisses the proposition of recognition of AI technologies as the inventor. Even though AI technologies may be instrumental in the invention of patentable products or processes or successfully in solving a technical problem, technologies are not recognized as an inventor as they are not capable of cognition.<sup>15</sup> AI technologies should only be considered as a mere critical tool in arriving at the invention'.<sup>35</sup>

These theories are all related to ex ante justifications for patents, or justifications for why patents should exist. Ex post arguments for intellectual property, such as patents, have been the

focus of other, more modern theories. According to these beliefs, intellectual property rights are justified because they encourage right holders to manage previously created content.<sup>36</sup>

These reasons for the patent system have issues in terms of patent regulatory policy, regardless of the theory at issue. While always keeping in mind a necessary balance, patent rationales should be reflected in specific patentability requirements and patent scope: too lax patentability requirements and broad patent scope may result in patent flooding, but too strict patentability requirements and narrow patent scope may put a stop to innovation and inventive activities.<sup>22</sup>

### **Grant of AI Inventorship across the World**

The question of whether AI may be regarded as an inventor and whether it can be granted patent rights still remains, even though an AI system may produce an invention that satisfies the legal standards for patentable subject matter. As opposed to pre-AI machines, which only processed structured data and dealt with data whose meaning was predetermined, now AI consists of a set of technologies that can comprehend unstructured data, AIs are capable of performing computer reasoning such as coming to conclusions and understanding the justifications for such conclusions. It can learn automatically and it can also be used to partially automate the invention process. AI is employed for finding an issue that needs to be solved, developing a solution, and using it in all stages in the invention process. However, AIs do not specify the technical teachings or the problems that need to be solved. Hence, they are not inventors in the traditional sense. Therefore, Its contribution in the invention process cannot be comparable to human inventorship. But AIs also differ significantly from other traditional invention tools that have never been observed before, they as assisting technologies improve human inventing capacities and talents. They can act beyond the scope of predefined tasks and autonomously provide, test, and choose technical solutions.<sup>37</sup>

While there are variances in how inventors' rights and patent ownership are handled across jurisdictions, many inventors' substantive rights include "the right relative to entitlement and the right of attribution."<sup>35</sup> In addition to the attribution rights mentioned above, the European Patent Convention states that "the right to a European patent shall belong to the inventor."<sup>38</sup>

"According to Article 56 of the European Patent Convention, an invention "must be regarded as

embodying an innovative step if, having regard to the state of the art, it is not evident to a person versed in the art [...].”<sup>39</sup> A proficient practitioner in the relevant technology field, with average knowledge and aptitude, and awareness of what was common public knowledge in the art at the relevant date, is considered to be a skilled practitioner in Europe.”<sup>40</sup> If the same or equivalent issues are present in other domains nearby or in a larger general technical field, the relevant technological field can encompass those areas as well.<sup>1</sup> The individual who is adept in the art is also assumed to have had “the tools and capacity for routine work and experimentation which are common for the field of technology in question,”<sup>58</sup> but she is deficient in imaginative thought and inventiveness.<sup>41</sup>

The EPO uses a special problem-solving methodology to evaluate inventive step, which consists of three stages: first, identifying the closest prior art; second, identifying the objective technical problem to be solved; and third, determining whether the claimed invention would have been obvious to a skilled person given the closest prior art and the objective technical problem.<sup>42</sup> In addition to the aforementioned, “secondary indicia” were taken into consideration, such as the fulfilment of a long-felt need<sup>43</sup> or the financial success brought on by the technical aspects of the invention.<sup>44</sup>

A recent (September 2020) High Court of Justice ruling in the United Kingdom (UK)<sup>21</sup> addressing DABUS as an inventor is also informative. Although DABUS was listed as the inventor on both of Stephen Thaler’s UK patent applications, he filed them under his own name. Since DABUS is a physical object, it cannot even own property, let alone transmit it, Justice Smith defines the term “inventor” as “the person who is the genuine deviser of the invention”.<sup>44</sup> “Dr. Thaler was a person, but not the invention; and DABUS was the inventor, but not a person,” as the saying goes. “Nothing in this analysis should be construed to infer that DABUS is not capable of an original concept.. DABUS is not, and cannot be,” Justice Smith added.<sup>45</sup> The Patents Act of 1977 does not recognise AI as an inventor in the UK, but the court acknowledged that the legislature is better suited to handle the matter.<sup>45</sup>

If the claimed invention and the prior art differ so significantly that the claimed invention as a whole would have been evident to a person of ordinary ability in the applicable field prior to the claimed invention's effective filing date, then a patent cannot

be granted.<sup>46</sup> The invention's ability to be patented is unrelated to how it was created. The term “the art to which the claimed invention belongs” encompasses both comparable arts—that is, arts from the same field that address a problem while also solving it—and dissimilar arts—that is, arts from a different field that accomplish the same feat.<sup>45</sup>

Non-analogous art, however, cannot be used to judge whether an innovation is obvious or not.<sup>45</sup> According to the *Federal Circuit in Environmental Designs, Ltd. v Union Oil Co.*, a number of factors, such as the rate at which ideas are generated and the sophistication of technology, affect the level of ordinary skill in the relevant art.<sup>47</sup> Recently, US Supreme Court decided that,<sup>48</sup> “the USPTO will follow a step-by-step process to determine whether a claim is supported by the relevant prior art and whether there are any differences between that prior art and the claimed invention. It will also look at secondary factors that may offer objective proof of non-obviousness, such as commercial success, long-term viability.”<sup>49</sup>

The final part of Section 103 emphasises that the non-obviousness analysis considers the product of the inventive process. Numerous US courts have supported this.<sup>50</sup> The argument may then be made that inventions made by an AI by chance (or as a result of a semi-automated procedure involving several trial-and-error tests, for example) are unaffected by how they were created. However, several recent court rulings have given the prohibition against invalidating a patent based on the method of manufacture significant leeway.

In *Mayo Collaborative Services v Prometheus Laboratories, Inc.*,<sup>51</sup> Despite the prohibition in Section 103,<sup>52</sup> the US Supreme Court focused on how the invention was carried out, noting that the claimed innovation constituted “well-understood, normal, conventional activity, previously participated in by researchers in the field” as one of the reasons to invalidate a patent. It's also conceivable to argue that the last sentence of Section 103 was added by a US legislator to balance the different innovative tasks that only people, not machines, are capable of performing.<sup>53</sup>

Even though, DABUS passed in the novelty tests but, in most countries it failed upon technical grounds which was, failure to identify the inventor. It's controversial whether AI should be considered an inventor. The statutes are not equipped in dealing with

technological and legal changes caused by AI. The decisions by the patent office in South Africa and Australia have carved a niche in this field. However a clearer interpretation awaits.<sup>16</sup>

The patent authorities in the various jurisdictions declined to formally examine any patent applications naming DABUS,<sup>54</sup> an ANN-based system, as the inventor in any of the aforementioned circumstances. Only in South Africa, where the patent system is based on registration rather than examination,<sup>55</sup> has such a patent ever been secured. The patent applications were submitted as part of the “Artificial Inventor Project”<sup>26</sup> by a global group of patent attorneys<sup>56</sup> with the intention of demonstrating the “need for suitable legislation to tackle IP challenges” brought on by AI.<sup>52</sup>

The inventor also owns the patent under the Australian Patent Act.<sup>57</sup> The key question to ask is whether non-human entities, like AI systems, should be given legal competence and, consequently, legal rights. The short answer to this is emphatically no for the time being. Furthermore, this query should not be addressed in isolation under patent law so long as the invention is legitimate.<sup>52</sup>

Australia is a key example of a country in which AI can be recognized as an inventor, at least from a procedural standpoint. Whether a patent application listing an AI system as the inventor is a legitimate submission under the Australia Patents Act was a question that the Federal Court of Australia examined. The lawsuit began as an appeal when the Australia Patent Office initially denied Dr. Thaler's patent application, which identified DABUS as the inventor. The Deputy Commissioner of Patents had held the original patent application had lapsed for failure to properly provide the name of the inventor,<sup>58</sup> since the Patents Act is “inconsistent with an [AI] machine being treated as an inventor.”<sup>58</sup>

In an unprecedented verdict on July 30, 2021, the Federal Court of Australia (FCA) determined that AI systems can be recognised as inventors under the Australian Patent Act.<sup>59</sup> In this Position Statement, the FCA explains why AI systems should be recognised as inventors. Overall, it shows how confusing the issue of whether a non-human creature should be regarded as an inventor under patent law is given the current state of technology. It also emphasises the need to first address the issue of whether ideas created without human involvement should be protected at all if AI systems are ever capable of inventing autonomously.<sup>52</sup>

The Federal Court of Australia reversed the Patent Office decision, holding that an artificial system or device can qualify as an inventor under the Australian Patents Act.<sup>59</sup> In supporting his reasons for allowing AI as an inventor under current Australian patent laws, Justice Beach initially posed a fundamental yet profound query: “We are both created and create. Why cannot our own inventions create?”<sup>52</sup> Additionally, Justice Beach made a distinction between who owns a patent and qualifies as an inventor, both of which he claimed the Deputy Commissioner had conflated.<sup>52</sup>

Justice Beach stated that it “is consistent with the Australian Patents Act to construe the term 'inventor' in a manner that promotes technological innovation and the publication and dissemination of such innovation by rewarding it, regardless of whether the innovation is made by a human or not” as a response to this query.<sup>52</sup> Importantly, the Federal Court decision is relatively narrow, noting that a non-human inventor cannot be an applicant for a patent nor a grantee of a patent. Further, Thaler's patent application did not undergo any prosecution and was not granted as a result of the Federal Court decision; rather, the application has been returned to the Australian patent office for further processing in view of the decision. Accordingly, if the DABUS Application progresses to allowance in Australia, the issues of who is the proper applicant and/or who is the grantee will need to be resolved prior to issuance.

As a matter of fact, it has not been demonstrated that AI systems create “autonomously.” As stated in the FCA ruling, giving artificial intelligence the title of “inventor”<sup>52</sup> would represent the truth<sup>60</sup> that “machines have been autonomously or semi-autonomously generating patented results for some time now,”<sup>61</sup> and that one is just recognising the reality by doing so. On the other hand, not acknowledging the fact could generate inefficiencies, if not logical issues.<sup>62</sup> Notably, the judge stated that he does not agree with Dr. Thaler's more ambitious classification for DABUS and instead believes it to be “semi-autonomous.”<sup>63</sup>

It's crucial to note that the FCA only considered the legal issue of “whether an artificial intelligence system can be considered a “inventor” for the purposes of the Australian Patent Act and Regulations.”<sup>64</sup> However, the designation of DABUS as a “autonomous inventor” can cause public uncertainty about the factual basis and, more

broadly, the state of AI technology due to the lack of factual verification of the claims of the autonomous generation of inventions by AI. Additionally, as patents impose welfare costs in the form of prices above the level of competition, they may engender public hostility toward the unfairly granted patent rights.<sup>52</sup> Patent law's silence on non-human inventors cannot be regarded as implicit acceptance.

It is speculative to claim that innovation is promoted by acknowledging AI systems as inventors. Furthermore, the choice to recognise AI systems as inventors may raise questions about how to discern between situations in which AI "autonomously" invents and situations in which AI approaches are deployed as problem-solving tools from an administrative and enforcement standpoint.<sup>52</sup> The argument that "computer inventorship would incentivize development" is flawed.<sup>52</sup> The creation of creative machines by computer scientists appears to be theoretical at best. First, an economic analysis should demonstrate that a market failure would occur in the absence of "computer inventorship." Even without acknowledging "computer inventorship,"<sup>52</sup> as per the recent boom in patenting activity claiming AI techniques and applications.<sup>65</sup>

According to the FCA, Thaler is the owner of the inventions because, in accordance with "established principles of property law, "he is the owner, programmer, and operator of DABUS, the artificial intelligence system that made the invention."<sup>65</sup> This logic has the legal and practical ramifications that Thaler has a claim to anything created with DABUS as long as he owns it, even if it is just used as a tool. It's questionable if such a finding can, as the judge expects, effectively inspire the development and use of AI output "by others."<sup>65</sup> The decision can deter the creation of case-specific AI applications and AI-based solutions rather than fostering innovation.<sup>52</sup>

The allocation of inventor's rights, including the right of ownership in an invention, and the recognition of non-human entities as inventors under patent law was the subjects of the FCA's legal question. However, the topic that should be addressed first and foremost, on a fundamental and systematic basis, is whether or not ideas created without human involvement should be granted patent protection at all.<sup>52</sup> Patents can only be justified by benefits that wouldn't exist in the absence of patent protection because they incur welfare costs. This is an idea that hasn't been demonstrated to apply to "autonomously created" inventions.<sup>52</sup>

### **AI Inventorship in India**

A thorough examination of the various clauses of the Patent Act of 1970 reveals that an AI machine cannot be granted inventor status in India. "The person for the time being placed on the register as the grantee or proprietor of the patent," says Section 2(p). It does not specify who the inventor is, just as its Australian counterpart. Section 2(q) defines "persons" also include the Government it doesn't bar the addition of another entity and when read in reference to part 3B of form 1 of the act which under the head of "other" does not contain what all types of entities come under the meaning could help in expansion of scope. Section 6(1)(b) lays down the provision that a "Person being the assignee of the person claiming to be true and first inventor in respect of the right to make such an application".<sup>66</sup>

It emphasizes on the role of an inventor, and since, AI does not fit in the definition of "person" under various laws like under Section 2(31) of Income Tax Act 1956; therefore it cannot assign a person to make an application on its behalf.<sup>67</sup> Additionally, Section 28(1)(a) deals with mention of a person as inventor it states that "if the Controller is satisfied that the person in respect of or by whom the request or claim is made is the inventor of an invention in respect of which application for a patent has been made, or of a substantial part of that invention; and the application for the patent is a direct consequence of his being the inventor".<sup>68</sup> Such a mention of any person as inventor does not confer or derogate him from any rights under the patent. But this would be rendered useless due to the conclusion drawn earlier and the constricted definition of "person"; the scope of AI being the inventor in India is miniscule but not nil.

### **Conclusion**

The patent system's principal objective is to encourage taking chances and investing time, money, and other resources in developing innovations that might benefit society. As a result, the patent system is an essential component of an overall innovation strategy. Does a reevaluation of the applicability of the patent incentive to inventions produced by AI applications seem necessary in light of the advent of such inventions?<sup>16</sup>

The aforementioned factors indicate that the answer to the crucial question of whether the results of AI technologies should be given patent protection depends on whether the granting of such protection is consistent with the goal of the patent system

itself, i.e., whether AI-generated inventions will be rewarded and encouraged through the issuance of a patent.<sup>69</sup>

When developing new regulations in this area, it's imperative to find a balance between the interests of the individual and the larger society. By concentrating the rewards of inventions in the hands of large companies, for instance, patenting artificial intelligence (AI) technologies and the “big data” that trains them may severely restrict access to the creative process. Patent and competition law regulators should closely monitor such potential negative ramifications to prevent limiting innovation and competition. A larger perspective of a fair distribution of rewards to all parties involved in the creative process is essential in order to create the incentives for people to continue investing in their human, physical, and financial capital.<sup>16</sup>

Last but not least, even while the current patent law system may be able to address and resolve the issues brought about by current technology, the subsequent, extensive development of AI technologies may necessitate the employment of unique approaches. New methods will be required to deal with the issues that such technology will unavoidably pose if technology really does evolve to the point where it is functionally similar to human intellect (the so-called ‘strong AI’).<sup>16</sup>

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