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Inventive Step *vis-à-vis* Non-Obviousness - Rethinking Section 2(1)(ja) of the Indian Patents Act, 1970

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Inventive step is the sine qua non for the grant of a patent. Arguably, this subjective evaluation of the claimed invention ensures a sufficient leap forward to the existing technology. The footnote appended to Article 27 of the TRIPS Agreement contemplates that inventive step may be deemed tobe synonymous with“non-obvious”. Thus, the footnote has left it open-ended for the WTO members to speculate on *may* or *may not* situations or entirely rule out this apparent inventive step/non-obviousness equivalence suggestion. TRIPS Agreement does not define inventive step or lay down the standards to be followed in construing the person from whose perspective the claimed invention has to be looked into for inventive step/non-obviousness determination. In the U.S., Congress and the Courts have consistently interpreted “non-obviousness” as technical advancement to the concerned discipline. When it comes to Indian law, there is an apparentclarity, but when delved deep, the outcome lacks crucial elements of predictability. Section 2(1)(ja) of the Indian Patents Act, 1970 is framed in such a way so that it gives an impression to the reader that technical advancement and being non-obvious to a person skilled in the art are two distinct concepts. The US Courts always gave economic considerations a secondary status in the determination of the non-obviousness of a given invention. Indian patent statute specifically mentions *economic significance*and places it as an alternative to *technical advancement*withoutclarifying the interconnection of the two connotations.The authors intend to understand, in what way technical advance can be considered as a completely separate standalone criterion for patentability in conjunction with non-obviousness. Furthermore, as a step forward, the authors want to expound on whether economic consideration alone,without even requiring non-obviousness, can fulfil the *inventive step* criterion in India.

Keywords: Inventive Step, Technical Advance, Non-Obvious, Article 27 TRIPS, Person Skilled/Ordinarily Skilled in the Art (PSITA/POSITA/PHOSITA)

It is well established in patent law that an invention becomes patentable when it satisfies the trinity of novelty, non-obviousness, and utility. Recognising this golden rule of global patent jurisprudence, Article 27 of the TRIPS Agreement contemplates that “…patents shall be available for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application.”[1]The footnote appended to Article 27 states that for the purpose of interpreting the Article, the term “*inventive step*” may be deemed by a WTO-Member to be synonymous with “non-obvious”. This apparently innocuous explanation further muddied the complex jurisprudence of the non-obviousness instead of clearing the age-old mist of confusion that engulfed the concept.

Section 2(1)(ja) of the Indian Patents Act, 1970 states that “*inventive step means 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*”. Notably, Indian Law uses both the phrases - inventive step as well as non-obvious without clarifying their purpose, ambit and relation. This provides context to the present paper. In general, the purpose of this paper is to explore the scope of non-obviousness *vis-à-vis* inventive step understanding in India from the comparative insights drawn from the U.S. and the U.K. In particular, the authors endeavour to examine to what extent non-obviousness and inventive step are co-equal and to what extent they are not so equivalent.

Non-Obviousness in the United States

Article 1, Section 8, Clause 8 of the Constitution of the United States of America known as the Patent and Copyright Clause states that “[*t*]*he Congress shall have Power* [*t*]*o promote the Progress of Science and*

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useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries".[2] This clause empowers the U.S. Congress to enact patent law and directs that the same has to be applied and interpreted in a manner that furthers "the progress of Science".[3]

In the year 1851, a patent infringement litigation involving "*new and useful improvement of knobs of all kinds of clay and of porcelain, in the form of a dovetail, and fastened at the bottom of its depth*" came up for the consideration of the United States Supreme Court. The pronouncement of the Court in the case laid down the first law and policy framework of the non-obviousness doctrine in patent law.[4] Section 6 of the Patent Act of 1836 contemplated that a patent could only be granted for "*new and useful*"art, machine, manufacture or composition of matter or improvement thereof.[5] The Court found that the only novel feature of the invention was the substitution of well-known knobs made of metal or wood for clay or porcelain. Even though the Patent Statute did not require any criteria other than novelty and utility for patentability, the Court opined that the invention involved in the dispute was invalid. The Court observed that "*knobs of the same form, and for the same purposes.....*" were described by the patentee in their specifications which was "*the mere substitution of one material for another*" and "*without any new mode of using the material, or any new mode of manufacturing the article sought to be covered by the patent.*" While interpreting the provision, the Court stated, "*[t]o allow such a claim, it appears to us, would be violating the spirit of the act of Congress.*" This judicial intervention, thus, firmly established the constitutional mandate of stimulating a sufficient leap forward to the existing technological landscape.[6] The Court went on to further state that "*the material being in common use, and no other ingenuity or skill being necessary to construct the knob than that of an ordinary mechanic acquainted with the business, the patent is void.*" This created an additional condition of patentability - the "non-obviousness" requirement as we know ittoday- though not originally contemplated in the statute of 1836. The patentee advanced an alternative argument before the Court with regard to the invention being "*better and cheaper*", to which Nelson, J. replied, "[*n]ow the new article was better and cheaper than the old one; but I did not then suppose, nor do I now, that this could make any difference, unless it was the result of some new contrivance or arrangement in the manufacture*". It is clear that, cheaperthat is mere economic consideration was rejected as a criterion as the Court thought it would defeat the bar presented by this newfound requirement.

The 'non-obviousness' requirement or the 'invention' requirement, as it was known in this case, was further brushed up and developed in later cases by the Federal District Courts and the Court of Customs and Patent Appeals.[7] Needless to say, there were decisions of varying interpretations and implications. Some courts interpreted this 'invention' requirement as wanting 'a flash of a genius', others considered it to be of 'ordinary creativity'.[8] To overcome such variations and diversity in judicial decisions, in 1952, when Congress enacted the Patent Act, it incorporated therein a new Section 103 that laid down non-obviousness as one of the conditions for patentability. The Section reads as:

"[*a] patent may not be obtained though the invention is not identically disclosed or described as set forth in Section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains….*"

In the year 1966, the U.S. Supreme Court had the first opportunity to interpret this newly incorporated Section 103 in *Graham* v *John Deere Co*.[9] The legal principle enunciated by the Court in the case came to be famously known as the *Graham Trilogy* in Patent Law.[10] The Court stated:

"[u]nder § 103, [First,] the scope and content of the prior art are to be determined; [Second,] differences between the prior art and the claims at issue are to be ascertained; and [Third,] the level of ordinary skill in the pertinent art [has to be] resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such *secondary considerations* such as *commercial success*, *long felt but unsolved needs*, *failure of others*, etc. *might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented*. As indicia of obviousness or nonobviousness, these inquiries may have relevancy.

This is not to say, however, that there will not be difficulties in applying the nonobviousness test. *What is obvious is not a question upon which there is likely to be uniformity of thought in every given factual context.*"[11]

The rule, when elaborated and analysed suggests that:

(i) Before undertaking the crucial exercise of obviousness or non-obviousness demarcation, first, who should be the person having ordinary skill in the art (PHOSITA) has to be determined. This PHOSITA construction is vital to lay down the standard of the ordinary skill in the pertinent art or technology involving the claimed invention in the patent application and the prior art.
(ii) Thereafter, from the lens of the PHOSITA so construed, the scope and content of the prior art present at the date of filing of the patent application has to be determined. It is pertinent to note that the existing prior art, therefore, cannot be combined in an arbitrary and indiscriminate manner.
(iii) Then, the PHOSITA is required to meticulously compare the prior art so ascertained and the Claims made in the patent application to identify the differences and similarities between the two.
(iv) Against this backdrop, the PHOSITA is required to undertake the obviousness or non-obviousness analysis.
(v) Lastly, the PHOSITA may take into consideration a non-exhaustive but indicative list of factors known as *secondary considerations* (e.g., the commercial success of the claimed invention, long-felt but unsolved need and other's failure) for making a final conclusion on the non-obviousness question of the claimed invention.[12]

Immediately after the *Graham test* formulation, the Supreme Court applied it to a patent infringement suit against the U.S. Government involving a patented non-rechargeable battery. In *United States* v*Adams*, the patented battery had one magnesium and one cuprous chloride electrode, and water was used as an electrolyte or the battery fluid.[13] A leading expert of the U.S. government initially expressed doubt and was sceptical about the invention as something absurd (as water was used as the battery fluid). Later, the government used the invention extensively during the World War II. Adam sued the government for patent infringement and breach of implied contract. The government challenged the validity of the patent under 35 U.S.C. §§ 102 & 103. The Supreme Court compared the invention with six relevant prior art references and followed the *Graham test* to hold that the patent was valid. When broken down, the invention revealed the following features:

(i) Existence of a non-rechargeable, wet battery (not storage, electrical battery)
(ii) Two electrodes consisting of magnesium and cuprous chloride
(iii) Electrolyte of plain or salt water

Notably, this was the first practical, water-activated, constant potential battery that could be stored without fluid.

The contention of the government was:

(i) Wet batteries comprising zinc anode and silver chloride cathode are old in the art, and prior art shows magnesium may be substituted for zinc and cuprous chloride for silver chloride
(ii) Unexpected advantages do not warrant the issuance of a patent.

While addressing the issues, the Court observed that

(i) Water-activation was an advancement in the art
(ii) Magnesium and cuprous chloride have an interdependent relationship; thus, the question was whether combining them was non-obvious. The prior art *taught away* from what Adams did – namely, water-activated batteries were successful only when combined with electrolytes detrimental to the use of magnesium.

The construction of the *Graham* ratio and its immediate application in *Adams* cleared the age-old mist of ambiguity surrounding the scope of non-obviousness determination. The Court rejected the flash of genius requirement. Thus, an effective normative standard of obviousness was created by way of teaching-away logic. This contemplates that if the existing prior art teaches away from the claimed invention, it is likely to be non-obvious and, thus, patentable. In *Adams,* the teaching-away logic played a crucial role in establishing the validity of the plaintiff's patent. The Supreme Court, in unequivocal terms, stated that "[t]he known disadvantages in old devices which would naturally discourage the search for new inventions may be taken into account in deterring obviousness." Furthermore, the nonobvious requirement of the U.S. patent statute was construed as a standard rather than as a rule for obviousness vis-à-vis non-obviousness inquiry. Section 103 of the U.S. Patent Act, 1952 can now be seen as a flexible, but at the same time parameter laying down provision. In a given situation, the *Graham* test may not ultimately lead to successful determination of obviousness or non-obviousness questions, but it would at least provide the boundaries within which

the decision-maker is required to operate as opposed to the earlier '*invention'* test.

The *Graham* Court stated that the PHOSITA might take a wide array of secondary considerations, such as the commercial success of the claimed invention, and long-felt but unsolved need addressed by the claimed invention into account to make a conclusive decision on the non-obviousness question. The Court had provided an indicative list of items that can come under the rubric of secondary considerations without elaborating any further. Notably, most of the considerations are general in nature, having varying degrees of connotations. *Prima facie* 'commercial success' is an economic and market consideration. As seen in *Hotchkiss*, solely this cannot be sufficient to surmount the constitutional limitations nor the requirements under Section 103 of the U.S. Patent Act, 1952.

In 1982, Congress abolished the Court of Customs and Patent Appeals (CCPA) to replace it with the United States Court of Appeals for the Federal Circuit (CAFC), having exclusive appellate jurisdiction over matters involving patent trials arising from the Federal District Courts.[14] After its establishment, CAFC deliberated on the scope and meaning of the expression "commercial success". In the *Demaco Corporation* v *F. Von Langsdorff Licensing Limited*case, the Court stated that

"[t]he commercial response to an invention is significant to determinations of obviousness, and is entitled to fair weight. The rationale for giving weight to the so-called "secondary considerations" is that they provide *objective evidence of how the patented device is viewed in the marketplace*, by those directly interested in the product…. When a patentee asserts that commercial success supports its contention of non-obviousness, there must of course be a sufficient relationship between the commercial success and the patented invention. The term "nexus" is often used, in this context, to designate a legally and factually sufficient connection between the proven success and the patented invention, such that the objective evidence should be considered in the determination of non-obviousness. The burden of proof as to this connection or nexus resides with the patentee."[15]

Explaining the expression further, in the *Iron Grip Barbell Co.* v *USA Sports* case, the Court stated that "[it] *required affirmative evidence of nexus where the evidence of commercial success presented is a license, because it is often cheaper to take licenses than to defend infringement suits."*[16]

The U.S. Supreme Court's decision in *KSR* v *Teleflex* is considered to be a milestone in the non-obviousness jurisprudence as it clarified the importance of construing proper PHOSITA in a given situation and re-emphasised the crucial role that PHOSITA plays in the non-obviousness determination.[17] In *KSR*, the Supreme Court stated that an invention needs to stimulate the progress of science, i.e., in the form of technical advancement, which is *not obvious to a person skilled in the art*. The Court provided an important link between obviousness determination and secondary consideration. It said that

"[w]hen there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious under §103."

Hence, the Court spelt out that there may be (i) anticipated technical solutions leading to commercial success, and (ii) unanticipated technical solutions leading to commercial success.The former is more likely to be held obvious than the latter one. Mere evidence of commercial success would not be able to rebut the finding of obviousness. An invention's unanticipated technical solution potential leading to commercial success is likely to support a non-obviousness determination as a supporting character. It needs to be noted here that this position is silent about the standalone and technical-solution-independent anticipated or unanticipated commercial success.

The examination guidelines issued by the USPTO in the Manual of Patent Examining Procedure (MPEP) now, in clear terms, embody this aspect.[18] The guideline provides some rationales that may or may not support a conclusion of obviousness as:

(i) Combining prior art elements according to known methods to yield predictable results;
(ii) Simple substitution of one known element for another to obtain predictable results;
(iii) Use of known techniques to improve similar devices (methods, or products) in the same way;
(iv) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;
(v) "Obvious to try"—choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;

(vi) Known work in one field of endeavour may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art;

(vii) Some *teaching, suggestion, or motivation* in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention

These seven rationales are to be read with the *inferences and creative steps* that *a person of ordinary skill in the art would employ*, for he is *a person of ordinary skill*and also*a person of ordinary creativity, not an automaton*.

The Manual of Patent Examining Procedure (MPEP) states that objective evidence, referred to as 'secondary considerations', including evidence of 'commercial success', *may be included in the specifications as filed, accompany the application on filing, or be provided in a timely manner at some other point during the prosecution*.[19] The guideline provides three ways in which such evidence can be considered at the time of grant of a patent.

(i) Filed as part of the Patent specification – On the date of filing of the patent application

(ii) Filed as a separate document along with the Patent specification – On the date of filing of the patent application

(iii) Filed as a separate document after filing the Patent specification – After the date of filing of the patent application but before the completion of the patent examination

So far as the first two categories are concerned, the evidence does not have any scope of being an afterthought, as it would be filed as part of or along with the patent specification on the date of filing of the patent application. However, the third category provides scope for submitting post-filing evidence relating to commercial success. The applicant can take advantage of *ex post* filing market behaviour of the product and thereby he/she can effectively capture the time between the priority date and the date on which evidence is filed to supplement his claim of non-obviousness.[19] It is to be noted here that MPEP is clear that "[*t]he weight to be given [to] any objective evidence is made on a case-by-case basis"* and *"[t]he mere fact that an applicant has presented evidence does not mean that the evidence is dispositive of the issue of obviousness*."[19]

The US law of non-obviousness, as discussed, is comprehended and summarised as under:

(i) Progress of science in the form of innovation, advancement of technology or things that add to the useful knowledge, is the foundation of the determination of obviousness.

(ii) This advancement must not be obvious to a person ordinary skilled in the art. This person is to be construed as someone having common sense, common knowledge, ordinary skill as well as ordinary creativity.

(iii) There are several tests which can be used to determine obviousness, including the obvious to try and the *Teaching Suggestion Motivation* (TSM) test.

(iv) Secondary considerations, including economic considerations such as commercial success, although not forming part of Section 103 of the U.S. Patent Act, 1952, may be considered at the stage of patent examination by patent examiners as well as in patent infringement suits by the Courts following *Graham*.

(v) In the patent examination stage, secondary considerations, including economic considerations such as commercial success, are to be evaluated on a case-by-case basis. The MPEP allows taking into consideration

a. Secondary factors that existed prior to the filing of the patent application

b. Secondary factors that existed after the filing of the patent application but before the completion of the examination stage.

(vi) In any patent infringement suit, where the validity of the patent is challenged, secondary considerations, including economic considerations such as commercial success alone,would most likely not lead to a non-obvious determination. They are mere supporting factors. Like the patent examiner, the court may look into the following categories of evidence.

a. Secondary considerations that existed prior to the filing of the patent application

b. Secondary considerations that existed after the filing of the patent application but before the completion of the examination stage

c. Secondary consideration that existed post-grant of the patent application and up till the date of the filing of the infringement suit

d. Secondary consideration that may come into existence post-filing of the suit in the form of additional evidence, if permitted by the courts.

To clarify the relationship of secondary consideration with obviousness determination, instead of a framework of "primary" and "secondary"considerations, a Time-based Framework is proposed by scholars in the field.[20] This framework gives importance to factors based upon their relative position from the date of filing of a patent application. Evidence concerning those factors may then accordingly be relied upon by the patent examiners and judges alike (Fig. 1).

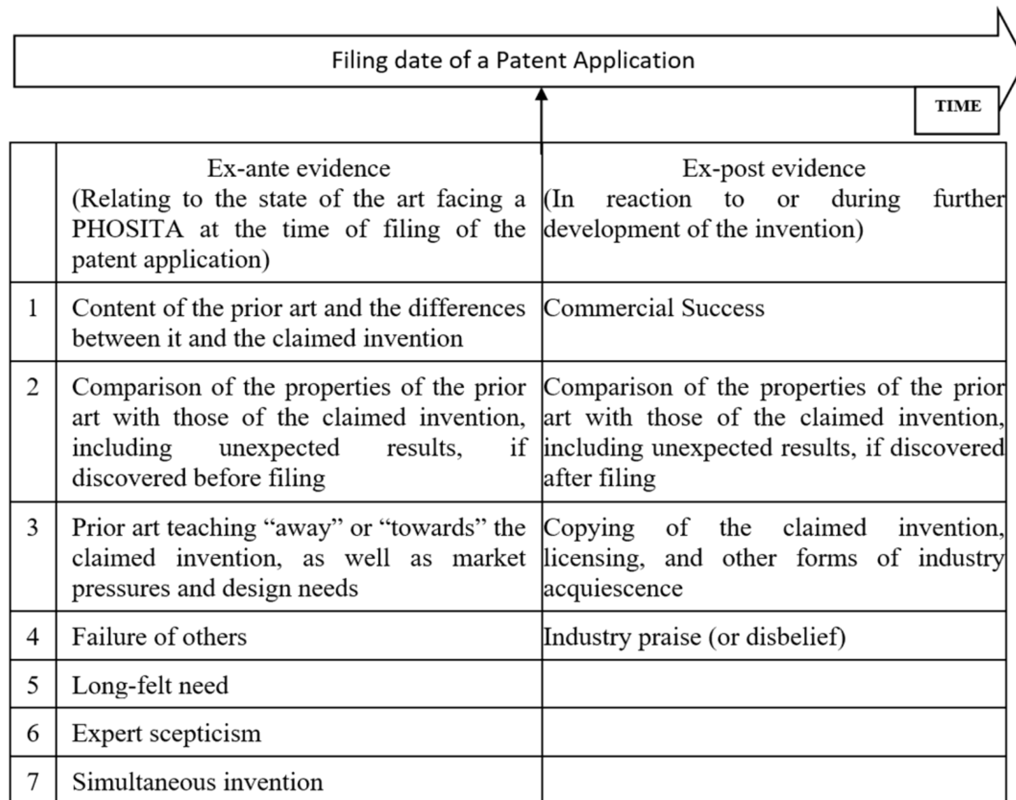
Throughout their attempts to clarify non-obviousness understanding, the US Congress and the Courts have maintained that non-obviousness is synonymous with technical advance, and that technical advance is not synonymous with economic consideration. With this understanding, we move on to see how other jurisdictions analyse the concept of obviousness.

Inventive step Analysis in the United Kingdom

Section 1(b) of the U.K.'s Patents Act, 1977 makes the presence of inventive step an essential requirement for patentability.[21] The term "inventive step" is defined in Section 3, which reads as under:

"[a]n invention shall be taken to involve an inventive step *if it is not obvious to a person skilled in the art*, having regard to any matter which forms part of the state of the art by virtue only of Section 2(2) above (and disregarding Section 2(3) above)."

The provision makes the determination of an inventive step a plain and simple process by co-equating the inventive step with non-obviousness. Interestingly, the legal framework of the invention step understanding in the U.K. was laid down by the Court of Appeal in *Windsurfing International* v*Tabur Machine*case.[22] The dispute was related to the alleged infringement of a patent on "wind-propelled vehicles" wherein the defendants counterclaimed for revocation of the patent under Section 32(1)(e) and (f) of the then Patents Act, 1949.Section 32(f) of the old Act stated that a patent could be revoked if it "is obvious and does not involve any inventive step having regard to what wasknown or used, before the priority date of the claim".[23] The Court found that the patent lacked an inventive step as being obvious to a person skilled in the art. The Court of Appeal laid down the following



	Ex-ante evidence (Relating to the state of the art facing a PHOSITA at the time of filing of the patent application)	Ex-post evidence (In reaction to or during further development of the invention)
1	Content of the prior art and the differences between it and the claimed invention	Commercial Success
2	Comparison of the properties of the prior art with those of the claimed invention, including unexpected results, if discovered before filing	Comparison of the properties of the prior art with those of the claimed invention, including unexpected results, if discovered after filing
3	Prior art teaching "away" or "towards" the claimed invention, as well as market pressures and design needs	Copying of the claimed invention, licensing, and other forms of industry acquiescence
4	Failure of others	Industry praise (or disbelief)
5	Long-felt need	
6	Expert scepticism	
7	Simultaneous invention	

Fig. 1 — Secondary consideration under 'obviousness' analysis

four-step test to be observed while analysing the inventive step of an invention.

"[t]here are, we think, four steps which require to be taken in answering the jury question. The first is to identify the inventive concept embodied in the patent in suit. Thereafter, the court has to assume the mantle of the normally skilled but unimaginative addressee in the art at the priority date and to impute to him what was, at that date, common general knowledge in the art in question. The third step is to identify what, if any, differences exist between the matter cited as being "known or used" and the alleged invention.Finally, the Court has to ask itself whether, viewed without any knowledge of the alleged invention, those differences constitute steps which would have been obvious to the skilled man or whether they require any degree of invention."

These guidelines were further deliberated upon and partially modified later in *Pozzoli SPA* v *BDMO SA* case.[24] While analysing the inventive step of a patent on 'double push tray', the Court of Appeal gave the following guidelines:

"(1)(a) Identify the notional person skilled in the art.

(b)Identify the relevant common general knowledge of that person;

(2) Identify the inventive concept of the claim in question or if that cannot readily be done, construe it;

(3) Identify what, if any, differences exist between the matter cited as forming part of the state of the art and the inventive concept of the claim or the claim as construed;

(4) Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the person skilled in the art, or do they require any degree of invention?"

Following the above guidelines, the Court of Appeal found the patent to be lacking inventive step for being obvious to a person skilled in the art.In addition to technical factors, secondary considerations such as 'commercial success' do not find any place in Section 3 of the U.K. Patents Act, 1977 and are not a decisive factor for the determination of the inventive step.[25] However, in the *Dyson* v *Hoover* case,[26] the Court of Appeal opened up possibilities for considering such additional factors.

The Court stated that

"[i]f then the intellectual horizon of practical research and innovation is in part set by the economic milieu, *commercial realities cannot necessarily be divorced from the kinds of practical outcome which might occur to the law's skilled addressee* as potentially worthwhile."

The Court further stated that

"[i]t is entirely in accordance with what we know about innovation that this*commercial mindset will have played a part in setting the notional skilled addressee's mental horizon*, making a true inventor of the individual who was able to lift his eyes above the horizon and see a bag-free machine."

This changing stance towards factors other than technical is also reflected in the U.K. Manual of Patent Practice, published by the U.K. Intellectual Property Office.[27] However, the U.K. position on 'inventive step' is devoid of any ambiguities. Similar to the United States, economic factors (if any) play a supporting role instead of unconnected independent criteria in the United Kingdom.

Inventive Step Analysis in India

Section 2(8) of the Patents and Designs Act of 1911 (the law that governed patents in India prior to the Patents Act, 1970) defined invention as*"any manner of new manufacture"* and included *"an improvement and an alleged invention"*. The 1911 Act as such did not contain any specific definition of novelty, inventive step, or industrial application.

After the independence, the Government formed a Committee headed by Dr.Tek Chand Bakshi, a retired Judge of the High Court of Lahore, to review the working of the 1911 Act and to suggest changes in the patent law to sync it in tune with the policy interests of the nation. In its interim report submitted in August 1949, the Committee suggested immediate incorporation of compulsory licensing, which was accepted by the Government of India.[28] Following the final report and recommendations submitted by the Committee in April 1950, a Bill was introduced by Shri T.T. Krishnamachari, the then minister for commerce and industry, in the Lok Sabha as Bill No. 59 of 1953. The Bill, however, was not proceeded with, and it lapsed with the dissolution of the first Lok Sabha. In this Bill, the term "invention" was defined under Section 2(h). The contemplated Section read as under:

"[i]nvention" means

(i) any new and useful manufacture;

(ii) any new and useful composition of matter;

(iii) any new and useful improvement of any such manufacture or composition of matter;

which is capable of being used or applied in trade or industry and which is not previously known or used in India;

Explanation I—An invention shall not be deemed to be *new* unless it involves an *inventive step*.

Explanation II—An invention shall not be deemed to be useful unless it achieves the object which is claimed for *it and makes a definite contribution to the existing stock of technical knowledge* in India on the subject-matter of the invention;"

A plain reading of Explanation I of the Bill suggests that inventive step was an integral part of newness of an invention. It was *sine qua non*for determining such newness. When delved deep, arguably, it appears that inventive step stood in a sequentially prior order than modern rendition and ordering arrangement of novelty and non-obviouscriteria. Explanation II made a contribution to technical knowledge, an integral part of the determination of the patentability of an invention in the proposed Bill.

In 1957, the Government appointed a fresh committee under the chairmanship of Justice N. RajagopalaAyyangar to study and recommend changes to the patent law in India. The Committee suggested, *inter alia*,the following ground for pre-grant opposition:

"[t]*hat the invention so far as claimed in any claim of the complete specification is obvious and* ***so*** *does not involve any inventive step, having regard to what was known or used in India or what was published in* India or elsewhere before the priority date of the claim;"

It is to be noted here that the committee considered obviousness to be synonymouswith a lack of inventive step.Despite this discussion, the Patents Bill of 1965 did not incorporate this change in its final draft.This recommendation of the Ayyangar Committee was based on *Benmax* v *Austin Motor Company*[29]. The case, *inter alia*, involved interpretation of Section 32(1)(f) of the U.K. Patents Act, 1949. The provision read as:

32. Revocation of patent by Court.

(1) Subject to the provisions of this Act, a patent may, on the petition of any person interested, be revoked by the court on any of the following grounds, that is to say,—

…………………………………………

(f) that the invention, so far as claimed in any claim of the complete specification, *is obvious anddoes not involve any inventive step* having regard to what was known or used, before the priority date of the claim, in the United Kingdom

……………………………….............

Evershed M. R., J. while interpreting the above provision expressed doubts as to whether obviousness and inventive step are double requirements or not. The judge observed:

"[i]n passing I may observe that Mr. Whitford drew attention to the use of the word 'and'- that the invention must be obvious and such as not to involve any inventive step - and suggested that there might be cases *where though it was obvious, still it involved an inventive step*. So far as the present case is concerned, I am satisfied that there is no significance in *that double requirement, if there be a double requirement*. If it is established that this alleged invention is or was at the material date obvious as that word is commonly used, then it follows that it did not involve any inventive step".

Some probable conjectures that can be drawnfrom the above observation are:

(i) Usually, obviousness involves a lack of inventive step. In other words, the absence of one implies the automatic absence of the other.

(ii) However, there may be a situation where an invention may appear obvious and yet it could involve an inventive step.

The issue as to whether non-obviousness and inventive step imply distinct meanings and as such non-obviousness and inventive steps are independent double requirements, still remains open-ended and unanswered. The UK Court put the issue at rest without expounding it further as the facts of the case did not demand delving into any such doctrinaire complexities. Now, when we turn our attention to India, it is found that the Supreme Court equated 'Inventive step' with 'non-obvious' while dealing with a patent infringement dispute under the old 1911 Act in *Bishwanath Prasad Radhey Shyam*v*Hindustan Metal Industries*.[30] Notably, the Court found that the expression "does not involve any inventive step" used in Section 26(1)(e) of the 1911 Act to be equivalent to the word "obvious" and emphatically stated that the words acquired special significance in the terminology of patent law. This synonymous reading of inventive step and non-obviousness continues in judicial pronouncements even today.In 2022, *A very Dennison* v *Controller of Patents*[31], the Delhi High

Court listed several tests for the determination of Inventive Step/Lack of Obviousness. Throughout the judgement, the Court interchangeably used the two terms, suggestive of the fact that even the interpreters of law do not find any meaningful difference between the two terms.

The legislative history of the patentability criteria including the non-obviousness understanding, reveals fundamental policy and paradigm shift at various stages of India's transition from a new-born welfare-oriented economy to a WTO-compliant market economy through a long stint of socialist-leniency (Table 1).

As can be seen in the Table 1, in the U.S. 'non-obviousness' and 'technical advance' are linked together and must be read conjointly. The definition of "inventive step" that was inserted by the Patents (Amendment) Act, 2002 was reflecting this U.S. view of non-obviousness. However, this definition of inventive step was short-lived; the

Table 1 — Legislative changes in the Indian Patent Law

S.No.	Act	Relevant definition	Section	Remarks
1	Patents and Designs Act, 1911	Invention	2(8) - invention means any manner of new manufacture and includes an improvement and an alleged invention	The Act did not contain definitions of 'novelty', 'inventive step' or 'industrial application'.
2	Patents Enquiry Committee (Final) Report, 1948-50	Invention	It was recommended that "invention" should be given a wider meaning than in the present Act, to include inventions capable of application for industrial uses, even if they are concerned with processes only and do not result in the manufacture of any article;	Dr.BakshiTek Chand was the Chairman of the committee. Other members of the committee included:- Mr. GurunathBewoor, Major General S.S.Sokhey, Mr. N.Barwell, Mr. S.P.Sen, Mr. S.M.Basu, Dr.S.D.Mahant, Mr. K.RamaPai.
		Inventive step	It was also recommended that 'inventive step' in relation to what was known or used in Indian should be an essential requisite for *novelty*.	
	Patents Bill, 1953	Invention	2(h) - invention means (i) any new and useful manufacture; (ii) any new and useful composition of matter; (iii) any new and useful improvement of any such manufacture or composition of matter; which is capable of being used or applied in trade or industry and which is not previously known or used in India; Explanation I—An invention shall not be deemed to be new unless it involves an inventive step. Explanation II—An invention shall not be deemed to be useful unless it achieves the object which is claimed for it and makes a definite contribution to the existing stock of technical knowledge in India on the subject-matter of the invention.	Following the final report and recommendations submitted by the Patents Enquiry Committee, 1948-1950, Patents Bill, 1953 was introduced in the Lok Sabha. The Patents Bill, 1953 lapsed with the dissolution of the First Lok Sabha.
3	Report on the Revision of the Patents Law, 1959		One of the proposed grounds for pre-grant opposition was: "That the invention so far as claimed in any claim of the complete specification is obvious and so does not involve any inventive step, having regard to what was known or used in India or what was published in India or elsewhere before the priority date of the claim".	Report was prepared and submitted by Mr. N. RajagopalaAyyangar, J. He was assisted by Dr. S. Venkateswaran. The proposed amendment was not incorporated in the Patents Bill, 1965.

(*Contd*.)

Table 1 — Legislative changes in the Indian Patent Law (*Contd.*)

S.No.	Act	Relevant definition	Section	Remarks
4	Patents Act, 1970	Invention	2(j) - invention means any new and useful— (i) art, process, method or manner of manufacture; (ii) machine, apparatus or other article; (iii) substance produced by manufacture, and includes any new and useful improvement of any of them, and an alleged invention;	The Act does not contain definitions of ‘novelty’, ‘inventive step’ or ‘industrial application’.
5	Patents (Amendment) Act, 2002	Invention Inventive step	2(1)(j) - invention means a new product or process involving an inventive step and capable of industrial application; 2(1)(ja) - inventive step means a feature that makes the invention not obvious to a person skilled in the art	a) Section 2(1)(j) of the Patents Act, 1970 was substituted with 2(1)(j) and 2(1)(ja) introducing definition of ‘inventive step’. b) Introduced Section 2(1)(ac) containing definition of ‘capable of industrial application’. c) The Act contains no express definition of ‘novelty’.
6	Patents (Amendment) Act, 2005	Inventive step	2(1)(ja) - inventive step means 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;	a) Substituted the definition of ‘inventive step’ contained in Section 2(1)(ja). b) Section 2(1)(j) containing definition of ‘invention’ and Section 2(1)(ac) containing definition of ‘capable of industrial application’ remained unchanged. c) The Act contains no express ‘definition of novelty’.

Patents (Amendment) Act, 2005, brought in the current definition, which has been explained later. The Parliamentary debate pertaining to the 2002 Amendment, which was centred on the issue of allowing product patents for pharmaceutical inventions,is worth examining.Mr. Ajoy Chakraborty, MP,in place of the original version of Section 5 of the Patents Act, 1970 (which prevented product patents for pharmaceutical inventions), proposed a new Section 5 containing an apparently innocuous but importantexplanation. The proposed Section was as under:

“[p]atents shall be available for any inventions including pharmaceutical substances whether products or processes in all field of technology, provided that they are new, involve an inventive step and are capable of industrial application.

Explanation: - For the purposes of this Section, the term *‘inventive step’* and ‘capable of industrial application’*may be deemed to be synonymous with the term “nonobvious”* and ‘useful’ respectively.”

However, when this amendment to Section 5 was put to vote, it was not accepted.

During the discussion in the upper house of Parliament of India, Mr. Manoj Bhattacharya, MP, in his speech attempted to distinguish ‘obviousness’ and ‘inventive step’. He stated:

“[t]he traditional requirements for patenting are changed by dismissing the inventive steps. Something goes beyond a mere discovery, as a necessary condition for patentability. Article 27 demands an inventive step but redefines it as 'non-obvious'. This makes an important difference applying tribal and traditional knowledge obtained in the South -- i.e., countries like ours, countries like India, and many other under-developed or developing countries - to problems in the North might not involve an inventive step, but it may be considered as non-obvious.”

This interpretation and distinction suggested by Mr. Manoj Bhattacharya does not fit well with the understanding that we have gained by discussing the U.S. cases as well as the *Benmax* case. Something which is non-obvious would involve inventive step.

The present inventive step and non-obviousness requirements in India areembodied in Section 2(1)(ja) of the Patents Act, 1970.The provision states that

"inventive step means 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". It is worthy to note here that the Indian law uses the phrase '*a person skilled in the art'* whereasthe U.S. law uses the expression 'a person having *ordinary* skill in the art'.[34]Since the Indian law does not use the prefix *ordinary* before the word *skill*, questions arise as to the standard of the person judging the non-obviousness. Should such a person be semi-skilled, ordinarily skilled, highly skilled or extraordinarily skilled? However, in practice, the standard of skill in India is deemed to be that of an *ordinary* person.

When we turn to the meaning and purport of the provision, a plain and simple reading reveals that an invention clears the inventive step requirement if

(i) It contains a feature that makes a technical advancement as compared to the existing knowledge, *and* that feature is also non-obvious to a person skilled in the art.

(ii) It has a feature of economic significance,*and* that feature is also non-obvious to a person skilled in the art.

(iii) It contains a feature that makes a technical advancement as compared to the existing knowledge as well as that feature is of economic significance (meaning of *both*) and that feature is also non-obvious to a person skilled in the art.

Therefore, it is apparent that purely on the grounds of mere technical advancement or economic significance, an invention would not be able to clear the inventive step requirement. In both situations, the invention, additionally, must appear non-obvious to a person skilled in the art. This makes non-obviousness a subset of inventive step. Thus, inventive step and non-obviousness are double requirements in India. The above reading is based on the assumption that the term 'and'appearing in Section 2(1)(ja) is conjunctive 'and'. This is in coherence with the well-accepted canon of statutory interpretation, which suggests that, in general, 'and' should be read as 'conjunctive and' unless such interpretation leads to absurdity.[33] When it comes to patent law practice in India, it is found that non-obviousness objections raised by the examiners are often being rebutted by attempts of establishing technical advancement. Does this mean that establishing either technical advancement or non-obviousness is enough for the grant of a patent? Is it also suggestive of a possible disjunctive reading of the term 'and'?

It would not be out of place to reflect on the interrelation between *economic significance* and *obviousness*. Interestingly, a disjunctive reading of the term 'and' in this context would allow the grant of a patent solely on the grounds of secondary economic significance. In this regard, the Supreme Court's comment in *Bishwanath Prasad Radhey Shyam*v*Hindustan Metal Industries* is worth citing.[30] The Supreme Court, opined that

"[i]t is important to bear in mind that in order to be patentable an improvement on something known before or a combination of different matters already known, *should be something more than a mere workshop improvement; and must independently satisfy the test of invention or an inventive step. To be patentable the improvement or the combination must produce a new result, or a new article or a better or cheaper article than before. The combination of old known integers may be so combined that by their working inter relation they produce a new process or improved result. Mere collocation of more than one integer or things, not involving the exercise of any inventive faculty, does not qualify for the grant of a patent."*[30]

The Supreme Court has given a clear indication that an improvement which causes an article to be made cheaper than before can qualify the test of inventive step. This further demonstrates the need to clarify the obviousness jurisprudence in India.

In *F. Hoffmann-La Roche Ltd and another* v*Cipla Ltd.*,[34] a Single Bench of the Delhi High Court comprising of Justice Manmohan Singh stated that from a conjoint reading of Section 64 and Section 2(1)(ja) of the Patent Act, 1970 certain essential ingredients of inventive step could be synthesised. To qualify the inventive step test, (a) the claimed invention must involve a technical advancement as compared to existing knowledge or economic significance or both; andb) suchtechnical advancement or economic significance or both, additionally should make the invention non-obvious to the persons skilled in the art.The Court went on to clarify the position by stating that those

"[c]onjunctive requirements of [Section 2(1)(ja)] …… means that not merely there should be a technical advancement in the invention but at the same time, it should not be obvious to the person skilled in art. Therefore, both the requirements are to be satisfied conjunctively. It is noteworthy here again that beyond the said two ingredients, there is *no further ingredient which should be read into in order to enlarge or limit the scope of the Section*."

The Court further stated

"[i]t is true that the said commercial success *per se is not determinative of the fact that there is a non-obviousnes*s, but it at least *somehow acts as an attending circumstance* to show that there could have existed the purposeful research on the existing state of the art by the person who is skilled in the art, who has made certain experiments and by narrowing down the compounds resulting in a single compound which has been widely successful and efficacious."

The case thus asserts that economic significance cannot be used as an independent and standalone criterion for evaluating inventive step. This somehow appears to be contrary to the Supreme Courts' view in *Bishwanath Prasad Radhey Shyam* v *Hindustan Metal Industries.*[30]

Interestingly, in the post-grant opposition proceedings involving Indian Patent 209251[35] (having International Application No. IN/PCT/2002/ 00785/DEL, titled Pyrrole Substituted 2-Indolinone Protein Kinase Inhibitors, known by the brand names of "Sunitinib/Sutent"), *huge commercial success* was pleadedby the patentee, as a factor for countering the findings of obviousness and turning it into a finding of non-obvious.However, the Controller refused to accept this argument. In his order dated 11.2.2013, the Controller opined that

"(E22) I observe that when as the instant claims are clearly obvious to a skilled artisan, so, the commercial success of the instant product (Sunitinib) as submitted by the patentee cannot be considered as an evidence of a patentable invention.

I rely on Patent Law by *P.Narayanan (4th Edition) at page 418, Section 16-93*, which states that *If an invention is obvious from a technical or practical point of view, it will be invalid even though it was commercially successful and the step taken was not an obvious commercial step to take*."

If *technical factors* are the only factors which decide the inventiveness of an invention, there is no role of *economic factors* or *commercial factors* in this determination. This interpretation makes the clause '*economic significance'* under Section 2(1)(ja) redundant.

Additionally, the Indian National IPR Policy, 2016, the current Indian Patent Rules, 2013,the Indian Manual of Patent Office Practice and Procedure, 2019 as well as the subject matter-specific patent guidelines are silent on the following points:[36]:

(i) The distinction between 'inventive step' and 'non-obvious'

(ii) The exact scope and nature of 'economic significance' under the concept of 'Inventive step'.

Interestingly, the Indian Manual of Patent Office Practice and Procedure, 2019 gives various tests to determine 'inventive step' and 'non-obvious'. It interchanges and synonymously uses 'inventive step' and 'non-obvious' as if no difference exists between the meanings of these two terms. It alsoputs five points(factors) to be analysedin order to assess the inventive step of an invention. These points are identical to the guidelines given in the *Pozzoli SPA* case, under the U.K. understanding. The manual adds this test without understanding the backdrop of the five-step test, undermining its importance in terms of a reference document.

Analysis of Interface Patents in India

Interoperability is the ability of software to connect, interact, transfer data with other software having similar interfaces. These elements of a computer program maintain the communication protocol between different elements of the system as a whole including the hardware components. According to Institute of Electrical and Electronics Engineers (IEEE) interoperability in the context software refers to [t]he ability of two or more systems or elements to exchange information and to use the information that has been exchanged."[37] As the definition suggests there can be interoperability between operating system program and hardware platform, application programs and operating system program as well as between application programs.

There exists a great deal of uncertainty concerning the scope and ambit of intellectual property protection for software. Copyright law does not protect the functional aspects of software. In most jurisdictions copyright law considers limited and specific usage of interoperable components for achieving access to other programs as fair dealing. In view of the present not-so-friendly copyright law framework, the proprietary software developers are placing increasing reliance on patent protection. In general, when an applicant seeks a patent on computer program by relating it to the novel hardware components; he/she is most likely to get the grant. However, the scope of pure software patent is marked by an uncertainty. When one looks at the patent protection landscape in India for software and its interoperable components, it emerges that proprietary rights over interfaces may be secured by

1) A patent application only on the software interfaces(highly unlikely to be granted in India or elsewhere)[38]; and
2) A patent application for a software containing packages, library, interfaces, etc. wherein interface is not directly claimed but forms a part of the whole software package performing certain functions, containing system and method claims.

The administrative classification of patent application followed by the Indian Patent Office (IPO) puts both the aforementioned categories under the 'software' field. A separate sub-category of software interfaces under 'software' is not present at this moment. What constitutes an 'Interface' and how should such an application be categorised at the initial stage by patent administration is not discussed by any of the Indian Patent Office Guidelines and Manuals.[39] The second category of patent applications on software performing certain functions is the most dominant form of patenting. The patents litigated in the *Oracle* v*Google* are an example of this category of patent.[40] If we look at the claims of the two Oracle patents alleged to have been infringed, we find that the claims are worded either in terms of 'system' claims or 'methods implemented on a system' claims.[41] These claims are generally accepted at USPTO, EPO and IPO.

To guide applicants as to the practice and procedure adopted by the Indian Patent Office, certain subject matter guidelines have been published by the Office of the Controller General of Patents, Designs and Trade Marks. In 2013, the first version of the Guidelines for Examination of Computer-Related Inventions (CRIs) was released.[42] The guideline elaborated upon how inventive step analysis, and specifically how 'technical advancement' analysis (under Section 2(1)(ja) of the Act) should be conducted. It stated that technical advancement is a contribution to the state of art in any field of technology, and comes with a technical effect. According to the guidelines, a technical effect takes place when an invention proposes a solution to a technical problem. It cautions, that all technical effects may or may not result in technical advancement. This problem-solution understanding for the analysis of the 'inventive step' is native to the European Union and not the United Kingdom. Article 56 of the European Patent Convention defines inventive step[43] as 'An invention shall be considered as involving an inventive step if, having regard to the state of the art, *it is not obvious to a person skilled in the art*….'

Article 56, read with Rule 42 of Chapter II, Part III of the Implementing Regulations to the Convention on the Grant of European Patents[44], gives the foundational basis for such a problem-solution approach, followed in the European Union. Rule 42 reads as:

"Content of the description

(1) The description shall:

….

(c) disclose the invention, as claimed, *in such terms that the technicalproblem, even if not expressly stated as such, and its solution can beunderstood, and state any advantageous effects of the invention withreference to the background art;*

…."

Although such a problem-solving approach was always followed by the examining, opposition and legal divisions of the European Patent Office, yet in caseT0021/81[45], theBoard of Appeals gave a structured approach for the analysis ofthe inventive step of aninvention in the form of a solution to a technical problem which is not obvious to a person skilled in the art.

"Objectivity in the assessment of inventive step is achieved *by starting out from theobjectively prevailing state of the art,* in the light of which the problem isdetermined which the invention addresses and solves from an objective point of view and *consideration is given to the question of the obviousness of the disclosed solution to this problem as seen by the man skilled in the art* and having those capabilities which can be objectively expected of him. This also avoids the*retrospective approach* which inadmissibly makes use of knowledge of the invention, as feared by the appellant.

…when examining for inventive step, the state of the art must be assessed from the point of view of the man skilled in the art at the time of priority relevant for the application. Consequently*all previously published embodiments must be taken into consideration which offered a suggestion to the skilled practitioner for solving the problem addressed*, even where the embodiments were not particularly emphasised….

The considerable *technical effect* here claimed provides no basis for the presence of inventive step, if only because it is not surprising, but was on the contrary certainly to be expected in view of the problem facing the skilled practitioner."

It is important to understand that, out of several possible tests to analyse inventive step, the problem-

solution test has a legislative basis in the E.U., and therefore, the analysis is restricted in that sense.

Furthermore, under the 'Examination Procedure - Inventive Step' heading of this 2013 Indian guideline, the *Windsurfing/Pozzoli* tests propounded by the U.K. Court of Appeal were also included. The *Windsurfing/Pozzoli*tests have also been accepted by the Division Bench of the Delhi High Court in *F. Hoffmann-La Roche Ltd* v*Cipla Ltd.*[46]As we have discussed before, in the United Kingdom, "inventive step" and "non-obvious" are considered to be one and the same. A test applicable under United Kingdom will be a misfit, given our uniquelydrafted definition of "inventive step" given under Section 2(1)(ja).

Thereafter, in the year 2016, another version of the Guidelines for the Examination of Computer-Related Inventions, replacing the previous Guidelines, was released to the public.[47] This set of guidelines removed the 'technical effect' and 'technical advancement' understanding given by the previous set of Guidelines but retained the *Windsurfing/ Pozzoli*tests. Needless to say, a contextual understanding of the term 'technical advancement' is necessary for the proper 'inventive step'holding under Section 2(1)(ja) of the Indian Patents Act, 1970. The understanding of this term may or may not be akin to that of the EU, but it is an essential component for the determination of the patentability of an invention and should have been included in the guidelines, with or without modification. This deletion is suggestive of the fact that the inventive step analysis in India ought not be restricted to only a problem-solution approach, instead should be inclusive of several other possible tests such as 'obvious to try', 'could-would', 'teaching suggestion motivation' discussed in the recent judgement of Delhi High Court in *Avery Dennison* v*Controller of Patents*.[48]

In the year 2017, another version of the CRI Guidelines was issued by the Office of Controller General of Patents, Designs and Trade Marks.[49]The Guidelines held on to the *Windsurfing/Pozzoli* tests. Is this indicative of a tacit acknowledgement that 'inventive step' and 'non-obvious' are one and the same?

Additionally, none of the versions of the CRI Guidelines discussed the scope and position of economic significance, either as a standalone, independent criterion satisfying the 'inventive step' requirement or as a supporting criterion.

When an interoperable software developer seeks a patent for a work-alike program using different code but embedding necessary and standard interoperable components, he/she might face challenges due to the prevailing uncertainty concerning the exact meaning and scope of inventive step/non-obviousness in India.As it is difficult to establish non-obviousness in these scenarios and since "economic significance" alone is not sufficient to support a grant, he/she might be denied a patent though considerable money and efforts are involved in developing the program. This has the potential to destabilize the delicate incentivization balance needed for success of patent prospect in India including initiatives like *Make in India*.Since work-alike programs are mere cheaper substitutes, "economic significance" alone should be the sole judging criteria as there is no apparent technical advancement to the prior art. This position isin line with the Indian Supreme Court's Judgment in *Biswanath Prasad* case.[30] There are several options by which it may be achieved (Table 2).

Table 2 — Proposed changes to the Indian Patent Law

Current provision	Proposed options for amendment
2(1)(ja) – 'inventive step' means 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	1. Revert to Section 2(1)(ja) as inserted by the Patents (Amendment) Act, 2002 (with certain changes): Inventive step means a feature that makes the invention not obvious to a person skilled in the art or having economic significance or both. 2. Remove "*and that makes the invention not obvious to a person skilled in the art*" from the current Section 2(1)(ja): Inventive step means a feature of an invention that involves technical advance as compared to the existing knowledge or having economic significance or both. Or Redraft in terms of the Patents Bill, 1953: Inventive step means a feature of an invention that makes a definite contribution to the existing stock of technical knowledge or having economic significance or both. 3. Redraft in terms of *not obvious to a person skilled in the art or having economic significance or both*. Same as Option 1

Conclusion

Footnote to Article 27 of the TRIPS Agreement[50] suggeststhat the expressions 'non-obvious' and 'inventive step' are not dissimilar.The analysis of statutory provisions and court decisions, given above reveals severalsimilarities as well as dissimilarities between the two understandings. Moreover, what meanings to be assigned to each of such expressions entirely depend on the national policies of the concerned memberstates. Now, a troublesome ambiguity arises as to what constitutesthe minimum standard to be complied with by the WTO members - inventive step or non-obviousness.As the main body of Article 27 uses the term "inventive step", further doubts arise as to whether the Footnote to that Article can control or override the express wording of the main text. The international law with regard to the interpretation of treaties suggests that ordinary meaning is to be given to the terms used in the treaty unless that meaning results in ambiguity or obscurity.[51] Undoubtedly, this is a situation that creates an ambiguity that demands immediate resolution.

Additionally, the TRIPS Agreement mandates compliance withthe *Paris Convention for the Protection of Industrial Property (1967).* This conventionmainly deals with the priority issues in patent applications. Be that as it may, the definitions of 'inventive step', 'non-obvious', 'invention', 'novelty', and 'industrial application' are nowhere to be found in this Convention. As of now, TRIPS is the only international instrument that deals with the substantive aspects of patent law, and as such,it is required to lay down definitions or clarifications about the 'inventive step' and/or 'non-obvious'. In the absence of such clarity, the desired consistency of interpretation may not be achievable at the global level.

As a founding member of GATT, 1947 and WTO, India must uphold its commitment tobringing clarity to the conundrum of 'inventive step/non-obvious'interpretation. Notably, any such ambiguity concerning the patentability requirements will lead to market uncertainty which is not desirable for a fast-growing economy like us.

Before going global with the suggestion of amending TRIPS, India must put its own house in order by clarifying its position. A clear and foreseeable rule for inventive step determination would also be in sync with the *Make in India* initiative of the Government of India. Especially if genuine and calculable commercial success of the invention is made one of the standalone criteria for inventive step holding, small inventions that achieve market success but are non-patentable due to lack of inventive step would secure patent protection. On the other hand, if the legislature decides that economic consideration such as commercial success should not be made an independent criterion for the purposes of patent protection, other incentives such as short-term patent protection, utility model protection, innovation patent or simple/small/petty patent protection should be conferred to such inventors.

References

1 Article 27 of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) mentions the Patentable Subject Matter. It states the following:

"1. Subject to the provisions of Paragraphs 2 and 3, patents shall be available for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application.5 Subject to paragraph 4 of Article 65, paragraph 8 of Article 70 and Paragraph 3 of this Article, patents shall be available and patent rights enjoyable without discrimination as to the place of invention, the field of technology and whether products are imported or locally produced.

Members may exclude from patentability inventions, the prevention within their territory of the commercial exploitation of which is necessary to protect *ordre* public or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the environment, provided that such exclusion is not made merely because the exploitation is prohibited by their law.

Members may also exclude from patentability:

(a) diagnostic, therapeutic and surgical methods for the treatment of humans or animals;

(b) plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof. The provisions of this subparagraph shall be reviewed four years after the date of entry into force of the WTO Agreement."

2 The Constitution of the United States: A Transcription. National Archives, U.S. National Archives and Records Administration, 4 May 2023, www.archives.gov/founding-docs/constitution-transcript.

3 The current U.S. Patent Act of 1952 superseded the former U.S. Patent Act of 1870.

4 *Hotchkiss* v *Greenwood*, 52 U.S. (11 How.) 248 (1851).

5 Section 6 of the U.S. Patent Act of 1836 read as under:

"And be it further enacted, That any person or persons having Applications, discovered or invented any new and useful art, machine, manufacture, how made or composition of matter, or any new and useful improvement on any art, machine, manufacture, or composition of matter, not known or used by others before his or their discovery or invention thereof, and not, at the time of his application for a patent, in

public use or on sale, with his consent or allowance, as the inventor or discoverer; and shall desire to obtain an exclusive property therein, may make application in writing to the Commissioner of Patents, expressing such desire, and the Commissioner, on due proceedings had, may grant a patent therefor….."

6 Nard C A, *The law of Patents,* (Aspen Publishers, United States of America), (2007) 321.

7 This newly founded requirement was known as the "invention" requirement in this case.

8 The requirement "flash of creative genius" was discussed in *Cuno Corp* v *Automatic Devices Corp*, 314 US 84 (1941).

9 *Graham* v *John Deere Co*., 383 U.S. 1 (1966).

10 In the Graham case, two cases were consolidated which were No. 37, *Calmar, Inc*. v *Cook Chemical Co*., and No. 43, *Colgate-Palmolive Co.* v *Cook Chemical Co*. The Graham case dealt with the infringement of a patent issued on "a device designed to absorb shock from plow shanks in rocky soil to prevent damage to the plow", whereas the Cook Chemical cases dealt with the infringement of a patent issued on "a plastic finger sprayer with a hold down lid used as a built-in dispenser for container or bottles".

11 *Graham* v*John Deere Co.*, 383 U.S. 1 (1966), at 17-18.

12 It is important to note that, "Secondary considerations" are not formally codified in the U.S. Patent Act, 1952 and forms the part of common law.

13 *United States* v *Adams*, 383 U.S. 39 (1966).

14 The United States Court of Appeals for the Federal Circuit (CAFC) was established by the Federal Courts Improvement Act, 1982.

15 *Demaco Corporation* v *F. Von Langsdorff Licensing Limited* and F. Von LangsdorffbauverfahrenGmbh, 851 F.2d 1387 (Fed. Cir. 1988). The case dealt with the infringement of a patent for a "paving stone" of a specific shape and proportion. The patentee (Defendant) in this case had discharged their initial burden of proving a nexus between the patented paving stone and the commercial success. Whereas Demaco Corp.(Plaintiff) was unable to discharge the burden of proving whether the commercial success was due to patented product or other factors such as advertising, etc. The court went on to hold that the patent was valid and infringed. This ruling of validity was supported primarily by the technical advance which the patent brought about that is the structural advantage of the overall shape created, the traffic load strength by enabling an interlocking pavement. Hence, the secondary 'economic' consideration that is, commercial success alone was not responsible for the finding of non-obviousness, but instead, was supporting in nature.

16 *Iron Grip Barbell Co., Inc.* v *USA Sports, Inc.*, 392 F.3d 1317, 1322, 73 USPQ2d 1225, 1228 (Fed. Cir. 2004). The case dealt with the infringement of a patent disclosing "*a weight plate with three elongated openings near the periphery of the plate that function effectively as handles*". The court found the patent to be invalid by reason of obviousness in view of weight plates showing one, two and four elongated openings found in the prior art and the patentee not being able to show evidence of marketplace success along with other affirmative objective evidence of non-obviousness.

17 *KSR Int'l Co.* v *Teleflex Inc.,* 550 U.S. 398 (2007),The case dealt with the infringement of a patent *on connecting an adjustable vehicle control pedal to an electronic throttle control*.

18 MPEP Examination Guidelines for Determining Obviousness under 35 U.S.C. 103 In View of the Supreme Court Decision in *KSR International Co.* v *Teleflex Inc*., Examples of Basic Requirements of a Prima Facie Case of Obviousness[R-07.2022], Section 2143, https://www.uspto.gov/web/offices/pac/mpep/s2143.html (08 February 2023).

19 MPEP Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 [R-10.2019], Section 2141, https://www.uspto.gov/web/offices/pac/mpep/s2141.html (8 February 2023).

20 Karshtedt D, *'Nonobviousness: Before and after'*, *Iowa Law Review*, 106 (2021) 1609-1682, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3820851 (8 February 2023).

21 Section 1, U.K. Patents Act, 1977.

22 *Windsurfing International Inc.*v*Tabur Marine (Great Britain) Ltd*., *Reports of Patent, Design and Trade Mark Cases*, 102 (4) (1985) 59, https://doi.org/10.1093/rpc/1985rpc59.

23 Section 32(1)(f), U.K. Patents Act, 1949.

24 *PozzoliSpA* v *BDMO SA*, [2007] EWCA Civ 588, [2007] F.S.R. 37, CA.

25 Section 3, U.K. Patents Act, 1977.

26 *Dyson Appliances Ltd.*v*Hoover Ltd.*, [2001] EWCA Civ 1440; [2002] R.P.C. 22

27 Manual of Patent Practice, Intellectual Property Office, Published on 19 February 2016, https://www.gov.uk/guidance/manual-of-patent-practice-mopp/Section-3-inventive-step.

28 This resulted in the amended Sections 22, 23 and 23A to 23G of the Indian Patents and Designs Act, 1911 (vide Act 32 of 1950).

29 *Benmax* v *Austin Motor Company, LD.*, [1955] A.C. 370, https://doi.org/10.1093/rpc/70.15.284 (8 February 2023).

30 *Bishwanath Prasad RadheyShyam* v*Hindustan Metal Industries*, AIR 1982 SC 1444.

31 *Avery Dennison Corporation* v*Controller of Patents and Designs*, 2022/DHC/004697.

32 Section 103 of the U.S. Patents Act, 1952 reads as under:
A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in Section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made."

33 Singh G P, *Principles of Statutory Interpretation* (LexisNexis), 2021.

34 *F. Hoffmann-La Roche Ltd and another* v*Cipla Ltd*., 2012:DHC:5542.

35 Order accessible on https://iprsearch.ipindia.gov.in/.

36 The Patent Rules, 2003 (incorporating all amendments till Patents (Amendment) Rules, 2021)).

37 IEEE 100, The Authoritative Dictionary of IEEE Standards Terms, Seventh Edition, 582,

38 Band J & Katoh M, *Interfaces on Trial Intellectual Property and Interoperability in Global Software Industry* (Westview Press), 1995.

39 There are several subject specific patenting guidelines prepared by the Office of the Controller General of Patents, Designs and Trademarks, India. For the purpose of this discussion, Revised Guidelines for Examination of Computer-related Inventions (CRIs), 2017 and Manual of Patent Office Practice and Procedure, 2019 are of relevance.

40 *Google LLC* v *Oracle America, Inc.*, 593 U.S. (2021).

41 Two patents were in issue in this case: US Patent US6061520 on Method and system for performing static initialization and US patent RE38104 on Method and apparatus for resolving data references in generated code. https://patentimages.storage.googleapis.com/65/0d/d9/daa6ee302cf064/US6061520.pdf, https://patentscope.wipo.int/search/en/detail.jsf?docId=US40130858&_cid=P10-LI2PB5-65149-1 (25 May 2023).

42 Guidelines for Examination of Computer-Related Inventions (CRIs), Office of the Controller General of Patents, Designs and Trade Marks, 2013.

43 Article 56, European Patent Convention, 2000.

44 Implementing Regulations to the Convention on the Grant of European Patents of 5 October 1973 as adopted by decision of the Administrative Council of the European Patent Organisation of 7 December 2006 and as last amended by decision of the Administrative Council of the European Patent Organisation of 13 October 2022, accessible on https://www.epo.org/en/legal/epc/2020/regulations.html.

45 Case T 0021/81 (Electromagnetically operated switch), ECLI:EP:BA:1982:T002181.19820910, accessible on https://www.epo.org/en/boards-of-appeal/decisions/t810021ep1.

46 *F. Hoffmann-La Roche Ltd* v *Cipla Ltd*., 2015:DHC:9674-DB.

47 Guidelines for Examination of Computer-Related Inventions (CRIs), Office of the Controller General of Patents, Designs and Trade Marks, 2016.

48 *Avery Dennison Corporation* v *Controller of Patents and Designs*, 2022/DHC/004697.

49 Guidelines for Examination of Computer-Related Inventions (CRIs), Office of the Controller General of Patents, Designs and Trade Marks, 2017.

50 Article 27, The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), Marrakesh Agreement, 1994.

51 Article 31 and 32 of the Vienna Convention on the Law of Treaties (VCLT) guides the interpretation of international agreements. Article 31 & 32 of the Convention reads as under:

"Article 31 General rule of interpretation

1. A treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose.

2. The context for the purpose of the interpretation of a treaty shall comprise, in addition to the text, including its preamble and annexes:

(a) any agreement relating to the treaty which was made between all the parties in connection with the conclusion of the treaty;

(b) any instrument which was made by one or more parties in connection with the conclusion of the treaty and accepted by the other parties as an instrument related to the treaty.

3. There shall be taken into account, together with the context:

(a) any subsequent agreement between the parties regarding the interpretation of the treaty or the application of its provisions;

(b) any subsequent practice in the application of the treaty which establishes the agreement of the parties regarding its interpretation;

(c) any relevant rules of international law applicable in the relations between the parties.

4. A special meaning shall be given to a term if it is established that the parties so intended."

"Article 32 Supplementary means of interpretation

Recourse may be had to supplementary means of interpretation, including the preparatory work of the treaty and the circumstances of its conclusion, in order to confirm the meaning resulting from the application of article 31, or to determine the meaning when the interpretation according to article 31:

(a) leaves the meaning ambiguous or obscure; or

(b) leads to a result which is manifestly absurd or unreasonable."