Patent Law for Engineers and Scientists
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Lecture – 11
Patentability of Inventions
Inventive Step

Now, we look at the second aspect or the second element of patentability that an invention should involve an inventive step. Inventive step has been defined in section 2 1 j a; the earlier definition was much simpler definition it just said inventive step means something that is not obvious to a person skilled in the art, but now the inventive step definition has been amended to include two other components.

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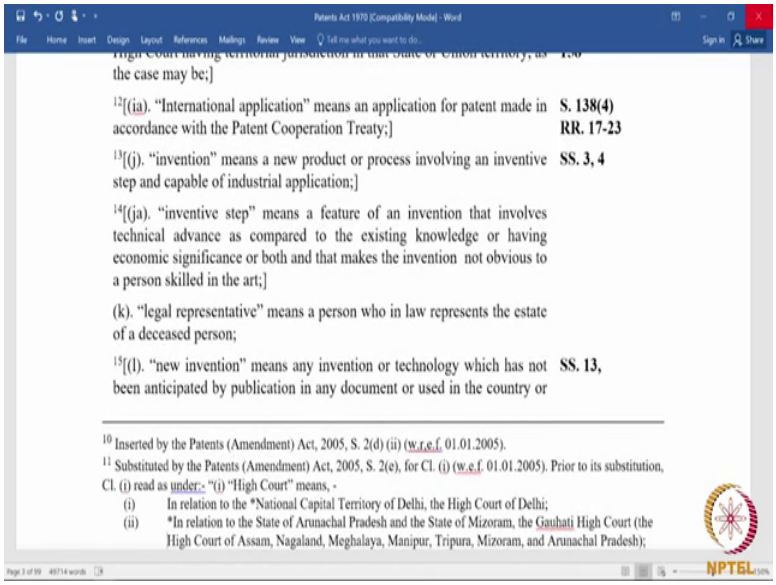

Inventive step means a feature of an invention that involves technical advance as compared to the existing knowledge or having economic significance or both. So, technical advance is a requirement. Now what is the technical advance that we are concerned about? The technical advance compared to existing knowledge. Now existing knowledge can be summarised as the state of the art of the prior art.

So, there has to be a technical advance when compared to the existing knowledge or

economic significance or both and that makes the invention not obvious to a person skilled in the art.

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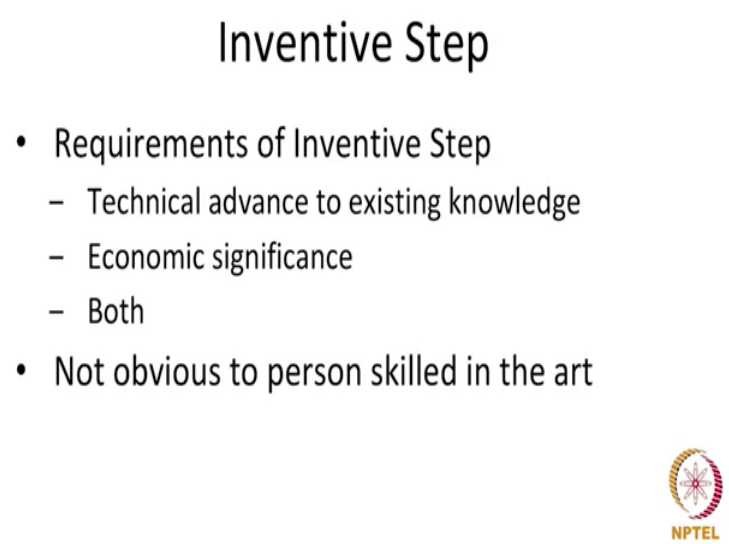

So, the requirements of inventive step would be two fold first the patent applicant will have to show that there is technical advance over existing knowledge or economic significance or both, so that is the first component you either demonstrate technical advancement over the prior art or you show economic significance either of things or you show both that is a first component and that makes the invention the feature in an invention that makes the invention not obvious to a person skilled in the art this was the earlier definition that the invention is not obvious to a person skilled in the art now.

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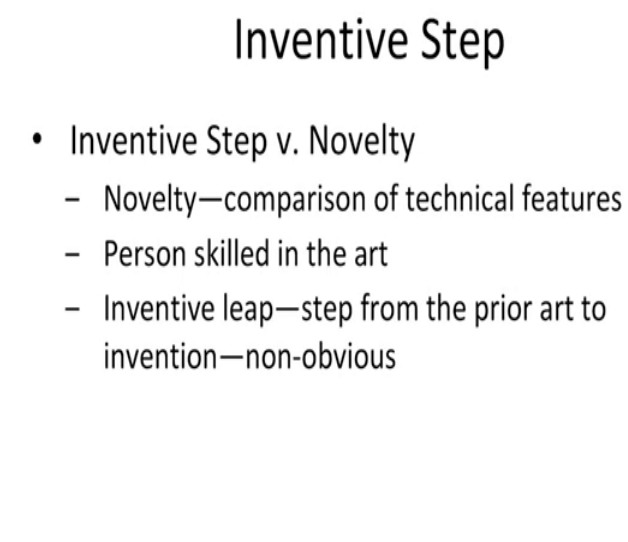

So, how different is the inventive step from the novelty requirement. Now novelty requirement we had seen involves a comparison of a document that has been published or a use with the claim of a patent application.

So, it is a comparison if the comparison matches in all the technical features, then the invention is said to have been anticipated provided there are no secrecy provisions and the prior art document predates the date of filing of an application with the complete specification we saw that in the definition. The definition of new invention did not mention anything about the person skilled in the art there was no person or the entity who would be instrumental in the analysis was not there. Whereas, the construction for a novelty analysis would be in from the perspective of a person skilled in the art, because all patterns are address to a person skilled in the art it is a hypothetical construct. But the person skilled in the art himself is not instrumental in determining novelty, because the definition of new inventions simply does not mention anything about the person skilled in the art, whereas in an inventive step analysis that key ingredient is to see whether the invention was not obvious to a person skilled in the art.

So, the person skilled in the art comes into the picture for an inventive step analysis and the person skilled in the art is attributed various treats. For instance, a person skilled in

the art is attributed to know every knowledge in that particular domain that has been published or that forms a part of the common general knowledge he is attributed to it, because he is in a hypothetical construct the person skilled in the art is attributed some cases have attributed a capacity of not getting bored which means if there are thousands of documents which form the knowledge of or the common general knowledge of a particular art. Then the person skilled in the art would be attributed knowledge of all those thousand documents meaning which it would be assumed that he has read all those document.

So, he has a capacity to understand things in the particular art and that capacity is almost infinite in the sense that he will not be expected to get bored in the process of understanding the scope of the prior art now what cuts the person skilled art and inventor who has come up with the patentable invention is that the person skilled in the art though he had the entire knowledge pertaining to the art he was not able to make that inventive leap or that inventive step. Now the inventive step there are various analysis which tells us what the inventive step is we just understand an inventive step as a step from the prior art to the invention which is a non-obvious step a person in the art would not; obviously, take that step it is non-obvious which means not every person in the art who has the knowledge of the art would take that particular step.

Now, there are prior are art sticks for determining what that step is one art stick which is now a part of the definition is technical advancement. So, the art advanced to a particular point and the entire art that is the field of technology was at a particular point of development the invention which claims to have any inventive step or which involves in inventive step made in advancement from that point what is contained the phrase technical advance as compared to the existing knowledge. So, there was a technical advancement and that was a substantial advancement not something which a person skilled in the art could have foreseen.

So, that was a substantial advancement and the substantial advancement is something which is not an obvious extension of what the work that is normally done or the courts are also use the word workshop improvement or workshop variation by workshop improvement or workshop variation we understand the various things a person skilled in

the art would do if he is encountered with a problem. So, there is a problem and to solve the problem, you can attribute the person skilled in the art in a particular field of technology to do various courses or take request to various steps. And all the steps if it results in something what could be claimed as an invention will still not amount to have satisfied the requirement of an inventive step, because those steps the person skilled in the art would have anyway taken if he was faced with a problem.

So, anything that would be done ordinarily by a person skilled in the art will not be regarded as constituting are contributing to the inventive step.

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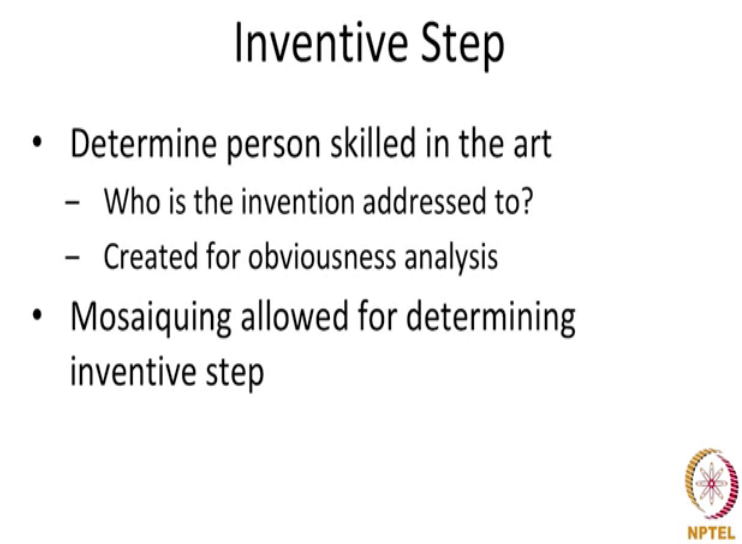

So the first step in understanding an inventive step is to determine the person skilled in the art who is the person skilled in the art to whom is the invention address to the person skilled in the art is actually. The addressee of an invention the invention is addressed to him though an invention can be read by anyone and understood by anyone the invention is phrased in a manner in which it can be understood by a person skill in the art.

So, the person skilled in the art is a hypothetical construct which is created for an obviousness analysis and the courts in many cases the first step the court will do is to identify the field of technology to which because in some inventions the inventive part or

the inventor step may come from different fields of technology. So, the court would identify the field of technology, and then identify who is the relevant person skilled in the art for the technology. And from that person once they identify that person it not be a person in the modern world it could be a team of people from the perspective of that person the court will now try to analyse whether the invention involved in inventive step.

Mosaiquing which we had said is not permissible for a novelty analysis is allowed in determining inventive step because the person skilled in the art is capable of reading multiple documents taking things from multiple documents putting them together and seeing whether particular problem can be solved. So, the approach of a person skilled in the art is when he is face to the problem when he is face to the technical problem he would normally do everything his peer would do if everything that his peer would do then that would not make the invention to have an inventive step, because the problem got solved by a person skilled in the art doing what anybody else would have done if faced with problem.

So, mosaiquing is allowed for determining an inventive step whereas, it is not allowed for determining a novelty step and for determining a novelty analysis for the ring simple reason novelty analysis have to be a perfect match of the disclosure in the complete specification. And in the prior art it has to be a perfect match it has to be complete that the match has to be complete all the technical features has to be disclosed in one document in one place. Whereas, because the inventive step involves the person skilled in the art the person skilled in the art will be attributed the skill of combining and reading together documents.

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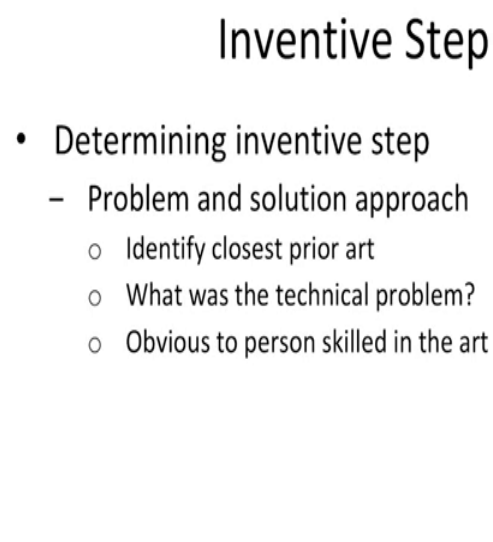

Now there are different approaches in determining step one is the problem and solution approach the problem and solution approach is to look at the invention as a solution to an existing problem there was an existing problem and that problem could not be solved by the person skilled in the art in that particular field and the problem existed either it existed for a long time or the fact that people were repeatedly trying to prove that problem and solve that problem and they were unsuccessful. The problem if it got addressed by an invention then we would say that the invention solved an existing problem. So, this is called a problem solution approach there is a problem that existed in the prior art and the documentation in the prior art shows that there is a problem and the invention actually solve that problem.

So, the problem solution approach is an important tool in pattern drafting because once you envisage the invention as a solution to a particular problem then it becomes easier to demonstrate inventive step, because the invention is now presented in the claims as a solution to an existing problem. Now there are three stages in the problem solution approach the first stage what are we doing in a problem solution approach in the problem solution approach we are trying to determine whether an invention involves in inventive step. So, there is an invention which is disclosed in a patent application which is filed along with a complete specification. So, we have a claim which discloses an invention

now we want to ascertain whether this claim stands clear of an inventive step analysis. So, one of the approach and this is predominantly followed by the European patent office is a problem solution approach.

And in the problem solution approach the first step would be to determine the closest prior art because as we mentioned if we understand the inventive step as a step taken from the prior art which a person skilled in the art could not take then it means the step was taken from the closest prior art. So, the closest prior art they could be multiple prior arts in a particular domain what was the prior art that was closest to this invention. So, the first step will be in determining the closest prior art. So, if there is a mistake or an error in identifying the closest prior art, then your problem solution approach for determining inventive step will be faulty because you did not identify the closest prior art.

So, the closest prior art will tell you whether the leap from the closest prior art or to use the steps from the closest prior art was something which was not obvious to a person skilled in the art. So, the first step in the problem solution approach is to determine the closest prior art. Second step is to establish the objective technical problem to be solved now we identify the closest prior art. And the second step is to establish the objective technical problem. Now these are phrases which has come from the European courts we may simply phrase it as what was the technical problem because the closest prior art would have enumerated the problem, but it would not have solved it.

So, first we identify the closest prior art then we establish the objective technical problem to be solved. So, we define the problem or we identify the problem to be solved and the third step is considering whether or not the claimed invention starting from the closest prior art and the objective technical problem would have been obvious to a skilled person that is a obviousness analysis. So, we start from the closest prior art and keep the technical problem in mind and see whether the invention would have been obvious to a person. So, it still and analysis of weather from the closest prior art keeping in mind the problem to be solved a person could have done this let us take the example of a paper clip.

The paper clip when it was first invented it did the job of holding papers together without damaging them let us assume that the prior art before the paper clip was a wire which has to be pierced through the document or it was some find some kind of a clip which had to bind the document which could damage the document. So, the paper clip solved the problem of holding papers together without damaging them. Now the paper clip is a quite a simple invention, because it is a steel wire which is bent appropriately in places to hold paper in between the wire. Now what would be the closest prior art for a paper clip the closest prior art could be a clip the closest prior art could be a steel wire it could be a thread i could be punching machine and which could punch holes on multiple document and tie it up it could be. So, of the list of prior arts that are there the first step will be to determine the closest prior art.

Let us assume it is a steel wire which can be pierced through the document and tie it together let us assume for the sake of understanding this better. Now once we identify a steel wire or a bit of a wire as prior art closest prior art and by this we understand that it is either disclosed it is manufactured or it is disclosed in some document. Now we understand what is the technical problem that had to be solved objective technical problem to be solved the objective technical problem to be solved is managing paper or grouping paper together without damaging them. So, to keeping holding paper together if you stick the paper together when you remove them apart it damages them if you stitch them together it damages them, if you put a hole and tie it up with a string or with a thread it again damages them.

So, if we understand the issue of the problem to be solved by the paper clip as holding paper together without damaging them then we will say that the technical problem or the objective technical problem to be solved is to manage papers together without managing them now we have the closest prior art which is a steel wire and we have the problem of managing paper together without damaging them.

Now with these two things will it be obvious to a person to come up with a paper clip. Now if the answer is yes it would be obvious then paper clip would not solve or would not involve an inventive step and it would not be granted a patent, but history tells us that pat there are multiple patents over paper clips over a period of time especially from the

US patent office and history also tells us that paper clip was a hugely successful product which had got which had multiple patents on over a over a long period of time. So, the problem the first paper clip solved was managing paper without damaging them if you look at the prior art which was just a steel wire it would have been difficult for a person at that point to envisage a steel wire in a such a way that it could be used to hold paper without damaging them. So, this was the problem that was solved by the paper clips.

So, the starting point of the closest prior art we will assume that that is a steel wire it is a plain steel wire and the objective technical problem which we will assume that managing paper holding paper together without damaging them in anyway. So, that you could remove the papers and use them as they were in it is original condition if a person who knew the closest prior art and the technical problem could have solved it prior art by coming up with a paper clip by bending a steel wire in particular places to hold the paper if the analysis would allow that to happen then we would we say that the invention would not involved in inventive step.

If on the other pa hand if it can be ascertain that it would not have been obvious to a person who had a steel wire and papers to manage and this problem of damaging paper then invention would be non-obvious or the invention would involve an inventive step now one of the things that affects an inventive step analysis is hindsight now hindsight is very can be demonstrate well in the case of a paper clip. Now if you reverse engineer a paper clip you get a steel wire, if you unbent it you get a steel wire. So, it could be possible for people to assume that in hindsight that this is obvious, because it was just a simple piece of wire that was bent in few places. So, one of the principle is that when assessing inventive step it is important to avoid viewing the solution with hindsight that is an ex post facto analysis you should not view the invention with hindsight because in hindsight it would appear that the invention was obvious.

So, the problem solution approach helps us to avoid hindsight and that is a great way in which patterns can be drafted because in drafting when you use the problem solution approach you are actually eliminating the possibility of hindsight creeping in avoiding hindsight means that obviousness should be analysed based on the prior art without any knowledge of the invention. So, when you look at the steel wire you have no knowledge

of the paper clip. So, that is the way in which you can eliminate hindsight and the problem solution approach because a problem solution approach involves looking at the problem to be solved it helps you to avoid the hindsight issue.

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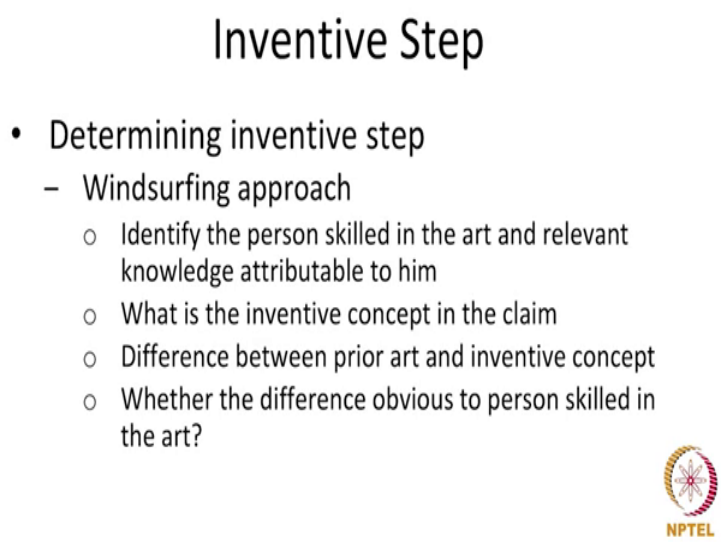

We just saw that one of the ways in which we can determine inventive step is by the problem and solution approach, there is another approach which is been recognised by the Indian courts this is called the windsurfing approach now this was developed in a case called windsurfing international versus tabor marine. Now in this approach there are four steps which kind of overlaps with what we had seen in the problem and solution approach the first thing would be to identify the person skilled in the art. The first step is to identify and the person skilled in the art is a notional person is not a real person first you identify the person skilled in the art and you identify the relevant common general knowledge of that person. The common general knowledge is a term that is used to describe the knowledge that is attributable to a person skilled in the art it need not be knowledge that is documented it can be knowledge which is known to that person or known to the people in that field.

So, the first step is to identify the person skilled in the art and to identify the relevant common general knowledge that is attributable to him to identify the inventive concept

of the claim in question what is the inventive concept in the claim the first step was to identify the person skilled in the art and the knowledge attributable to whom. Now you come to the patent application and look at the claim and try to understand; what is the inventive concept in the claim, what is it that the claim covers for which the protection is claimed the inventive concept.

The third step identify what differences exist between the matter cited as prior art or state of the art and the inventive concept now here comes in the early approach we saw that the closest prior art was identified then the problem was identified in this case, because the person skilled in the art is already identified and the knowledge is attributed to him we look at what forms the state of the art, because state of the art is determined through the person skilled in the art we look at what forms the state of the art or we identify the state of the art, and see the difference between the state of the art and the claimed invention for the inventive concept.

So, the third step will be now that the person skilled in the art is identified and the inventive concept has been construed or constructed we see the difference between these two things there is prior art and the inventive concept in the earlier analysis there was the closest prior art and the problem to be solved. And then you had the invention itself. So, once you do this that is a third step you will identify some difference between the prior art and the inventive concept there is some difference between these two things the fourth step.

And the last step will be viewed without any knowledge of the alleged invention as claimed which is removing hindsight do the difference constitutes steps that would be obvious to a person skilled in the art. Now this was the last step even in the problem and solution approach whether the step or the movement from the prior art to the invention would have been possible for a person skilled in the art it would have been possible for the person skilled in the art, and then we would say the invention is obvious. If it would not have been possible then we would say it involves an inventive step.

So, the last part of the analysis is the same to see whether from the prior art you could reach the invention the journey from the prior to the invention if the journey from the

prior to the invention is obvious then there is no inventive step. If that journey is not obvious a person skilled in the art would not do it then we will say that- that the invention involves an inventive step. So, the windsurfer test or the windsurfing test has four steps and it involves starting with identifying the person skilled in the art. And the knowledge attributable to him cuts to it involves constructing the claim identifying the inventive concept then identifying the difference between the prior art and inventive concept and seeing whether it would have been obvious to a person to make that journey to how to take that step.

So, in a sense any inventive step analysis would involve understanding the invention per se the inventive concept identifying the prior art that is the second step and seeing whether the movement or the journey from the prior art could have been done by a person and would it have been obvious to that person. So, we bring the obviousness element if it would have been obvious there is no inventive step if it has not been obvious then they would be inventive step.

The date of assessment of the inventive step is from the priority date. So, if an invention has a priority date the inventor step analysis is done from the priority date of the invention. So, all the documents that precede the priority date can be used for determining inventive step. So, we found that these two steps; these two approaches the problem and solution approach and the windsurfing approach tells us; what are the steps that could be considered in determining inventive step?

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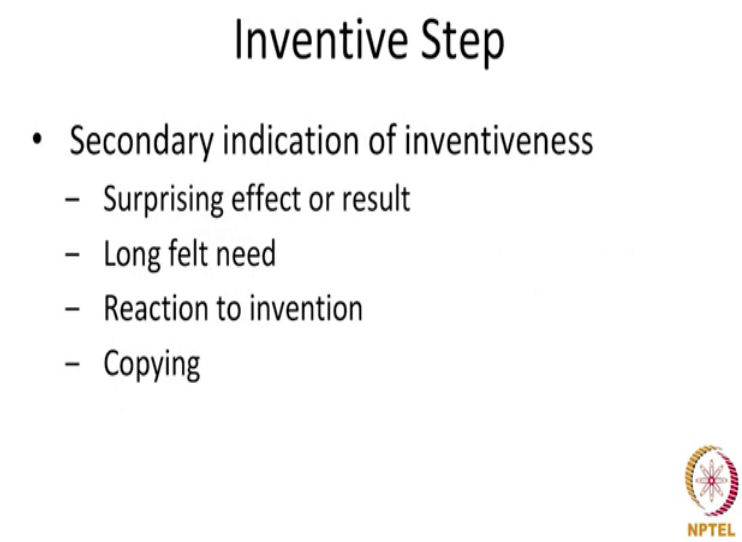

There are certain secondary indications of inventiveness now the secondary indications of inventiveness are secondary factors that may indicate that the invention is inventive now this is not to say that that the primary factors which the invention is not obvious to a person skill art should be brushed aside, but these secondary factors has been used by the courts of law in determining inventive step. So, some of the commonly applied secondary factors include a surprising effect or result now again this is something which you will find in pattern drafting and many patterns you will find that it was surprisingly found or there was a surprising result, and then they will mention how what was the surprising result or the effect.

Now, this is considered as a secondary factor in determining inventiveness because a surprising result could be something which does not happen in the normal course. So, something which happens out of the normal course could amount to a secondary factor in determining inventive step another factor another secondary factor is a long felt need the prior art had a long felt need there was a need to have a particular invention the prior art showed that there was a need, but the need was not addressed. So, the invention addresses that long felt need again that is a secondary consideration.

Overcoming the prejudices prior art of the prior art is yet another secondary factor the

prior art was prejudice in a particular way and the invention thought away from the prior art. In fact, it got over the prejudices of the prior art and came up with the invention. So, that is another secondary factor commercial success. The fact that the invention came out into the market and it was a commercial success could be another secondary factor or secondary indication of inventiveness reaction to the invention that how the invention was perceived could also be one of the secondary considerations.

Now reaction to the invention could include the competitor trying to licence the technology from an applicant now this is very similar to commercial success there is a clear demonstration that the technology is needed and is appreciated and so is copying when the market copies an invention that could also be regarded as a secondary factor for considering inventiveness.