



Summary Report

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Question Q217

The patentability criteria of inventive step / non-obviousness

I. Background

This question examines national and international legislation and judicial and administrative practice relating the issue of inventive step / non-obviousness. The study of this question follows the study of Q213, which examined the definition of the person of ordinary skill in the art and was considered at the 2010 Paris Congress. Q217 builds on the resolution reached in Q213 by examining the larger and more fundamental question of the criteria for inventive step / non-obviousness. Also related to this question is the resolution reached in Q209, "selection inventions the inventive step requirement, other patentability criteria and scope of protection" which was considered at the 2009 Buenos Aires meeting. However, Q209 limited the inquiry into inventive step/non-obviousness to the specific context of selection inventions, and thus like Q213 did not reach the broader question.

As highlighted by the working guidelines issued by the Reporter General, it is recognized that several different approaches to determining inventive step / non-obviousness are employed in various jurisdictions. For example, in the United Kingdom, inventive step is determined by application of the "*Windsurfing/Pozzoli*" test, which divides the inquiry into four steps:

- (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 be readily 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?

In the United States, before the 2007 U.S. Supreme Court in *KSR v. Teleflex*, the U.S. Court of Appeals for the Federal Circuit had developed an extensive body of case law applying the "teaching, suggestion, motivation" ("TSM") test to determine non-obviousness. The Supreme Court in *KSR* found the TSM test to be a useful inquiry but rejected it as overly rigid as the sole test for non-obviousness. Therefore, the United States no longer uniformly applies this

rigid analysis and instead looks to various issues including common sense, the degree of predictability of the results, and advantages obtained by the claimed combination.

The EPO and Germany employ the same definition of inventive step: "An invention shall be considered to involve an inventive step if, having regard to the state of the art, it is not obvious to a person skilled in the art." However, the approaches diverge from this point. Application of this standard in Germany does not follow a formalized approach. The EPO, however, follows a formalized problem-solution approach:

- (a) Identify the closest prior art;
- (b) Establish the "objective technical problem" to be solved;
- (c) Consider whether the invention, starting from the technical problem and the closest prior art, would have been obvious to the skilled person.

Yet another approach is seen in Japan, where inventive step is determined by reasoning whether a person skilled in the art would have been able to easily make the invention based on one or more cited inventions. No formalistic approach is employed.

Inventive step / non-obviousness was also one component of the draft Substantive Patent Law Treaty ("SPLT"). Article 18 of the draft SPLT provided two alternative definitions of inventive step:

Alternative A: "An invention shall be considered to involve an inventive step ("be non-obvious") if, having regard to the prior art, it would not have been obvious to a person skilled in the art at the filing date or, where priority is claimed, the priority date of the application claiming the invention."

Alternative B: "A claimed invention shall be considered to involve an inventive step ("be non-obvious") unless the differences between claimed invention and the prior art, at the filing date or, where priority is claimed, the priority date of the application which discloses the subject matter of the claim, are obvious to a person skilled in the art."

There are also many ancillary issues the approach to which varies among jurisdictions in a way that may affect the inventive step / non-obviousness determination. These include, for example, the manner of interpreting the claims and the prior art, the requirements for combining multiple prior art references, the role of the stated problem to be solved (if any) and the objective technical problem, the role of advantageous or technical effects, and the persuasive authority of secondary considerations.

Question Q217 examines application of these regimes in the various national and regional statutes and practices, with the goal of identifying areas of potential harmonization.

The Reporter General has received 39 Group reports from the following countries (in alphabetical order): Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, China, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Indonesia, Israel, Italy, Japan, Korea, Latvia, Mexico, Netherlands, New Zealand, Norway, Panama, Peru, Philippines, Poland, Portugal, Romania, Singapore, Spain, Sweden, Switzerland, Turkey, United Kingdom and United States.

The Group Reports provide a comprehensive review of judicial and administrative practice relating to inventive step/non-obviousness. This Summary Report cannot attempt to

reproduce the detailed rules explained by each Group. Thus, specific questions as to the exact rule or practice in a particular jurisdiction should be addressed by reference to the original Group Report.

II. Analysis of current law

a. Level of inventive step / non-obviousness

The Working Guidelines asked the Groups to state the standard for inventive step / non-obviousness in their jurisdiction. The majority of Groups replied with a defined standard. Naturally, most of the European Groups employ a definition identical or similar to EPC 56. Within other Groups, numerous variations were evident. For example, the Argentine Group noted that under their law, "there will be inventive step when the creative process or its results cannot be deduced from the state of the art in a way which is evident for a person normally skilled in the pertinent technical field." Similar variations are found in Brazil, Bulgaria, Chile, Turkey, and others. Israel defines inventive step as an advancement which would not have been obvious to one skilled in the art, on the basis of knowledge available to the public before the filing date.

In Australia, inventive step is defined in terms of what would have been obvious to a person skilled in the relevant art in light of the common general knowledge as it existed in Australia and its continental shelf, taken together with published documents or the doing of an act anywhere in the world." New Zealand employs different definitions for inventive step as between pre- and post-grant opposition proceedings. However, in either case, when assessing inventive step in New Zealand there is only a need for a "scintilla of invention."

In China, inventiveness means that, "as compared with the prior art, the invention has prominent substantive features and represents a notable progress." Korean law finds inventive step "if difficulty of a person skilled in the art to arrive at the invention from the prior arts at the time of filing is admitted, based on comparison with the prior arts searched from the field to which the invention pertains." Japan, on the other hand, looks to whether "a person ordinarily skilled in the art of the invention would have been able to easily make the invention based on an invention [in the prior art]." Indonesia finds that an invention is considered to involve an inventive step if the invention does not constitute something that is obvious to a person skilled in the art, taking into account the state of the art. In Singapore, the improvement must be non obvious to a person who is skilled in the art in that technological field of the invention.

In the United States, an invention is obvious "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." Canada looks to whether the subject matter would not have been obvious on the claim date to a person skilled in the art or science to which it pertains. The UK standard is "an invention shall be taken to involve an inventive step if it is not obvious to a person skilled in the art, having a regard to any matter which forms part of the state of the art...." Panama looks to whether an invention is not obvious or derived in any evident way off the state of the art, for a person well versed the corresponding technical matter.

In Finland and Norway, an invention must "differ essentially from the prior art" -- the essential difference being the requirement for inventive step. In Sweden, an invention must "differ significantly" from what was known before the application date.

The Italian Group notes that while the concept of inventive step is based on the concept of “non-evident from the prior art” for a person skilled in the art, there is no exact definition in place for this standard. Mexico, similarly, has no formal standard.

The Working Guidelines also asked to what extent these defined standards or their application had changed over the last 20 years. A number of Groups indicated that their substantive law had been amended during this period to codify law or practice relating to inventive step. Australia, China, Korea, and Japan noted changes have been made to increase the scope of prior art available for inventive step inquiries. The Danish Group noted that although in general inventive step has been aligned with the EPO since 1978, there has been a gradual move from the less formalistic German approach to the more formalistic problem/solution approach. Finland similarly noted a move toward the problem/solution approach. The Israeli Group mentioned a recent Supreme Court case defining invention step as requiring a “significant contribution to the relevant art” and possessing the “spark of invention.” The Swedish Group noted a trend toward finding knowledge of the skilled person into fields further away from the technical field of the claimed invention. In the United States, the KSR decision in 2007, while not changing the defined standard, significantly changed the analytical approach to a non-obviousness determination.

Twenty-six of the thirty-nine responding Groups reported the existence of examination guidelines either at the national or regional level. (Belgium, Bulgaria, Estonia, Greece, Indonesia, Italy, Latvia, Mexico, Netherlands, New Zealand, Panama, Peru, and Romania do not publish examination guidelines.) For those Groups that employ guidelines, the guidelines were generally found to be effective and useful for both examiners and applicants.

b. Construction of claims and interpretation of prior art

A strong majority of Groups indicated that claims are read as would be understood by a person skilled in the art. Exceptions were Bulgaria, Czech Republic, Estonia, Indonesia, Japan, Mexico (with some flexibility), Panama, and Poland. Of the Groups that consider the understanding of the skilled person, some Groups indicate that this construction is performed in light of the specification and drawings, where others indicate interpretation in light of the specification and drawings is performed only in the case of vague or omnibus claims. Israel and Singapore employ a “purposive” construction of the claims. The French Group noted that French jurisprudence does not recognize a separate step of claim construction, but that claims should be interpreted in a middle range between literal interpretation on one hand and limitation to description and drawings on the other.

The Working Guidelines asked the Groups to explain the extent to which specific embodiments in the disclosure might be “read into the claims” during claim construction. Unfortunately, the language of this question created confusion in many of the groups, and thus the answers to this inquiry are largely incomplete.

All but one Group indicated that, pursuant to rules or common practice, prior art would be interpreted as understood by a person skilled in the art. The Portuguese Group noted that during prosecution prior art is read literally, but a combination of prior art would be interpreted as the combination would be understood by a person skilled in the art. Also, in court cases the prior art is interpreted as would be understood by a person skilled in the art.

With regard to use of “inherent” teachings, *i.e.*, teachings that although not explicitly described in a prior art document would be readily understood by a skilled artisan as being

present, all Groups who answered this question indicated that it was or should be permitted. On this point, the U.S. Group noted that under U.S. law the question for inherency is whether an element not explicitly disclosed is necessarily present, and it is not relevant whether the skilled artisan would recognize the element to be there or not.

c. Combination or modification of prior art

The Working Guidelines asked the Groups to consider whether a single prior art reference, insufficient to defeat novelty, could nonetheless be used alone to show lack of inventive step or obviousness. In addition, the Groups were asked to consider what sort of evidence or argument would be required to supply the missing teachings. All of the Groups except Bulgaria and the Czech Republic responded in the affirmative to the first part of this question. The Bulgarian group noted that if a single reference is enough to challenge patentability, it would be found to lack novelty. The Czech Group indicated that lack of inventive step over a single prior art reference would not be permitted. Peru limited its answer to the case of selection inventions. With regard to the second part of the question, the majority of groups indicated that reference to the common general knowledge and/or expert testimony would be necessary. Germany, Hungary, Indonesia, Latvia, Mexico, Japan, China, the U.S., and the Netherlands indicated that argument alone might be sufficient, although reference to the common general knowledge would be appropriate. The U.S. Group noted various possible arguments: “demonstrating missing teaching was a predictable variation, showing that the missing teaching was a feature known to have been used to improve similar devices, or showing that there was a design need or a market pressure to solve a problem and the missing teaching was one of a finite number of identified, predictable solutions.” The Chilean Group noted that just giving arguments would not be enough; consideration of the common general knowledge and knowledge of a person skilled in the field would be required. The Philippine, Portuguese and Swiss Groups similarly indicated that argument alone would not be sufficient.

With regard to the requirements for combining two or more references or, perhaps more appropriately, the approach to determining the appropriateness of combining references, the responses differed substantially among the Groups. An explicit teaching or motivation is required in Argentina, Chile, and Singapore. The German Group indicated an explicit teaching or motivation is generally necessary. Other groups indicate that some motivation or incentive is necessary, but it need not be explicit (Brazil, China, Denmark, Estonia, Italy, Netherlands). Still other Groups indicate that teaching or motivation, whether explicit or implicit, is useful to support a combination of prior art, but is not required (Canada, Israel, Japan, Turkey, UK, and US). The remaining Groups, in general, indicated the propriety of the combination would depend simply on the knowledge of the person skilled in the art without regard to teaching or motivation.

The majority of the Groups indicated the closeness of the technical field was relevant to the combination of two or more prior art references. The Australian Group noted that the closeness of the technical field is not expressly relevant, but ordinarily the closer the technical field, the more likely a skilled person would be to combine the prior art. A similar view was expressed by the Greek and Romanian Groups. The Belgian and Brazilian Groups indicated there are no specific rules addressing this issue. In Chile, the documents should be within the same technical field. In China, the closest prior art is preferably from the same or a similar technical field; the other prior art references are not necessarily in the same or a similar field. Denmark indicated an approach similar to that of China, but noted the closeness of the technical field is less important than the problem the inventor was trying to solve. The Mexican Group likewise indicated that the closeness of the technical field is less important than the problem solved. The Estonian and German Groups noted that a skilled person may be expected to look

for suggestions in neighboring and general fields. The Turkish Group indicated that there are no well-defined standards on closeness of technical fields. In Panama, the technical field does not have relevance at all.

The Working Guidelines also asked, in the context of the question of relevance of technical field, if consideration is given to the problem the inventor of the claim in question was trying to solve. For example, in the United States, prior art is “analogous” if it is from the same field of endeavor, or if it is reasonably pertinent to the particular problem of the invention, regardless of the field of the inventor’s endeavor. The Spanish Group noted a similar concept in different words: the problem may drive a person skilled in the art to find its solution in another field. Most Groups indicated the problem would be relevant. The UK group indicated the problem the inventor was trying to solve may be relevant. In Finland, the problem the inventor was trying to solve is not primarily considered. Certain Groups indicated the problem is not relevant (Turkey, Panama).

With regard to a combination of more than two prior art references, the Chilean Group indicated that this would be prohibited (documents must be combined in pairs). The Danish and Estonian groups indicated that this is generally not allowed. All other Groups responded that this would be possible, although several noted that the more documents necessary to the combination, the more likely there would be inventive step.

d. Technical problem

Although there is some overlap with the preceding sub-question regarding the role of the problem the inventor was trying to solve in determining relevance of technical field, question 14 of the Working Guidelines seeks to examine directly the role of the technical problem in the obviousness / inventive step determination. There was a wide diversity of responses among the Groups with regard to this issue. For the Groups that use the problem-solution approach, the technical problem plays a central role (Argentina, Austria, Belgium, Chile, China, Denmark, Estonia, France, Greece, Netherlands, Norway, Peru, Poland, Portugal, Spain, Sweden, and Switzerland). Other Groups indicated that although the problem-solution approach is not used or not mandated, the technical problem with nonetheless be relevant to the inventive step analysis (UK, Turkey, Panama, New Zealand, Mexico, Latvia, Korea, Japan, Israel, Indonesia, Hungary, Germany, Finland, China, Canada, Bulgaria, Brazil, Australia). The Czech Group indicated that the technical problem is not relevant to determining inventive step, and the U.S. Group indicated the problem is relevant to identify prior art pertinent to the invention.

In the jurisdictions that consider technical problem, there is a division between those that consider the technical problem the inventor intended to solve (either expressly or inherently set forth in the specification) and those that consider of the “objective” technical problem as determined with respect to the closest prior art. The Canadian Group indicated the problem is considered in the context provided by the description. The European Groups, in general, examine the objective technical problem. The Swedish Group, for example, notes that there is no requirement that the problem be of a technical nature, but the objective problem is the cornerstone of the inventive step assessment. The China Group notes that the technical problem actually solved by the invention is a key factor to be considered in the evaluation of prominent substantive feature of the claimed invention.

The Groups were also asked to indicate if disclosure of the technical problem in the specification is required. 12 Groups responded in the affirmative. 10 Groups indicated there is no requirement for explicit disclosure of the technical problem, but it must be derivable from the

specification. 16 Groups indicated there is no such requirement. The French Group noted that this requirement may have a different standard at the OEB versus in the tribunals.

e. Advantageous effects

The Groups reported a wide diversity of approaches with regard to advantageous effects. In some Groups, identification of advantageous (or “technical”) effects is critical to showing inventive step or non-obviousness. In other Groups, such as jurisdictions where non-obvious alternatives that are different from but not necessarily superior to the prior art may be patentable, identification of advantageous effects is optional. Generally, the Groups report that if advantageous effects are to be used in inquiry, they must be either disclosed or implied by the specification as filed. However, the strong majority of Groups reported that it is possible to have later-submitted data considered by an examiner or by the court, provided that such data is used to prove effects that are disclosed or can be inferred from the originally filed application.

Hypothetical or “paper” examples are not prohibited in most jurisdictions, but generally are useful only to the extent that they are convincing and supportable if contested.

f. Teaching away

The Group reports reflect the full spectrum of possibilities with regard to use of the concept of “teaching away.” In Bulgaria, the Czech Republic, Estonia, Indonesia, and Panama, the concept of “teaching away” is not recognized at all. Other Groups indicate that teaching away is not formally recognized but may be an effective tool to use in argumentation. The Mexican Group indicated that teaching away is the best factor for showing inventive step / non-obviousness. The French Group noted a distinction in French law between a general technical prejudice and a specific teaching away in a particular document, and indicates the French law treats these differently. The Chinese group noted that technical prejudice is among the factors to be considered, but that this is not the same as “teaching away” in general. In Peru, Romania, Turkey, the U.S., and Poland, the teaching away must be explicit.

g. Secondary considerations

A majority of Groups indicated that secondary considerations are recognized, although a significant minority of Groups do not recognize secondary considerations at all (Bulgaria, Czech Republic, Latvia, Mexico, Sweden, and Turkey). For those that consider secondary considerations, there is a rough commonality among the types of secondary considerations that are accepted. Some groups exclude commercial success from consideration, and the Swiss Group notes that commercial success is considered only when it exists together with other factors. Most Groups indicate a requirement for a close connection between the technical features of claimed invention and the secondary considerations, particularly in the case of commercial success.

h. Divergence

The working guidelines asked the Groups various questions with regard to potential divergence in approach to inventive step / non-obviousness between examination and litigation procedures and between national and regional procedures where applicable. A wide variety of interesting comments were received on this point. First, for the jurisdictions that do not perform substantive examination of inventive step, there is no potential for divergence between

examination and litigation procedures. Many Groups indicated that examination and invalidity proceedings are both handled by their patent office, reducing chances of divergence between these procedures. However, in these jurisdictions, infringement actions are normally handled by general courts, particularly courts without technically trained judges and thus the possibility for divergence exists both in terms of the standards applied and the practical results. Further, most Groups noted that even where the standards for inventive step / non-obviousness are identical for examination and litigation procedures, the opportunity to adduce additional evidence and generally more rigorous procedures normally found in litigation may often result in divergent results even under the same standards. Finally, several of the European Groups noted a divergence in results of the inventive step / non-obviousness inquiry as between national offices and the EPO.

i. Proposals for harmonization

The working guidelines asked the Groups to indicate whether harmonization of inventive step / non-obviousness would be desirable and possible, and if so to provide a proposed definition and proposed approach to application of this definition. Of the Groups that responded to these questions, all but the Czech Group indicated the desirability of harmonization. The Indonesian Group indicated harmonization would be desirable but only to minimum basic standards. Most Groups, however, indicated that harmonization would be difficult given the variety of approaches taken in the various jurisdictions.

Of the Groups that submitted a proposed definition for harmonization, the most common suggestions were Article 56 of EPC and Alternative A of the SPLT. Proposals for the approach to application of this definition varied among the Groups. However, many Groups indicated a preference for the problem-solution approach.

III. Conclusions

Given the almost unanimous indication of the desirability of harmonization, reaching consensus on at least some areas addressed by the Working Guidelines appears possible and worthy of the best efforts of the Working Committee. For example, there is a reasonable degree of commonality among the Groups with respect to the definition of inventive step / non-obviousness. However, there is significant divergence among the groups in terms of how the definition is applied in practice, particularly between the Groups that apply the problem-solution approach and those that do not.

Among the other issues examined under the Working Guidelines, a reasonable degree of commonality is found on the issues of examination guidelines (found to be useful), interpretation of prior art and claims through the eyes of the skilled artisan, consideration of inherent teachings in the prior art, lack of limitation of the number of prior art references included in a combination (provided requirements are met), relevance of technical field and technical problem to the inventive step inquiry (to varying degrees), allowance of late submission of data supporting non-obviousness, and use of secondary considerations. However, there is significant divergence among the Groups on a number of issues, including the use and definition of the technical problem, the requirements for teaching or motivation to combine references, and disclosure of the technical problem in the specification. Hence, issues to be considered by the Working Committee might include:

- What would be a common definition of inventive step / non-obviousness?
 - Is it possible to reach a consensus near SPLT A, similar to the EPO definition?
- Is a common standard or recommendation possible for examination guidelines?
 - Given that the jurisdictions that have guidelines find them generally useful for both examiners and applicants, can a consensus be reached on the desirability and utility of guidelines? Can the consensus include guidance for national offices as to what should be included in the guidelines?
- With regard to technical problem and advantageous results or technical effects, should there be specific and harmonized guidance as to when and to what extent these must be included in the application as filed?
 - This seems to be an important area for potential harmonization because divergence on this issue may lead to a specification that is sufficient to support inventive step in one jurisdiction but insufficient in another.
- Should there be clear guidance as to, for those jurisdictions that choose to apply the problem/solution approach, whether the stated problem or the objective problem should be considered?
 - Even if a consensus cannot be reached concerning use of the problem-solution approach versus a more general approach, would it be worthwhile to provide guidance on application of the problem-solution approach for those jurisdictions that choose to apply it? Similarly, would it be worthwhile to provide guidance on a more general approach for jurisdictions that do not employ the problem-solution approach?
- Should there be special or harmonized guidance as to what is required to be shown in order to combine multiple prior art references?
 - Although there are significant differences in approaches indicated by the Group Reports, might it be possible and useful to reach a consensus as to how a person skilled in the art must view a combination of prior art in order to support a finding of lack of inventive step / obviousness?
- Should there be specific or harmonized guidance as to the importance of technical field to the inventive step / non-obviousness inquiry?
 - Is it possible and useful to reach a consensus as to general parameters indicating when prior art from fields outside the inventor's field of endeavor might be used to defeat inventive step / non-obviousness?
- Should there be recommendations as to types of secondary considerations that should be considered, and in what situations these considerations come into play?
 - Might it be possible and useful to provide a listing of exemplary secondary considerations that could be considered in cases where the outcome of the standard inventive step / non-obviousness inquiry is non-determinative?
- Should guidance be indicated regarding uniformity of application of definition and procedure relating to inventive step / non-obviousness across various administrative and judicial bodies within a given jurisdiction?

- Might it be useful to confirm the importance of uniform application of standards across the various national and regional offices, courts, and tribunals?