

APPLICATION OF THE INVENTIVE STEP TEST IN DIFFERENT TECHNOLOGICAL AREAS

Issue

1. Following a review of inventive step in 2006 concerns were raised regarding the consistency of application of the inventive step test in high technology areas.
2. This report relates to an assessment of the application of the inventive step test in nine different areas of technology, including a mix of established technologies and fast-moving high technology areas, to establish whether the test is applied consistently across different technologies.

Summary

3. No differences emerged between established and fast-moving technology groups when considering: the balance between objections based on common general knowledge (“CGK”) and those based upon the combination of specific documents (“mosaic objections”); practice in making mosaic objections; practice in the use of the Windsurfing/Pozzoli steps. No unexplainable differences were apparent in use of the benefit of the doubt, nor in the attribution of CGK to the skilled worker, nor in the approach to construing the claims, nor in practice in making CGK objections.
4. Whilst there does not appear to be a problem with the application of the inventive step test over different technology areas, a number of recommendations are nevertheless made in respect of good practice.

Recommendations

5. Examiners should be encouraged to maintain a clear distinction between objections based upon CGK and mosaic objections. This is particularly important when using documents as examples of CGK. Care should also be used when describing a particular feature as ‘known’, so that it is clear whether this feature is simply contained in the art or represents CGK.
6. Examiners should also be encouraged to word their objections to more clearly reflect that the Windsurfing/Pozzoli approach has been used in assessing inventiveness.
7. Staff guidance on making mosaic objections, such as information in the Manual of Patent Practice, should be assessed and use of a PDN considered in order to make examiners aware of any resulting changes.

Background

8. A review of the Inventive Step Requirement in United Kingdom Patent Law and Practice was conducted in 2006 to assess whether the level for inventive step in the UK is set at an appropriate point^{1, 2}.
9. While the review concluded that the Office applies the inventive step test at the right level some concerns were raised regarding the consistency of application of the test across different technological areas, particularly in fast developing high technology areas. One of the recommendations of the review was that this point should be investigated further.
10. A team of legal advisers and senior patent examiners was formed to consider this potential problem. The consultation concluded that the inventive step was applied at the correct level and the follow up project was conducted with the aim of reviewing fast moving technologies in comparison with more established technologies to look for any inconsistencies between the different technological areas.

Methodology

11. The following UK classification key headings were chosen for analysis based upon the need to compare high technology areas against steady technologies and the technical knowledge of the examiners involved:

Biotechnology and Pharmaceutical inventions

<u>UK classif</u>	<u>IPC classif</u>	<u>Subject matter</u>
C3H	C07K; C12N 9/ - 15/	proteins, enzymes and nucleic acids (biotechnology)
C3H	C07K; C12N 9/ - 15/	proteins, enzymes and nucleic acids (pharmaceutical)
A5B	A61K	pharmaceutical preparations, etc
C6F	C12N 1/ - 7/	microbiology, etc (stem cell inventions)

¹ Consultation document available at: <http://www.ipo.gov.uk/consult-inventive.pdf>

² Response document available at: <http://www.ipo.gov.uk/response-inventive.pdf>

Computer implemented and telecommunications inventions

<u>UK classif</u>	<u>IPC classif</u>	<u>Subject matter</u>
G4A(A)	G06F 9/	electric digital data processing (programming and calculation arrangements)
G4A(U)	G06F 17/60; G06Q	electric digital data processing (certain applications of digital data processing systems)
H4L	H04B 7/; H04Q 7/	electromagnetic and inductive field communication
H4P	H03M 7/, 13/; H04B1/69; H04L	electric digital data transfer; telegraphy

Steady technology

<u>UK classif</u>	<u>IPC classif</u>	<u>Subject matter</u>
A5R	A61F, A61H, A61M	medical, veterinary and dental equipment
B8H	B65D, B66F	load shifting apparatus

12. Cases where inventive step objections have been raised over the two year period from 1 November 2005 to 31 October 2007 were identified as potential cases for consideration. This included first examination objections as well as subsequent objections in follow up examination reports at amendment stages. All inventive step objections on cases selected for analysis were considered even if they fell outside the two year period (the majority of objections assessed falling within the requisite period).
13. Where available, five patent applications per heading were selected for analysis. However, this was not always possible due to the small numbers of potential cases identified. The cases selected for analysis break down in the following manner:

<u>Heading</u>	<u>Number of cases analysed</u>	
C3H	10	(biotech and pharmaceutical)
A5B	2	
C6F	4	
G4A(A)	5	
G4A(U)	5	
H4L	5	
H4P	5	
A5R	6	
B8H	4	
Total	46	

14. The aim of the project was to consider how the inventive step test has been applied rather than the presentation of the objection. Therefore we attempted to assess the examiner's thinking on the following points:

Who is the skilled worker?

What could we perceive was the examiner's assessment of the skilled worker?

What common general knowledge has been imputed to him?

Had the skilled worker been imputed common general knowledge in a broad area or had his field of knowledge been more narrowly assessed by the examiner?

How has the inventive concept been assessed?

Was it self evident or had it been construed? If it had been construed, on what basis had this been done?

What was the basis for the objection?

Had the objection been made on the basis of common general knowledge and prior art or by mosaicing of documents?

Mosaicing

Were the documents from the same or similar field of technology or different ones?

What degree of selection was required to isolate the separate disclosures from the surrounding material?

Had other approaches been used?

Had objections such as 'obvious to try', 'overcoming a technical prejudice', 'overcoming a long felt want', 'lying in the road' been used?

Benefit of doubt

Had the examiner given the benefit of doubt to the applicant?
- on the basis of the balance of probability
- or more generously?

15. The assessment of these questions was recorded on the proforma attached as Annex A and these proformas were subsequently analysed to look for trends.

Results and Analysis

The skilled worker

16. The skilled worker was not usually defined in inventive step objections either in high technology fields or steady technologies. This was not a surprising result as we did not expect the skilled worker to be explicitly defined within early objections in the same way that they would be in pre-hearing reports or in decisions, for example. Furthermore, the assessment of the skilled worker may evolve through exchanges between the examiner and the applicant leading to a clearer picture of the skilled worker in subsequent examination reports than in first examination reports. For the purposes of case analysis we assessed who the examiner appeared to have taken the skilled worker to represent. In most cases this was self evident but it was not always easy to assess, particularly in the more complex biotechnology and pharmaceutical cases. This occasionally led to a difficulty in assessing what common general knowledge had been attributed.

Common general knowledge (“CGK”)

17. Although objections sometimes referred to CGK, it was rarely explicitly defined nor was it explained how or why the skilled worker could be considered to have that CGK. However, we did not expect early objections to set this out in the detailed way that it would be done at a hearing stage or post grant, for example, as it may not be necessary to provide detailed explanation at this stage. Further exchanges between the examiner and the applicant may give rise to a better picture of the skilled worker’s CGK, particularly in the high technology fields leading to more explanation in later examination reports. Several objections were made which referred to features that are ‘known’ where it was not clear whether the objection was based upon closest prior art and CGK or upon mosaicing of documents. This generally led to agents arguing against a mosaic objection in their response as this appeared to put the applicant in a stronger position.
18. The CGK tended to be broadly attributed in steady technologies (90% of cases considered) compared with high technology areas (50% of cases considered). This appears to be attributable to the complex subject matter in high technology areas meaning that the skilled worker will be expert in a smaller more specialized field with technology from a different field being less likely to be relevant (although broader CGK of common techniques is attributable). We were therefore content that the inventive step methodology was being applied correctly, rather than a different application of the inventive step test being used erroneously in some fields of technology as compared to others.
19. It was noted that if the first step of assessing the skilled worker is not clearly performed it may be difficult to assess what common knowledge should be attributed. This is generally more of an issue in high

technology areas although in cases where the examiner is aware of CGK in a particular area it is fair to attribute such CGK to a more specialist skilled worker without detailed explanation. This difficulty can be considered to be a feature of the fast moving nature of high technology subject matter rather than any error in application of the test.

Inventive concept

20. The inventive concept was slightly more likely to be construed in high technology areas (20% of cases considered) than in steady technologies (10% of cases considered), but clearly in the majority of cases in both areas the inventive concept was taken by the examiner to be self-evident. The slightly higher levels of construction in high technology areas appear to be attributable to the complexity of subject matter and/or difficulties experienced by the examiner putting himself in the shoes of the skilled worker rather than differences in application of the test between different technologies.
21. Generally the inventive concept was construed in light of the description although in one case in each technology group comments made in an agent's letter appeared to form the basis for a construed inventive concept.

Common general knowledge vs mosaic objections

22. Both groups of technology showed an approximate 70/30 split between CGK/mosaic objections. However, in several cases, what initially appeared to represent a mosaic objection was actually a CGK objection. In cases where documents were cited as examples showing a feature to be CGK the presentation was such that two documents were cited in combination, the objection therefore appearing to be a mosaic one. However, if a document is an example demonstrating CGK this is not a true mosaic objection. This occurred across a range of the high technology headings but did not arise in the steady technology headings. This may be attributable to difficulties in assessing the CGK of the skilled worker in complex technologies. This may lead the examiner to feel the need to use example documents to demonstrate CGK. Examiners should be encouraged to maintain a distinction between the two types of objections to ensure that the objection is presented properly.

Mosaicing

23. Where mosaic objections were made, 70% of the high technology cases combined documents from the same field whereas 80% of low technology cases used documents from the same field.
24. The degree of selection required to isolate disclosures from surrounding material was observed to be similar for high technology

areas (50% requiring some selection) and steady technology areas (60% requiring some selection). A large degree of selection was required in only one high technology case and one steady technology case.

25. When mosaicing documents to make an inventive step objection the objections did not always set out the starting point for the objection and why the skilled worker would consider combining the two documents. This occurred across all the technologies considered and leads to the recommendation that guidance on making mosaic objections should be reviewed to encourage best practice.
26. In summary, there appeared to be no significant difference between high technology areas and steady technology areas when making mosaic objections.

Other approaches

27. Other approaches were used in about 23% of cases in total. These approaches tended to be used more often in high technology areas (28% of high technology cases compared with 10% of steady technology cases) but this is probably to be expected as some of these other approaches are more specific to this sort of technology. A range of other approaches were utilized in the high technology cases analysed. Objections based upon selection, reasonable expectation of success and laborious effort, for example, tend to occur more often in chemical and biotechnology areas, possibly accounting for the higher figures in the high technology group. (See the Examination Guidelines relating to Medical Inventions³ and Biotechnological Inventions⁴ for more information on different approaches).

Benefit of doubt

28. The cases analysed showed no evidence that the benefit of the doubt was inappropriately given to the applicant. Both the high technology and the low technology groups showed about an overall 20% rate of dropping the inventive step objection after arguments were made by the applicant. It was difficult to assess whether this was an allowance of the benefit of the doubt or dropping the objection in the face of a very convincing argument. In the biotechnology and pharmaceutical cases alone objections were dropped in 40% of cases. Given the detailed knowledge required by the skilled worker and the fast moving nature of these technologies it is inevitable that there will be detailed exchanges between the examiner and the applicant regarding what the skilled worker would know. It is reasonable that this would lead to the benefit of any doubt being given once the CGK has been thus established

³ <http://www.ipo.gov.uk/medicalguidelines.pdf>

⁴ <http://www.ipo.gov.uk/biotech.pdf>

thereby explaining the higher instance of allowance of the benefit of the doubt in these technologies.

Windsurfing/Pozzoli steps

29. The cases analysed rarely used a detailed working through of the Windsurfing/Pozzoli steps in the wording of the objection. Some cases clearly identified the differences between the closest prior art and the invention indicating that the steps had been followed. In total 13% of cases made it clear that the Windsurfing/Pozzoli approach had been used with no difference emerging between the high and steady technology areas. But in the remaining cases, we found no evidence of a general failure, in either high or low technology areas, to follow the Windsurfing/Pozzoli approach implicitly, when reaching conclusions on inventive step. Use of a more specific reference to the Windsurfing or Pozzoli approach may help reassure readers that these approaches have been used. This point should be taken forward in guidance and internal review procedures for examination.

Conclusions

30. The analysis showed no unexplainable differences between high technology areas and steady technology areas. While there was more of a tendency to attribute a narrow CGK and to construe the inventive concept in high technology areas this appears to be attributable to the complex nature of the technology rather than any error in assessment. No differences emerged between the two groups in the balance between CGK and mosaic objections or practice in making mosaic objections. Although biotechnology and pharmaceutical areas showed a higher rate of dropping the objection after arguments were filed this appears to be attributable to the complex and fast moving nature of the technology. In high technology areas CGK objections were occasionally presented as mosaic objections; this is thought to be a consequence of the difficulty in assessing the CGK in such technology areas. No differences were apparent in the explicit use of the Windsurfing/Pozzoli steps.
31. Therefore, the analysis shows that, despite the perceptions commented upon in the inventive step review, there does not appear to be a problem of inconsistency in the application of the inventive step test over different technology areas.

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August 2008

Annex A

Application number	GB			Comment
Stage of examination process				
Assessment of the skilled worker				
Common general knowledge	Broad			
	Narrow			
Assessment of Inventive concept	Self evident			On what basis?
	Construed			
Objection based on	Common knowledge			
	Mosaicing			
Mosaicing	Docs from same field			Degree of selection required?
	or different fields			
Any other approaches				
Benefit of doubt given	On balance of probabilities			
	More generous			