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Analysis of the Test of Obviousness under Indian Patent Law in light of Artificial Intelligence

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Introduction

With the onset of machine learning and artificial intelligence, the realm of technology is undergoing a drastic revolution. This progression does not only affect the information technology sector but has repercussions that are ubiquitous. The effect of AI on Patent law has already been widely discussed by several experts across the legal fraternity. Computers have already started producing outcome which could, in the conventional sense, be considered [patentable](#). The outlook of the policy makers and courts in the future towards such technological advancements could determine the pace and scope of progress in technology.

A [2018 paper by the World Economic Forum](#) discussed the same while also examining the possible future challenges which could be faced by the Courts of Law in cases relating to intellectual property rights. In the paper, it was argued how the inception of an era of AI and machine learning could pose several challenges in the world of IPR law such as copyrights for AI generated content, ownership of such content, patentability of AI generated inventions, the applicability of the test of obviousness in patent law, etc.

In this article, the author discusses the impact of Artificial Intelligence on patent law in India – more specifically, its impact on the non-obvious standard and the ‘inventive step’ doctrines which serve important function in determining the patentability of inventions.

Artificial Intelligence and Patent Law

While the idea of computers or machines with creative capabilities or an inventive intelligence may seem far-fetched, it is not a distant reality according to some experts. Professor Ryan Abbott, in his work *Everything is Obvious*, has characterized, in four phases, the transition from a human-based inventive phase to a completely AI dominated inventive phase in which “inventive machines” would be capable of producing inventive or creative outcomes to the extent that they may not require any human intervention. However, the idea of a future with completely ‘autonomous’ AIs that would not require any human assistance in the process of inventing or producing original and creative outcomes has been **challenged**. Although, we might see AI working in tandem with human inventors in the near future, ‘autonomy’ (which must be differentiated from ‘automation’) in AI powered machines is an idea which still remains improbable.

Even still, the application of AI in the process of invention gives rise to many questions in the field of patent law. While questions like the ownership of AI-generated inventions, the patentability of such inventions, and so on, are important considerations in the field of patent law, this piece specifically analyzes` the problem of determining the ‘nonobvious’ standard in such cases.

Inventive Step and Non-Obviousness

The non-obviousness doctrine or the inventive step doctrine plays an important role in determining the patentability of inventions – it is also considered to be **the ‘ultimate condition of patentability’**. The nonobvious standard was an outcome of the American legal system and is now a part of patent law across the world including that in India.

Early jurisprudence on American patent law points towards an inclination of the courts on using the test of novelty and utility inspired by the French patent law. However, in 1851, the US Supreme Court adopted the test of obviousness in the landmark case of *Hotchkiss v. Greenwood* by stating that “*unless more ingenuity and skill... were required... than were possessed by an ordinary mechanic acquainted with the business, there was an absence of that degree of skill and ingenuity which constitute essential elements of every invention.*” The principle was finally enshrined in Section 103 of the 1952 Patent Act. Later on, in the case of *Graham v. John Deere co.*, the US Supreme Court fortified the test of obviousness by stating that the language of Section 103 “*was intended merely as a codification of judicial precedents embracing the Hotchkiss condition, with congressional directions that inquiries into the obviousness of the subject matter sought to be patented are a prerequisite to patentability.*” The court laid down the factors to be considered in determining obviousness:

1. the scope and content of the prior art;
2. the level of ordinary skill in the prior art;
3. the differences between the claimed invention and the prior art; and
4. objective evidence of non-obviousness.

Furthermore, the court laid down certain factors which objectively determine obviousness, viz., (i) commercial success; (ii) long-felt but unsolved needs; and (iii) failure of others.

More recently, in the case of *KSR International v. Teleflex*, the US Supreme Court discarded the TSM (Teaching, Suggestion and Motivation) test of obviousness which had been followed till then. The court declared the test to be too restrictive and held that “*The obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion and motivation or by overemphasis on the importance of published articles and the explicit content of issued patents. The diversity of inventive pursuits and of modern technology counsels against limiting the analysis in this way.*”

In the Indian context, the test of obviousness did not find a place in patent law until the 1970 Act came into existence. Nonobvious standard and the inventive step are both envisaged in Section (2) and Section (3) of the Indian Patents Act, 1970. Section (2)(1)(j) defines an “invention” as “*a new product or process involving an inventive step and capable of industrial application.*” In addition to that, Section (2) defines “inventive step” as “*a feature of an invention that involves technical advance as compared to the existing knowledge or having economic significance or both and that makes the invention not obvious to a person skilled in the art.*” The two

clauses read together make it clear that the intention of the parliament was to integrate the nonobvious doctrine as a part of the Indian patent law.

The earliest discussion on the doctrine by the Indian Supreme Court can be traced back to the case of *Bishwanath Prasad Radhey Shyam v. Hindustan Metal Industries* in which the court observed that “obvious” was an equivalent word for “inventive step” used in Section 26(1)(a) of the 1911 Act and that obviousness must be strictly and objectively judged. The court placed reliance on the opinion of Salmond L. J. in *Rado v. John Tye & Son Ltd.* – “Whether the alleged discovery lies so much out of the Track of what was known before as not naturally to suggest itself to a person thinking on the subject, it must not be the obvious or natural suggestion of what was previously known.” The Madras High Court in the case of *Bajaj v TVS* held that “an ‘inventive step’ which is a necessary ingredient of invention in order to make an applicant eligible for grant of patent under the Act must be relating to an invention involving technical advance or having economic significance or both along with a necessary factor that such invention should make it “not obvious to a person skilled in the art.” The court further laid down that “Even though the term ‘obvious’ has not been denied under the Patents Act, it can be safely stated to be a circumstance where a person of skill in the field, on-going through the specification would complete the product.”

The 1970 Act makes it clear that the ultimate test of patentability, once the tests of ‘novelty’ and ‘enablement’ have been passed, is the test of obviousness.

The Advent of AI and the Nonobvious Standard

In the realm of inventors, AI and machine learning could play a huge role in accelerating the rate of progress owing to the high precision and speed of algorithm-based devices. However, this could also pose a challenge in the granting of patents. The non-obvious standard in patent law depends largely on two considerations: (a) the person skilled in art; and (b) prior art.^[i] If the use of AI based computers and software becomes a common practice in a particular field of science, it would lead to an increase in the standard and expertise of the hypothetical “person skilled in art”. A ‘skilled person’ would then mean a human inventor equipped with an AI. Additionally, if certain AI is created for problem solving purposes, such as that equipped with ANNs, and it is able to create patentable outcomes, it would lead to the ‘skilled person’ becoming such machine [in that particular field of science]. As a result, the nonobvious standard may rise, making it extremely difficult for human inventors with no access to AI to develop patents. The term ‘prior art’ encapsulates the idea that an invention should be judged in the context of the ‘state of the art’ which includes all that has been previously known by persons skilled a particular art from experience as well as documentation.^[ii] In the case of AI assisted inventions, the scope of this consideration also broadens. A human inventor would not, generally, be expected to be well versed in all knowledge beyond the scope of his/her field. However, in the case of human inventors equipped with AI, such expectation would be heightened. Consequently, the advent of AI would raise the bar for obviousness and make the process of obtaining patents more strenuous. It may even compel inventors to use AI in their research as producing patentable outcomes without such assistance would require tremendous amounts of insight. This would inevitably defeat the purpose of our incentive-based patent legal system, viz. to ensure the progress of science and technology, by making it extremely difficult and expensive to obtain patents.

The Future of Patent Law

The aforementioned dilemmas in patent law resulting from the use of AI in producing inventions shall require a re-evaluation of the patent law in force today. One of the solutions to the given problem could be a bifurcation between patents granted for AI assisted inventions and those that are developed solely by human inventors. As part of the patent prosecution process, the person applying for a patent is required to disclose all technology that is used in the invention and such technology is a factor for consideration during the granting of patents. Although the present legal system does not focus on the inventing process while granting patents, the future may call for such a paradigm shift. It will also ensure a fairer and more just patent system, apart from being in line with the incentive theory of patent law.

In addition to the specific issues raised by AI, a problem which pertains to the entirety of patent law and would be accelerated by the complexities raised by AI would be the non-expertise-based nature of Indian courts which deal with patent law. The scrutiny of whether or not certain technology would be considered as AI, or what would

be considered as prior art in the determination of obviousness are questions which would require a level of expertise in technology which is higher than those generally found in most courts. The ruling of the Madras in the *Bajaj* case that “*the test of ‘obviousness’..*” “*..will have to be decided only in an appropriate manner in a full-fledged trial*” only adds to the problem. Besides, a recent [draft bill introduced by the Ministry of Finance](#) aims at abolishing the IPAB (Intellectual Property Appellate Board) which is the only body that specialises in matters of patent in India.

The dilemma posed by creative AI assisting inventions (more specifically and speculatively, AIs inventing without human intervention) might even compel policymakers and the judiciary to reanalyze the very basics of patent law. For instance, it has been argued by Professor W. Nicholson Price II^[iii] that the notion of “newness” which is envisaged in patent law does not provide “betterment”, consequently leading to huge costs for the economy and society. He argues that “progress of science and technology” is not achieved to the fullest by such patent law which mostly generates “divergent” technology. This makes the bifurcation between AI patents and manmade patents even more significant.

[i] V.K. Ahuja, *Law Relating to Intellectual Property Rights* (Vol. 1, 3rd edn., Lexis Nexis, 2017).

[ii] *Halsbury’s Laws of India – Intellectual Property Rights II* (Vol. 23, 2nd edn., 2018).

[iii] W. Nicholson Price II, ‘The Cost of Novelty’ (2018) 120(3) *Columbia Law Review*.