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Inventive step

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PREFACE

I would like to take this opportunity to thank Anne Barron at the London School of Economics and Political Science, who encouraged me to write about a subject, which most people would be happy to disregard because of its complex nature. I would further like to thank Maria Welandson for spending endless hours discussing the subject with me.

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TABLE OF ABBREVIATIONS

Literature

C.I.P.A	Journal of the Chartered Institute of Patent Agents
E.I.P.R	European Intellectual Property Review
E.P.O.R	European Patent Office Reports
F.S.R	Fleet Street Reports
I.I.C	International Review of Industrial Property and Copyright Law
R.P.C	Reports of Patent Cases
L.Q.R	Law Quartely Review
S.R.I.S	Science Reference and Information Service

Other

EPC	European Patent Convention
EPO	European Patent Office

TABLES OF CASES

Table 1: Cases from the United Kingdom- Alphabetical Order

A

ABT Hardware's Application S.R.I.S O/36/87, noted IPD 10040
 Allmänna Elektriska v. Burntisland Shipbuilding [1952] 69 R.P.C 63
 American Cyanamid v. Ethican [1979] R.P.C 215
 Andrew Master Hones v. Cruikshank & Fairweather [1981] R.P.C 389

B

Beecham's (Amoxycillin) Application [1980] R.P.C 261
 Beloit Technologies Inc v. Valmet Paper Machinery Inc [1995] R.P.C 705
 Beloit Technologies Inc v. Valmet Paper Machinery Inc [1997] R.P.C 489
 Benmax v. Austin Motor Company [1955] 72 R.P.C 39
 Biogen Inc v. Medeva plc [1997] R.P.C 1
 Boehringer Mannheim v. Genzyme [1993] F.S.R 716
 British Celanese v. Courtaulds [1935] 52 R.P.C 171
 Brugger v. Medic-Aid Ltd [1996] R.P.C 635

F

Fichera v. Flogates [1983] F.S.R 198 and [1984] R.P.C 323
 Fichera v. Flogates [1984] R.P.C 257

G

Gadd and Mason v. Mayor of Manchester [1892] 9 R.P.C 516
 Genentech's Inc Patent [1989] R.P.C 147
 General Tire & Rubber Company v. The Firestone Tyre and Rubber Company Ltd [1972] R.P.C 457
 Gillette Safety Razor Co v. Anglo-American Trading Co [1913] 30 R.P.C 465

H

Haberman v. Jackel International Ltd [1999] F.S.R 683
 Hallen Company v. Brabantia (UK) [1991] R.P.C 195
 Harwood v. Great Northern Ry [1864] 11 H.L.C 654
 Hickman v. Andrew and others [1983] R.P.C 147
 Hickton's Patent Syndicate v. Patents and Machine [1909] 26 R.P.C 339

I

ICI (Pointer's) Application [1977] F.S.R 434
 Illinois Tool v. Autobars [1974] R.P.C 337

J

Johns Manville's Patent [1967] R.P.C 479

K

Killick v. Pye [1968] R.P.C 366

L

Lister's patent [1966] R.P.C 30

Longbottom v. Shaw [1891] 8 R.P.C 333

Lucas v. Gaedor [1978] R.P.C 297

Lux Traffic v. Pike [1993] R.P.C 107

M

Martin v. Millwood [1956] R.P.C 125

Minnesota mining v. Rennicks [1992] R.P.C 331

Mutoh Industry Ltd's Application [1984] R.P.C 35

Mölnlycke AB v. Proctor and Gamble Ltd (No 3) [1990] R.P.C 498

Mölnlycke AB v. Proctor and Gamble Ltd (No 5) [1994] R.P.C 49

N

Non-drip v. Strangers [1943] 60 R.P.C 135

O

Olin Mathieson Chemical Corporation v. Biorex Laboratories Ltd [1970] R.P.C 157

P

Parker-Cramer Company v. G.W Thornton & Sons Ltd [1966] R.P.C 407

PLG Research Ltd v. Ardon International Ltd [1995] F.S.R 117 and [1995] R.P.C 287

R

Raychem Corporation's Patent [1998] R.P.C 31

Rickman v. Thierny [1897] 14 R.P.C 105 HL

S

Samuel Parkes v. Cocker Brothers [1929] 46 R.P.C 241

Sonotone Corporation v. Multitone Electric Coy. Ltd [1985] 72 R.P.C 131

T

Technograph Printed Circuits Ltd v. Mills and Rockley Ltd [1969] R.P.C 395

Technograph Printed Circuits Ltd v. Mills and Rockley Ltd [1972] R.P.C 346

Teste v. Combe [1923] 41 R.P.C 88
 The Procter & Gamble Co v. Peudouce (UK) Ltd [1989] F.S.R 180
 Thermos v. Isola [1910] R.P.C 388

U

Unilever v. Chefaro [1994] R.P.C 567

V

Vax v. Hoover [1991] F.S.R 307
 Vickers Sons & Co.Ltd v. Siddell [1890] 7 R.P.C 292

W

Williams v. Nye [1890] 7 R.P.C 62
 Windsurfing International Ltd v. Tabur Marine Ltd [1985] R.P.C 59
 Woven Plastic Products Ltd v. British Ropes Ltd [1970] F.S.R 47

Table 2: Cases from the Board of Appeal (EPO)- Chronological and Numerical Order

1980

T 1/80 (BAYER/ Carbonless copying paper) [1982] R.P.C 321

1981

T 2/81 (MOBAY/Methylenebis (phenyl isolyanate)) [1979-85] E.P.O.R:B:280
 T 5/81(SOLVAY/Production of hollow thermplastic objects) [1979-85] E.P.O.R:
 B:287
 T 18/81 (SOLVAY/Olefin polymers) [1979-85] E.P.O.R:B:325
 T 19/81 (ROEHM/Film coating) [1979-85] E.P.O.R:B:330
 T 21/81 (ALLEN-BRADLEY/Electo-magnetically operated switch) [1979-85]
 E.P.O.R:B:342
 T 22/81 (LUCAS/Ignition system) [1979-85] E.P.O.R:B:348
 T 24/81 (BASF/Metal refining) [1979-85] E.P.O.R:B:354
 T 26/81 (ICI/ Containers) [1979-85] E.P.O.R:B:362
 T 29/81 (SHELL/ Aryloxybenzaldehydes) [1979-85] E.P.O.R:B:335
 T 32/81 (GIVES-CAIL BABCOCK/ Cleaning apparatus for conveyor belt) [1979-85]
 E.P.O.R:B:377

1982

T 22/82 (BASF/Bis-epoxy ethers) [1979-85] E.P.O.R:B:414
 T 37/82 (SIEMENS/Low tension switch) [1979-85] E.P.O.R:B:437
 T 109/82 (BOSCH/Hearing aid) [1979-85] E.P.O.R:B:539
 T 113/82 (IBM/ Recording apparatus)[1979-85] E.P.O.R:B:553
 T 119/82 (EXXON/Gelation) [1979-85] E.P.O.R:B:566

T 181/82 (CIBA-GEIGY/Spiro compounds) [1979-85] E.P.O.R:C:672
T 184/82(MOBIL/Poly (p-methylstyrene) articles) [1979-85] E.P.O.R:C:690
T 192/82 (BAYER/Moulding compositions) [1979-85] E.P.O.R:C:705

1983

T 2/83 (RIDER/Simethicone tablet) [1979-85] E.P.O.R:C:715
T 4/83 (EXXON/Purification of sulphonic acids) [1979-85] E.P.O.R:C:721
T 8/83 (BASF/Paper dyeing) [1986] E.P.O.R 186
T 20/83 (CIBA-GEIGY/Benzothiopyran derivatives) [1979-85] E.P.O.R:C:746
T 164/83 (EISAI/Anthistamines) [1987] E.P.O.R 205

1984

T 13/84(SPERRY/Reformulation of the problem) [1986] E.P.O.R 289
T 57/84 (BAYER/Tolylfluanid) [1987] E.P.O.R 131
T 106/84 (MICHAELSEN/Packing machine) [1979-85] E.P.O.R:C:959
T 132/84 (HUELS/Tetramethylpiperidone) [1986] E.P.O.R 303
T 169/84 (MITSUBISHI/Endless power transmission belt) [1987] E.P.O.R 120
T 175/84 (KABELMETAL/Combination claim) [1989] E.P.O.R 181
T 176/84 (MOEBIUS/Pencil sharpener) [1986] E.P.O.R 117
T 183/84 (BAYER/Titanyl sulphate) [1986] E.P.O.R 174
T 198/84 (HOECHST/Thiochloroformates) [1979-85] E.P.O.R:C:987
T 223/84(ALBRIGHT & WILSON/Extraction of uranium) [1986] E.P.O.R 66
T 265/84 (ALLIED/Cobalt foils) [1987] E.P.O.R 193
T 270/84 (ICI/Fusecord) [1987] E.P.O.R 357
T 271/84 (AIR PRODUCTS/ Removal of hydrogensulphide and carbonyl sulphide) [1987] E.P.O.R 23

1985

T 48/85 (NRDC/Eimeria recatrix) [1987] E.P.O.R 138
T 155/85 (PHILLIPS PETROLEUM/Passivation of catalyst) [1988] E.P.O.R 164
T 229/85(SCHMID/Etching process) [1987] E.P.O.R 279
T 253/85 (AKZO/Dry jet-wet spinning) [1987] E.P.O.R 198
T 255/85(BEECHAM/Antacid compositions) [1987] E.P.O.R 351
T 292/85(GENENTECH I/Polypeptide expression) [1989] E.P.O.R 1

1986

T 162/86 (HOECHST/Plasmid pSG2) [1989] E.P.O.R 107
T 254/86 (SUMITOMO/Yellow dyes) [1989] E.P.O.R 257
T 321/86 (PHILLIPS/Display tube) [1989] E.P.O.R 199
T 392/86(MOBIL/Catalyst) [1988] E.P.O.R 178

1987

T 95/87 (DYSON REFRACTORIES/Catalyst production [1988] E.P.O.R 171
T 141/87 (BOSCH), September 29, 1998
T 274/87 (PHILLIPS/Cracking catalyst) [1989] E.P.O.R 207

1988

T 426/88 (LUCAS INDUSTRIES/Combustion engine), November 9, 1990

T 426/88 (LUCAS/Combustion Engine)[1992] E.P.O.R 458

1989

T 69/89 (SURGICOS/disinfection) [1990] E.P.O.R 632

T 344/89 (GTE/Siliconnitride cutting tools) [1993] E.P.O.R 209

T 560/89 (N.I.INDUSTRIES/Filler mass) [1994] E.P.O.R 120

1992

T 465/92 (ALCAN/Alluminium alloys) [1995] E.P.O.R 501

T 939/92 (AGREVO/Triazoles) [1996] E.P.O.R 171

SUMMARY

An invention for which a United Kingdom patent or a European patent is sought, is patentable if in addition to being novel it involves an inventive step. The definition to the concept of “inventive step” can be found in s 3 of the Patents Act 1977 and EPC A 56, both of which contain identical terms. According to these provisions an invention involves an inventive step if, having regard to the state of the art, it is not obvious to a person skilled in the art. Both provisions have been formulated in general terms and therefore provide limited help in the evaluation of inventiveness. The British courts and the EPO have had the difficult task of developing and interpreting the provisions and have thus successively introduced certain criteria to be used.

In the United Kingdom the courts have consistently used the so-called Windsurfer test. This test does however not give any valuable guidance as to what constitutes an inventive step and should rather be referred to a logical approach to the question. Once the last stage of the test has been reached the courts have had to introduce several different criteria to evaluate an invention. Commercial success and technical progress are two of many criteria used by the courts. The British courts have emphasised that inventiveness is a question of fact and that it is thus important to take into account all surrounding circumstances. They have further emphasised that no legal principles can be formulated from such decisions, since the evaluation takes place in the light of the particular facts of the case. The EPO has on the other hand, emphasised the importance of legal principles, despite the fact that the evaluation does not constitute a question of law. The most distinctive principle, which has emerged within the EPO, is the so-called problem-and-solution approach. A characteristic feature of this approach is its insistence that questions based on the technology disclosed in the patent and cited art should be given prominence and that circumstantial evidence should be given little weight.

There are thus apparent differences in the approach taken by the British courts and the EPO towards the question of inventiveness. These differences could further be classified as of substance rather than formal. It could be argued that for the sake of a coherent system and an efficient society the British courts ought to first, use one test and secondly, adopt if not the problem-and-solution approach an effect-based test.

1. Introduction

When is something inventive? How does one define inventiveness? These questions lie at the heart of modern patent law. Unless a claimed invention, which has been found to be novel also involves an inventive step, it is not patentable. It is not entirely self-evident why something, which is novel must in addition be inventive in order to be protected by a patent. Many patent systems have however come to require such an additional feature in order to make sure that only those inventions, which do not vary from the known only in more or less minor details, will be granted a patent. A patent is after all a state granted monopoly, which it could be argued, ought only to be given to those inventions which really deserve it.

Having established that a requirement of inventiveness limits the amount of patents granted, one cannot help but wonder what inventiveness involves. It is neither an entirely clear nor a self-explanatory word. Depending on through whose eyes one looks, the level of required inventiveness may vary. As a result of this, the evaluation of inventiveness is the largest single cause of uncertainty about the validity of patents and is hence a frequent inflator of the scale and length of patent disputes. At the same time it gives, in my opinion, rise to one of the most interesting areas in patent law. It is perhaps the combination of being one of the most difficult areas and at the same time remaining at the absolute heart of patent law, that makes it such an intriguing subject to analyse. I believe that it was the challenge of trying to structure and comprehend the concept of inventive step that made me decide to write my dissertation in this rather narrow area of patent law.

1.1 Purpose

The purpose of my dissertation is first to analyse the tests for inventive step that are applied by the British courts and by the Board of Appeal (“EPO”). Secondly, to consider whether any differences are of substance or merely of form and finally if the former is true, consider whether the British courts ought to adopt the approach taken by the EPO.

Section 3 of the Patent Act 1977 and article 56 of the EPC, which are the main regulatory provisions regarding the question of inventiveness, are formulated using identical terms. However, because of the general formulation used in both provisions, the courts have had a considerable degree of freedom to develop the criteria to be used in the evaluation of obviousness in a way, which they regard as suitable. The EPC was drafted in an attempt to harmonise the patent laws of the participating countries. The question is whether this has in fact been achieved. This thesis will not attempt to compare the laws of all participating countries in order to see whether harmonisation has taken place. Instead it will focus on the United Kingdom in comparison with the EPO. Which criteria do the British courts use when they evaluate inventiveness? Which criteria does the EPO use when doing the same type of evaluation? Is there a difference of substance or one of form? If the former is true, should the British courts adopt the approach taken by the EPO? These questions will be answered in various detail. My main purpose will however remain to review and classify the actual criteria used by the respective courts since there are at present no complete analysis of this kind available.

1.2 Method and disposition

This thesis is a comparative study, which means that a descriptive as well as analytic method has been used. In order to satisfy the purpose of my dissertation it has been necessary to focus mainly on the case law, which has emanated as a result of s 3 of the Patents Act 1977 and EPC A 56. There is no satisfying attempt by legal authors to analyse the criteria used by the British courts. Several authors have attempted to describe the assessment of obviousness in general terms not trying to classify the criteria used in the evaluation of obviousness. It was thus necessary to read, analyse and classify the decisions reached by the British courts. Literature and articles on the subject have hence formed a secondary source of information. The same method has mainly been used in order to analyse the approach taken by the EPO. However, there are a few authors, which have attempted to analyse this approach if not in great detail, at least in more than general terms. I have therefore in this area more often used literature and articles as a source of information.

In order to approach the difficult task of examining the evaluation of inventiveness in a way, which is both logical and comprehensive to the reader, I have decided to begin by a short account in chapter 2 of the difference between a United Kingdom patent and a European patent. This chapter is followed by an account of the patentability in general of both United Kingdom patents and European patents. Having reached a fuller understanding of the area that this dissertation is dealing with, chapter 4 examines the approach taken by the British courts to the evaluation of obviousness. Chapter 5 analyses the approach taken by the EPO. The final two chapters feature my conclusion as to whether first, there is a difference of substance or one of form between the two systems and secondly, whether the British courts ought to move closer to the approach taken by the EPO.

1.3 Limitations

As has been mentioned above I have chosen to make a comparison between the approach to inventiveness taken by the EPO and by the British courts. I have thus instead of making a general comparison as to whether the EPC has harmonised the national courts' approach to the evaluation of obviousness, chosen to focus on the United Kingdom. This means that I have been able to dig deeper into the world of inventiveness in the two systems.

I have further chosen not to focus on economic analysis, which very much lie behind patent law as a whole. Intellectual property law and economic analysis is a fascinating subject. Despite this I have mainly decided not to embark on such discussions. The subject will however feature briefly in certain parts of my thesis.

It should be emphasised that the review and classification that takes place in this dissertation is built on those cases, which I believe to be representative of a certain criterion. Other authors may have wanted to choose different cases to represent certain criteria or they would perhaps not have found a certain criterion to exist as a separate one. It has further been my choice, which cases to account for in greater detail and which cases to simply refer to. It will be seen that the facts of cases decided by the British courts are discussed at greater length than those decided by the EPO. This also represents a choice made by myself. The British courts have adopted the view that the

assessment of obviousness is a question of fact and that no legal principles can be formed from such decisions. It has thus been vital to look closely at the particular facts of many of the British cases. While the EPO also regards the evaluation as one of fact, it also emphasises legal working principles to be drawn from the cases. It has thus not been as important to look at the particular facts of these cases.

This thesis is further written from a British perspective, which means that greater focus has been put on the chapter examining the criteria introduced by the British courts. It is an attempt to draw attention to the fact that it is not clear what criteria are used in the United Kingdom to assess inventiveness and that this should be clear taking into account that the United Kingdom is a participating nation to the EPC. It is also an attempt to discuss from a British point of view whether the British courts ought to, if a difference of substance can be seen to exist, adopt the approach taken by the EPO.

Finally, it should be mentioned that I have chosen to bring out and discuss certain problems, which I have found to be of importance and interest for this thesis. Frequently, the same type of problem can be seen to arise in both the United Kingdom and under the EPC. For example, the problems that arise from using commercial success or the concept of “person skilled in the art” can be seen to arise in both systems. To avoid repetition I have in such situations chosen to discuss the problem under chapter 4, which deals with inventiveness in the United Kingdom. This does however not mean that the same problem does not arise in the EPC.

1.4 Research and material

It has become clear that the material used to analyse the evaluation of inventiveness, has been mainly case law. I have taken care to read, analyse and finally select the cases, which in my opinion are of importance for my thesis. Due to having the opportunity to attend lectures at the London School of Economics and Political Science on this particular subject, my research has been enormously helped. The literature found on the evaluation of inventiveness in the United Kingdom has been of limited help, due to the lack of in depth analysis of the subject. However, I have found much help in certain articles written by authors who have taken care to address one

particular issue of the evaluation. S. Gratwick's articles on what forms "part of the state of the art" is a good example of this.

The literature, which can be found on European patents, has however been of more assistance. Although it can not be said those authors, which have examined the European patents have taken care to write a detailed account of the approach taken by the EPO, they have at least made an attempt to discuss the subject in more than simply general terms. There are further a few good articles, which discuss the subject in question. P. Cole and G. Szabo's articles should be mentioned in this context. Although it is true that the literature, which deals with inventiveness in the EPC, has been of help, the case law, which has emerged from the EPO has been the first source of information.

2. United Kingdom patents and European patents

A patent may be secured for the United Kingdom either by applying to the British Patent Office or to the EPO. A European patent designating the United Kingdom is according to s 77 of the Patents Act 1977 for most parts treated as if it had been granted by the British Patent Office. This means that although a European patent is granted by the EPO, subsequent enforcement and general administration of that patent is handled by the British Patent Offices and courts. It could therefore be said that if an applicant decides to go through the EPO, a bundle of individual patents is granted to him. It should however be emphasised that according to EPC A 138 the validity of each individual patent will be assessed in accordance with the rules set out in the EPC rather than on the national grounds (if different).

Even if it is true to say that the European patent is treated as if it were a British application, one significant difference remains. A European patent is as a whole open for a limited period to opposition proceedings before the EPO. A British patent may however only be subject to proceedings before the British tribunals.

An inventor's decision to apply for a European patent or to file separate applications in those European countries of interest to him involves several factors. The high cost of applying through the EPO is one factor, which remains important. However, when

the applicant wants to involve not only two or three different countries, the single procedure through the EPO is preferable both in terms of time and costs. Although the EPO is still in its infancy compared to many national Patent Offices its examinations are well known for being thorough and this could also be a reason for those inventors, which have a strong case to file an application with the EPO.¹

3. The patentability of inventions

European patents must be valid in accordance with certain criteria of validity specified in the EPC. A national state for which a European patent is granted must not add further requirements than the ones set out in the EPC. The Patents Act 1977 has accordingly adopted the criteria set out in the EPC for United Kingdom patents.

According to the EPC A 52 and s 1(1) of the Patents Act 1977 an invention is patentable if it:

- a.) is novel
- b.) involves an inventive step
- c.) is capable of industrial application and
- d.) does not fall as such within any of the categories of subject matter specifically excluded.

The criteria of invalidity are formulated in general terms and thus give rise to a considerable degree of legal uncertainty. The EPO and the national courts have been given the difficult task of developing these general criteria in order to produce a coherent body of norms for inventors to rely on.

A considerable body of case law has indeed been produced by national courts and even more by the EPO. It is however questionable whether this has in fact resulted in greater legal certainty especially in the area of “inventive step”. The examination that takes place in respect of novelty is in most cases relatively straightforward. The same cannot be said for the assessment of inventiveness. In the United Kingdom this

¹ W.R., Cornish, *Intellectual Property: Patents, Copyright, Trade Marks and Allied Rights*, Sweet & Maxwell, 4th ed., 1999, at 143-144; B.C., Reid, *A practical guide to patent law*, Sweet & Maxwell, 3rd ed., 1999, at 181-182.

assessment constitutes one of the most complex areas in intellectual property law. At the same time it remains at the heart of patent law making it necessary to review and classify the criteria applicable.²

4. Inventive step in the United Kingdom

4.1 Introduction

If an invention has passed the novelty test contained in s 2 of the Patents Act 1977 the next requirement, which the courts must consider, is whether the invention involves an inventive step. It is worth emphasising that not everything that is new is patentable. Patents are not seldom sought for inventions, which may vary only in some minor detail from that which is already known. It is in order to draw the line excluding some of these claims that many patent systems require that the invention is not obvious. The inventor is in other word often required to have taken a leap forward, putting him ahead of other inventors.

The concept of obviousness has not always been part of British patent law. The Statute of Monopolies 1624 stated that letters patents could only be granted for “any manners of new manufacturers” thus making the requirement of novelty part of the law but not inventiveness. The concept of obviousness developed when the courts realised that it would be intolerable to grant a patent where the difference between the alleged invention and what was already known was insubstantial. The old case of *Harwood v. Great Northern Ry*³ where a patent was regarded as lacking novelty when the court could only find an insubstantial difference, is a good example of this. As the law developed further a separate phrase was introduced by the courts for the situations described. Where there was too small a difference to support a patent it was said to be lacking in subject matter. At the end of the 18th century the word “obvious” started to make its entrance into the courts. An early example of this is the case of *Vickers Sons & Co. Ltd v. Siddell*⁴. In this case *Herschell LJ*⁵ emphasised that want of novelty and

² W.R., Cornish, *ibid*, at 173-174; P., Torremans, J., *Holyoak*, Intellectual Property Law, Butterworths, 2nd ed., 1998, at 54.

³ [1864] 11 H.L.C 654, at 682-683.

⁴ [1890] 7 R.P.C 292.

⁵ at 304.

the concept of obviousness should be dealt with separately. He later in *Longbottom v. Shaw*⁶ declared that the question to be posed is whether the invention is merely such an adaptation which would be obvious to anyone whose mind addressed to the subject. The two concepts of validity thus became separated around this point in time. During the development of the two concepts, a fundamental difference in the philosophy underlying the approach to them, emerged.⁷

One could question why an inventor having invented something new must also satisfy an additional test of non-obviousness. However, it should always be remembered that a patent is a monopoly imposed by the state. A monopoly should only be given to those inventions that deserve to be given such protection. The requirement of inventiveness is one way of trying to make sure that the patent system does not result in an economically inefficient society. Only where in the long term the disadvantages of a monopoly is outweighed by the advantages to society in the form of an increase of inventive activity should a patent be granted.

In view of the important role that the criterion of inventive step plays in British patent law, one would expect a clear definition of inventive step in the Patent Act 1977. This is however not the case. In s 3 of the Patent Act 1977 it is stated that “An invention is inventive if it is not obvious to the person skilled in the art, having regard to any matter, which forms part of the state of the art”. This general definition does not provide much information as to the factors, which are involved in an evaluation of obviousness. It further involves two concepts, which can be interpreted in a number of different ways, namely “person skilled in the art” and “part of the state of the art”. The courts have had to interpret and develop s 3 of the Patents Act 1977 and have thus successively introduced criteria to be used when assessing whether a particular step taken by an inventor is sufficiently inventive.⁸

It should be emphasised that the question whether an invention is obvious, is essentially a factual issue. The assessment made is often labelled a jury question. In

⁶ [1891] 8 R.P.C 333, at 337.

⁷ S., Gratwick, “Having regard to what was known and used” (1972) 88 L.Q.R 341, at 341-344.

⁸ P., Torremans, J., Holyoak, *ibid*, at 66-67; W.R., Cornish, *ibid*, at 191-192.

Genentech Inc's Patent⁹ it was stated that obviousness is a jury question to be assessed by the judge in the light of all the facts before him and that he should not focus on formulating universal principles. Dicta to the same effect were formulated in *Allmänna Elektriska v. Burntisland Shipbuilding*¹⁰ and *Johns Manville's Patent*.¹¹ Further, in *Mölnlycke AB v. Proctor and Gamble Ltd*¹² numerous cases were reviewed on the issue of obviousness but few were considered to be of assistance. It was observed¹³ that citing previous decisions on a question of fact was neither useful nor a proper exercise.

Despite the reluctance of the courts to regard previous decisions on the ground that every case ought to be treated in isolation in the light of the particular facts of the case, the cases should be reviewed and classified. This is important because these decisions constitute the legal background against which the courts work. The courts will often resort to certain specified criteria during a limited period of time only to change for a while and then resurrect to those criteria years later. In view of this it should not be forgotten that it is a valuable exercise to try and review as well as classify this factual issue in order to minimise legal uncertainty.¹⁴

4.2 The basic test

The basic test for assessing obviousness was clearly outlined by Oliver LJ in *Windsurfing International Ltd v. Tabur Marine Ltd*.¹⁵ In this case a patent had been granted to the plaintiff in 1968 for the invention of a windsurfing board. The defendant, who was accused of infringement, objected to the initial validity of the patent. An article from 1966 featuring sailboards with the same basic principles of construction and evidence, which showed that a 12 year old boy in 1958 had made and used a similar but more primitive sailboard, was brought forward. The boy had used a simple straight boom with which to hold the sail taut and provide a handhold for the rider. The patented boom on the other hand was a more sophisticated arc-

⁹ [1989] R.P.C 147, at 246, 281.

¹⁰ [1952] 69 R.P.C 63, at 69.

¹¹ [1967] R.P.C 479, at 491, 496.

¹² (No 5) [1994] R.P.C 49.

¹³ at 112.

¹⁴ W.R., Cornish, *ibid*, at 192; B.C., Reid, *ibid*, at 43-44; C.I.P.A., *Guide to the Patents Act*, Sweet & Maxwell, 4th ed., 1995, at 63-64, 66-67.

shaped model, which meant that a greater speed could be attained. The court held that the use of the boom was common and that the arc-shaped design was an obvious improvement on the boy's design and the sailboards in the article. In his decision Oliver LJ¹⁶ established that the court must:

1. identify the inventive concept embodied in the patent
2. assume the mantle of the normally skilled but unimaginative addressee in the art at the priority date and impute to him what was, at that date, common general knowledge in the art in question
3. identify what differences exist between the matters being known or used and the alleged invention
4. ask itself whether, viewed without any knowledge of the alleged invention, those differences constituted steps, which would have been obvious to the skilled man or whether they required any degree of invention.

Although the patent in *Windsurfing* was sought under the 1949 Patent Act, the above test is still regarded as being of assistance. It has been applied and declared of assistance on numerous occasions ever since Oliver LJ postulated it.¹⁷

The traditional way of approaching the first stage of the test is by fully understanding the invention as disclosed and claimed in the patent. A good example of this traditional view is *Unilever v. Chefaro*.¹⁸ In this case Jacob J¹⁹ stated that the first stage of identification of the concept is likely to be a question of construction. What does the claim actually mean? However, at the same time he observed that it is not enough to simply ascertain that the inventive concept is that which the claim covers. It would be too wooden an approach since a mere construction of the claim can not effectively distinguish between the portions that matter and the portions, which do

¹⁵ [1985] R.P.C 59.

¹⁶ at 73.

¹⁷ e.g. *Vax v. Hoover* [1991] F.S.R 307; *Hallen Company v. Brabantia (UK)* [1991] R.P.C 195; *Minnesota Mining v. Rennicks* [1992] R.P.C 331; *Boehringer Mannheim v. Genzyme* [1993] F.S.R 716; *Lux Traffic v. Pike* [1993] R.P.C 107; *Mölnlycke AB v. Procter and Gamble Ltd (No 5)* [1994] R.P.C 49; *Unilever v. Chefaro* [1994] R.P.C 567; *PLG Research Ltd v. Ardon International Ltd* [1995] F.S.R 117; *Beloit Technologies Inc v. Valmet Paper Machinery Inc* [1997] R.P.C 489.

¹⁸ [1994] R.P.C 567.

¹⁹ at 580.

not. What one is trying to do in the first stage of the Windsurfer test is to identify the essence of the claim.

In *Biogen Inc v. Medeva plc*²⁰ the first stage of the Windsurfer test was considered and approached in a different way. The court declared²¹ that the inventive concept was neither the identification of the problem nor the general approach to be taken to it but rather the problem and its precise resolution. Lord Hoffman employed an analogy in order to demonstrate this. Inventors had for centuries ruminated on the problem of flying machines, which meant that this could not on its own be an inventive concept. At a later stage more precise and detailed thoughts were given to such things as engine type and the shape of different parts of the machine. However, mere thought was not sufficient to constitute an inventive concept. It was only when the Wright brothers succeeded in making a machine, which was capable of flying that an inventive concept had come into existence.²² This way of describing the first stage of the Windsurfer test could mean that the stage requires a problem-and-solution analysis in accordance with the approach taken by the EPO. Whether it is possible to argue along these lines will be discussed in greater detail below under chapter 6.

The key feature of the Windsurfer test arises at stage two. It is by deciding through whose eyes the question of the inventive step should be viewed that the law is able to set the level at which the line between obviousness and inventiveness is to be drawn. The concept of the unimaginative man skilled in the art and the problems that the courts are faced with as a result of it must therefore be analysed in depth. This will be done below under chapter 4.3.

The third stage of the Windsurfer test does not give rise to any particular difficulties and it will accordingly not be examined any further.

The final and fourth stage has on the contrary given rise to difficulties in that it asks the question: was it obvious? Once the courts have reached the last stage of the test the question that was initially asked is asked once again. The Windsurfer test thus

²⁰ [1997] R.P.C 1.

²¹ at 45.

²² P., Torremans, J., Holyoak, *ibid*, at 67.

leaves the decision of whether the invention involves an inventive step entirely to the court. The test helps with the preparation of the evaluation but when this has been done and the time has come to decide whether an invention is obvious, the analysis has nothing to offer. It could therefore be argued that the test does not in any way give valuable advice to the courts. It could in fact be argued that the statutory provision is more straightforward since it merely requires a one-step test. However, it is thought by many judges, that the value of the analysis is not that it alters the critical question but rather that it enables the tribunal to approach the question in a structured way. It is therefore probable that the courts will continue to apply the Windsurfer test in the future in order to approach the question of inventiveness in a logical way.²³ What may change in the future, are the actual criteria, which have successively been introduced by the courts once stage four of the Windsurfer test has been reached. Before turning to these criteria two concepts embodied in both s 3 of the Patents Act 1977 and the Windsurfer test must be examined: “Person skilled in the art” and “Part of the state of the art”. These concepts, which lie at the heart of the evaluation of obviousness, have given rise to a great degree of legal uncertainty. The concepts can be construed in numerous ways and depending on the preferred construction the inventor suffers or benefits.

4.3 Person skilled in the art

As has been mentioned above the key feature of the Windsurfer test arises at stage two. By deciding through whose eyes the question of inventiveness should be viewed the law is able to set the level at which the line between obviousness and inventiveness is to be drawn. The question where to set the level of inventiveness presents a highly complex as well as vitally important issue. If the level is set too low the amount of patents granted will increase resulting in the British Patent Office becoming swamped with applicants and the courts having to deal with an increase in infringement actions at enormous costs. Further, the society as a whole may not benefit from such an increase because of the nature of the patent as a monopoly. If the

²³ D., Bainbridge, *Intellectual Property*, Pitman Publishing, 4th ed., 1999, at 363-364; P., Cole, “Inventive step-meaning of the EPO Problem and Solution Approach, and Implications for the United Kingdom-Part II” (1998) *E.I.P.R* 267, at 271.

level is set too high on the other hand, inventive activity may suffer because inventors may feel reluctant to invest funds and energy into such activity.²⁴

The classic definition of the person skilled in the art was provided by Reid LJ in *Technograph Printed Circuits Ltd v. Mills and Rockley Ltd.*²⁵ In this case the plaintiffs brought an action for infringement of their patent, which was concerned with printed circuits. The specification referred to a method of producing a two-dimensional wiring system by covering an insulating board with copper foil, printing the pattern of conductors required on the foil using resist ink and removing the unprotected copper by acid so as to leave on the insulating background a conductive pattern constituting the metallic part of the circuit component. The defendants challenged the validity of the patent by relying on a prior United States patent for making electrostatic shields. The specification of this patent referred to a method, which the inventor had tried but then rejected as inferior to that which he claimed. The court concluded that an inventive step was present and thus ruled in favour of the plaintiff. In his judgement Reid LJ²⁶ defined the person skilled in the art, as a skilled technician who is well acquainted with workshop techniques and who has carefully read the relevant documents. This person has an unlimited capacity to soak up the contents in the relevant documents but is at the same time incapable of a scintilla of invention.

The use of the word “technician” in this definition probably indicates that what the courts are faced with is neither a highly qualified person nor an ordinary workman. It is a person with extensive knowledge who is incapable of developing ideas from all that he knows. In *The General Tire & Rubber Company v. The Firestone Tyre and Rubber Company Ltd*²⁷ it was however declared that the notional skilled reader rather than being a single person could be a team. The case was concerned with a patent for the making of oil-extended rubber, which was suitable for the manufacturer of tyre treads. The case was thus concerned with a highly developed technology limiting the

²⁴ E.W., Kitch, “The nature and function of the patent system” 20 J.L & Econ.265, (1977).

²⁵ [1972] R.P.C 346.

²⁶ at 355.

²⁷ [1972] R.P.C 457, at 482-485.

decision that a team can replace the single skilled man to high tech areas. Decisions to the same effect can be found in *American Cyanamid v. Ethican*²⁸ and in *Genentech*.

Certain problems arise from using as guideline a person capable of soaking up all relevant information but unable to develop any ideas from all that he knows. The character is in our society highly unrealistic and it is thus difficult to really know what such a person would regard as obvious. Further problems arise in respect of this unrealistic person when one considers the fact that Reid LJ²⁹ in his judgement declared that expert witnesses are generally valuable and necessary when assessing obviousness. Expert witnesses are usually highly qualified researchers who are far from unimaginative. It is hard to believe that they are able to transform themselves into a person incapable of inventiveness when giving their view as to whether a certain invention involves an inventive step. This means that the inventive bar is in practise set higher than intended.

The problem of the unimaginative man being unrealistic was in fact taken to a different level in *Genentech* where the court recognised that the hypothetical addressee concept is unworkable in an area of intellectual complexity such as genetic engineering. In this case claims to a product (t-PA) made by recombinant DNA technology were revoked by the court partly because the existence of t-PA in natural environment together with its characterisation and utility was part of the prior art, and to attempt its preparation by such technology was an idea well worth trying out to see if it would have beneficial results. This was supported by the fact that others had been working in parallel, though slightly later, and that the research work, though difficult and time-consuming, required no more than pertinacity, sound technique and trial and error. This could not be regarded as characteristics of a patentable invention. Although *Genentech* is a case of great complexity and length it is worth analysing its implications carefully. It is often not fully realised that this is a case of great significance in that the court in deciding that there was no inventive step involved, altered the level of inventiveness needed in order to receive a patent.

²⁸ [1979] R.P.C 215.

²⁹ at 356.

A key issue in the case was how the concept of the unimaginative man could cope with an area of such intellectual complexity as genetic engineering. Purchas LJ declared that

*in this type of situation the artisan has receded into the role of the laboratory assistant and the others have become segregated into groups of highly qualified specialists in their own spheres of all whom must possess a degree of inventiveness.*³⁰

By this he meant that since there is no one working in the field who is incapable of invention the person skilled in the art must for the purpose of s 3 of the Patents Act 1977 have a degree of inventiveness. Mustill LJ further observed that

*where one is looking at the research team one cannot treat them as dull plodders, for such people would not be members of the team at all, except as laboratory assistants.*³¹

There are some obvious merits to this decision which should be pointed out. One is that the problem of using expert witnesses for guidance as to what involves an inventive step disappears. Since expert witnesses are often highly skilled persons in the art the hypothetical addressee invented in the decision of *Genentech* thus limits the discrepancy between the inventive level set in theory and the level set in practice. The decision further creates a more realistic person than the unimaginative person discussed in *Technograph*. It is thus easier for the courts to relate to such a person when deciding the question of inventive step. However, the decision results in other problems, which are serious.

First, putting the inventive bar higher in high tech areas might not have satisfactory effects. Research and development (“R&D”) swallows a substantial amount of time, money, energy and highly qualified staff and this is so in high tech areas as well as other areas. If those who are willing to use these scarce resources for the purpose of research in areas of high intellectual complexity are not rewarded in the same way as other inventors, they might not be willing to invest in this kind of activity in the future. This will not benefit society as a whole. Especially when one considers the fact that R&D is extremely important in areas of high technology. It is perhaps in these

³⁰ [1989] R.P.C 147 (CA), at 214.

areas that society gains some of the greatest rewards from inventive activity and to deny legal protection and economic reward is not economically efficient. It could be argued that in the short term the inventor does in fact get a reward in the form of short-term market leading profits and that the consumer and society benefit from freer availability of products. However, in the long-term the inventor does not receive high-yield return on his investment and may as a result not find it worth while to devote resources to R&D. This means that society will lose the benefit of new products, enhancements to pre-existing products and improved processes for performing activities in the areas where society is perhaps in most need of it.³²

Secondly, the meaning of “person skilled in the art” will be different depending on if we are concerned with an area where most of the persons involved are at a doctoral or higher level or an area where the staff is not of this character. An objective test should not distinguish between different kinds of industries, but should apply equally to all areas. Why should an inventive step involve a bigger leap when the inventions relate to certain industries? This in fact leads to the possibility of having inventive inventions, which are still obvious. In other words some inventions must be superinventive. This brings about a great deal of unpredictability for inventors and accordingly legal uncertainty. Those involved in inventive activities will have considerable difficulties knowing what will apply to their finished product. This may again eventually lead to inventors not wanting to invest their time, money and energy into areas of such uncertainty. It is simply not worth investing resources when the outcome of such an investment is unpredictable.

4.4 Part of the state of the art

According to s 3 of the Patents Act 1977 a patent involves an inventive step if it is not obvious to the person skilled in the art, having regard to any matter, which forms part of the state of the art. In general the concept of “state of the art” means that the skilled man is taken to have in mind first, the common general knowledge of his art and, secondly whatever he would learn from the existing literature when seeking an answer

³¹ [1989] R.P.C 147 (CA), at 279.

³² E.W., Kitch, *ibid*; P., Torremans, J., Holyoak, *ibid*, at 71-72.

to the problem in question. The second category consists of documents such as patent specifications and learned articles as well as specific instances of use.³³

It has been held that obviousness should be decided by viewing the invention as a whole³⁴ against the state of the art as a whole.³⁵ In *Technograph*, Reid LJ³⁶ further established that the relevant documents did not have to be treated in isolation but could be read in the light of one another if this would be obvious to an unimaginative man. The question whether certain information forms part of the state of the art at all has been subject to much debate over the years. On the one hand it is possible to take the view that the concept “part of state of the art” should be the same for obviousness as it is for novelty. This view leads to a very wide state of the art, where anything made freely available to a single person would be treated as published. On the other hand it is possible to limit the state of the art for the issue of obviousness to whatever a diligent searcher would have uncovered.

The question was discussed in *Technograph* in some detail although it was not conclusively decided. Sachs LJ³⁷ observed that part of the state of the art includes any piece of paper, however old, however much discarded from practical point of view, whatever its language and however unlikely it would be that it would come to the attention of the skilled man. At the same time he declared that to say that something submerged in the overflowing archives could of itself result in a discovery being obvious, was a contradiction in terms and that this contradiction should merit consideration one day by those who are not bound by the rule of stare decisis. The same reluctance by the court to use an extensive state of the art can be found in *Woven Plastic Products Ltd v. British Ropes Ltd*.³⁸ In this case the plaintiffs were the registered proprietors of a patent, which related to matting. The defendant challenged the validity of the patent by relying upon the prior publication of the specifications of four Japanese utility models. Widgery LJ³⁹ noted that it is necessary to assume knowledge of prior inventions, which have been made accessible to the public even if

³³ W.R., Cornish, *ibid*, at 197.

³⁴ *Non-drip v. Strangers* [1943] 60 R.P.C 135.

³⁵ *Martin v. Millwood* [1956] R.P.C 125; *Illinois Tool v. Autobars* [1974] R.P.C 337.

³⁶ at 355.

³⁷ [1969] R.P.C 395, at 408.

³⁸ [1970] F.S.R 47.

³⁹ at 58.

the public has not recognised their potential or taken advantage of them. At the same time he declared that it seemed to be unrealistic to proceed as though the utility models from Japan were known in the United Kingdom before the plaintiffs devised their process. The case had however been argued on that footing and he agreed that this was indeed the proper approach.

From these comments it would seem that the right approach to be taken in law although it may not be the most preferable one, is to follow the same route as in the evaluation of novelty. However, in *Technograph* Reid LJ⁴⁰ (and Morris of Borth-y-Gest agreed with him⁴¹) argued that the skilled man could not be taken to have studied every specification or other document, which would be relevant on an issue of novelty. He observed that there might be documents, which although available, would never be looked at by anyone making such a search as the hypothetical addressee is supposed to have made. It was therefore according to Reid LJ more realistic to take the concept to mean what was or ought to have been known to a diligent searcher. Reid LJ and Morris of Borth-y-Gest thus decided to take one step further the view of Sachs LJ and Widgery LJ and disregard the fact that the precedents did not support this view.

In contrast Diplock LJ⁴² in *Technograph* took the view that it was not advisable to treat the phrase as having a different meaning in the evaluation of novelty and obviousness. The skilled man had to be treated as having read the documents carefully and completely and not as having confined himself to examining for example the claims at the end of the specifications.

The irreconcilable views in the case of *Technograph* caused great confusion in the area concerned with the state of the art. The question was discussed in *General Tire*⁴³ but the court declared that that it was not necessary to reach a concluded view. However, they could not leave it at that but concluded that they would have, had it been open to them, not included the same documents in the evaluation of obviousness as in the evaluation of novelty. Another case, which is worth mentioning in this

⁴⁰ [1972] F.S.R 47, at 355.

⁴¹ at 357.

⁴² at 361.

context, is *Olin Mathieson Chemical Corporation v. Biorex Laboratories Ltd*⁴⁴. In this case evidence was presented before the court which made it clear that if a diligent searcher had been asked to provide information on the relevant problem the resulting search would have revealed several documents, one of which contained a suggestion pointing directly towards the invention. If any interest had been shown in that suggestion a further search would have revealed other documents dealing specifically and in great detail with that suggestion. Graham LJ⁴⁵ therefore did not hesitate to accept that such material ought to have been considered and in doing so appeared to have in mind the same considerations as Reid LJ in *Technograph*.

Much speaks in favour of the approach taken by Reid LJ in *Technograph*. By referring to a diligent searcher and what would be obvious to him, Reid LJ envisaged that the searcher's activity would in practice differ in every case. The practices of the relevant industry, the state of general knowledge, the prejudices, would determine how such a man would act when presented with the problem. It could be argued that this is more in line with how our society works in that it is more realistic to rely on evidence as to the relevant industry and its practices than to make the artificial assumption that every document will be scrutinised. In an article by S. Gratwick,⁴⁶ he argues that

*If the evidence be that a document would be regarded as irrelevant to the problem, why should it be assumed to be scrutinised? If the evidence be that a document lies in a place in which the diligent searcher would not look, why should it be considered at all? If the evidence be that there is no index or abstract to lead him to the document and that, in the absence of such, he would not read every document but would, e.g. prefer to tackle the problem from first principles, why should it be assumed that he would read it?*⁴⁷

He further argues⁴⁸ that it is untenable as a matter of common sense to suppose that every document cited by an objector would have been closely scrutinised by the hypothetical man who is seeking to solve a problem. The state of the art should not be dealt with in the same way, as under novelty since the philosophy underlying the

⁴³ at 499.

⁴⁴ [1970] R.P.C 157.

⁴⁵ at 184-185.

⁴⁶ "Having regard to what was known and used" (1972) 88 L.Q.R 341.

⁴⁷ G., Gratwick, (1972), *ibid*, at 348.

approach to this criterion is different from the one that underlies obviousness. When the court is evaluating obviousness it is asking as to the probability that those wrestling with a particular problem, would naturally, and in the ordinary course of seeking to solve it, have perceived the inventor's answer to it. In respect to novelty such considerations are irrelevant. However meritorious the inventions and however obscure the document it may be fatal to his patent.

What the court is aiming at in an evaluation of obviousness is to find out how the unimaginative man described in *Technograph* would really behave and this according to S. Gratwick means not presuming that every document before the court would be scrutinised. Lord Diplock's dissenting decision in this aspect does not take note of the fact that the documents before the court result from a selection made ex post facto with knowledge of the invention. This constitutes a problem in that it does not regard whether certain documents would not have been selected for study at all.

S. Gratwick⁴⁹ suggests in his article that these apparent conflicts could be reconciled by taking the approach that all documents should indeed be taken into account. There should however be no presumption that a cited document would be read in full or at all or alternatively that such a presumption would be rebuttable. Such an approach was indeed taken in *ICI (Pointer's) Application*,⁵⁰ where it was noted that if a highly suggestive reference can be found in prior documents but it is masked in some way e.g. by prevailing opinion that other avenues of inquiry would be much more hopeful, this can weigh against a finding of obviousness.⁵¹

Even if it could be argued that the observations made by Reid LJ in *Technograph* has been met with much appreciation, the decision in *Windsurfing* may have swung the pendulum back. In this case the invention was held obvious after the defendant had produced two pieces of prior art evidence. The first was an article by an American and the second a plaything made and used in the backwaters of Chichester Harbour by a twelve years old boy. The court came to the conclusion that the invention was obvious eventhough expert witnesses explained in respect of the article that they did not think

⁴⁸ G., Gratwick, (1972), *ibid*, at 343-344,348.

⁴⁹ G., Gratwick, (1972), *ibid*, at 351.

⁵⁰ [1977] F.S.R 434 at 454.

the board presented in the article was worth developing or that it did not merit their interest. If the court had followed the statement made by Reid LJ about the diligent searcher, the court would have taken into account that the attitude of the skilled man was that this was not worth wasting time on and that it was thus not obvious for him to spend time on it. The same can be said in respect of the twelve years old boy's plaything. The court observed in *Windsurfing* that one has to postulate a skilled man applying his mind to making what he sees work. What the court should have looked at had Reid LJ model of the diligent searcher been followed, was whether the skilled man had regarded the child's homemade plaything at all. It could be argued that this would not have been the case.⁵²

The material, which is included in the concept of "part of the state of the art" thus, remains uncertain. In none of the cases in which the matter has been discussed has the view upon it formed the ratio decidendi. The debate is likely to continue until a case arises before the court where the matter must be concluded as a matter of ratio decidendi or until it is acknowledged by Parliament to be a matter for legislation.

4.5 The criteria used by the British courts

Having examined the Windsurfer test and the concept of "person skilled in the art" and "part of the state of the art" one cannot help but wonder when precisely the courts are likely to find an invention lacking an inventive step. Once the courts have assumed the mantle of the unimaginative man skilled in the art, decided what documents are relevant and have reached stage four of the Windsurfer test, the question still remains. Was it obvious?

Although the evaluation of obviousness is a question of fact and thus has to be decided in the light of the particular facts of the case, the courts have successively introduced certain criteria as guidelines. An attempt to review and classify the most established criteria will be made below.

⁵¹ R., Bowen, and others, Patents Act 1977, Sweet & Maxwell, 1978, at 54.

⁵² S., Gratwick, "Having regard to what was known and used –revisited" (1986) 102 L.Q.R 403, at 403-411.

4.5.1 Expert witnesses

The courts have generally considered expert witnesses to be valuable and necessary when assessing inventiveness.⁵³ In *Technograph*, Reid LJ⁵⁴ observed that although it is the court who must weigh the evidence, expert witnesses are highly valuable. In *Mölnlycke*,⁵⁵ *Nicholls V-C*⁵⁶ expressed that primary evidence is that of a properly qualified expert witness who declares whether or not in his opinion the relevant step would have been obvious to a skilled man and that all other evidence is secondary to that primary evidence. However, in the same case, Morritt LJ⁵⁷ declared that the history of the matter, the product development programs of the competing manufacturers, was a better guide than the expert evidence, which was subject to hindsight.

In the case of *Haberman v. Jackel International Ltd*⁵⁸ the view of Morritt LJ was followed. The patent in suit related to a trainer cup for use during the transitional period between being breast fed and using a normal cup. The problem with the old trainer cups, which the invention sought to solve, was leakage through the spout. The defendant who was accused of infringement claimed that the invention was obvious. In doing so they relied heavily on an expert witness who had not been involved at the relevant time in the search for new designs for training cups. The witness who had been given one of the defendant's cups was asked to put forward design concepts, which would render it spill proof. Within the half-hour he had come up with the same solution as the plaintiff and thus declared that the invention was obvious. The court however took little notice of this and instead turned to the fact that the patented development had been cheap, simple, effective and a remarkable commercial success.⁵⁹

⁵³ see however *British Celanese v. Courtaulds* [1935] 52 R.P.C 171 at 178, where the court held that an expert witness is allowed to give evidence as to the state of the art, the meaning of technical terms, generally explain scientific facts, etc, but he may not comment on whether any step is obvious.

⁵⁴ at 356.

⁵⁵ (No 5).

⁵⁶ at 112-113.

⁵⁷ at 83.

⁵⁸ [1999] F.S.R 683.

⁵⁹ at 697-702.

Certain problems can be seen to arise by finding expert witnesses, valuable and necessary in the evaluation of inventiveness. First, the task of the expert witness is to tell the court whether he/she believes that an unimaginative man would find the invention obvious. As has been mentioned above the problem with this is that expert witnesses are rarely unimaginative. They are usually highly qualified researchers who in practise unknowingly puts the inventive bar several centimetres higher than in theory.

Secondly, an expert witness addresses the prior art and the patented development from his own unique standpoint. It is therefore hard to believe that they contribute to an objective evaluation.

Finally, statements by expert witnesses may be coloured by their knowledge of what the inventor and his invention have achieved or by unjustified assumptions as to what the witness thinks the inventor is going to achieve.

It is thus clear that the use of expert witnesses constitutes problems. On the other hand it is clear that it is difficult for judges to evaluate whether an invention involves an inventive step since they can usually not be considered skilled in the art.

4.5.2 Combinations of well known things

As far back as 1890 the court declared in the decision of *Williams v. Nye*⁶⁰ that it was not inventive to combine two machines performing closely related functions into one, with no real alteration to the operation of either of the two machines. The case was concerned with a patent for a combination of the previously separated mincing-and filling machines used in the manufacture of sausages into one machine that was able to perform both functions. Cotton LJ⁶¹ observed that although the combined machine was exceedingly useful and commercially successful it was not inventive. What Williams had done was first to look at Gilbert and Nye's patent which consisted of two things: first, a cutting part and secondly, a filling part which was a screw operating upon the cut meat, forcing it along into the skin. Williams had then

⁶⁰ [1890] 7 R.P.C 62.

⁶¹ at 63, 66-67.

observed Donald's machine, which had improved the cutting part of Gilbert and Nye's invention and had decided to substitute Donald's cutter for Gilbert's cutter in order to get a machine which was efficient at both cutting and filling. The court noted that there was no difficulty involved in doing so. This meant that although the final product was a new machine in the sense that the public had never seen it in its actual form at the time when the plaintiff produced it, it was not new in the sense of being a substantial exercise of invention.

Forty-five years later a similar case arose before the courts in the decision of *British Celanese v. Courtaulds*.⁶² In this case a patent had been granted for a process of manufacturing artificial silk. The first claim of the patent involved the process of manufacturing artificial silk and like threads from solutions of cellulose derivatives containing volatile liquid such as acetone and the like. The artificial silk was spun downwards in an enclosing casing and was finally wound up on apparatus outside the casing. The second claim of the patent related to devices located outside the casing, for winding up the threads.

The process and the apparatus respectively claimed in the patent, was a collocation of four integers all of, which were old. Tomlin LJ⁶³ observed that it was accepted as sound law that a mere placing side by side of old integers so that each performed its own function independently of any of the others was not a patentable combination. Only where the known integers when placed together had some working inter-relation giving rise to a new or improved result could there be a patentable subject matter. Tomlin LJ⁶⁴ further observed that in the combination in question each integer was in fact performing its own part and was not functionally dependant upon the presence of any integer at all.

From these precedents it seems clear that in order to receive a valid patent for a combination of well known things there must be an inter-related working between the integers producing a new or improved result. It is not enough if what the inventor has

⁶² [1935] 52 R.P.C 171.

⁶³ at 193.

⁶⁴ at 194.

done, is simply to see the advantage in putting together two already well working machines without altering what they can do independently.⁶⁵

This may seem unwantingly harsh when one bears in mind that it may take great inventive skills to realise that two or more already known things will be efficient when put together. It should however be emphasised that slight changes to the facts of these cases may result in the inventor being able to claim non-obviousness. Suppose for example that one of the machines in the claimed combination is from a completely unrelated field of activity where the inventor could be said to have been inventive in realising that the machine's utility was transferable to his area of activity. It is probable that the courts would regard such a situation as involving an inventive step.

In this context the decision in *Hickman v. Andrews and others*⁶⁶ should also be considered. The patent in this case related to a product, which combined a workbench and a sawhorse, and vice. The patent was challenged on the ground of obviousness in relation to a bookbinder's finishing press and another larger press. Graham LJ⁶⁷ declared that in reality the skilled man in the art would not have found the prior art presses of any assistance in designing a new kind of workbench. The objection of obviousness thus failed. In making this decision Graham LJ did not take into account the decisions found in *Williams* and *British Celanese*. One possible explanation for this could be that he observed that the press in practise had to be adapted before it could be seriously used as a carpenter's workbench. Another possible explanation could be that more weight was put on commercial success than was done in the previous cases dealing with this kind of situation. In *Williams*, Cotton LJ⁶⁸ specifically explained that the fact that the sausage machine had enjoyed commercial success did not alter the fact that it was simply a combination of well-known things.

How a combination of old integers would be treated by the courts today is unclear. As will be discussed in greater detail below, the courts have sometimes treated commercial success as a valid criterion of inventiveness and sometimes as completely

⁶⁵ D., Young and others, *Terrell on the Law of Patents*, Sweet & Maxwell, 14th ed., 1994, at 139.

⁶⁶ [1983] R.P.C 147.

⁶⁷ at 170-172.

⁶⁸ at 66-67.

irrelevant. Recent developments in this area suggest that commercial success could lead to a combination of old integers being found to involve an inventive step.

4.5.3 Commercial success

Over the years the courts have been far from consistent when looking at commercial success as evidence of inventiveness. The presentation of such evidence has sometimes been treated favourably by the courts and sometimes with great suspicion.

Those who welcome commercial success as a criterion of non-obviousness often quote the following passage from *Samuel Parkes v. Cocker Brothers*⁶⁹

*When it has been found that the problem had awaited solution for many years and that the device is in fact novel and superior to what had gone before and has been widely used and indeed in preference to alternative devices, it is practically impossible to say that there is not present that scintilla of invention necessary to support the patent.*⁷⁰

It is clear that the correlation that the inventor tries to confirm by commercial success is that the invention cannot have been obvious since it satisfies a demand and that demand would have long been satisfied had the invention been obvious. This might be a reasonable assumption, but it can also be argued that it is important to remember that marketing efforts, appearance, price, etc are often as much significant in making a product successful on the market as the qualities of the product. Further, lack of immediate commercial success could be explained by factors that have nothing to do with the obviousness of the invention. Something might be inventive but fail to sell because consumers have no desire for it or because it is only of use in a small number of situations.

Due to the possibility of extraneous factors being part of commercial success the courts have in several cases taken a more careful approach towards such evidence. It has thus been established in a number of cases that commercial success can help to demonstrate inventiveness only if the invention is the cause of the success. In *Martin*

⁶⁹ [1929] 46 R.P.C 241.
⁷⁰ at 248.

v. Millwood⁷¹ the inventor of a nib construction for a ballpoint pen enjoyed great commercial success. The court⁷² however found that the success of the inventor's ballpoint pens was not due to the patented nib construction but on the discovery of an adequate ink reservoir, which was not the subject of the patent.

In other cases the courts have declared that they will take into account commercial success only if the need for the invention has been long felt. This was emphasised in *Longbottom*, where Herchell LJ⁷³ declared that if there had been a long-felt want so that men's minds were likely to have been engaged upon a mode of remedying the pre-existing defect, then account of commercial success could be taken.⁷⁴ This decision indicates that a person who challenges the validity of a patent is not obliged to show some explanation of the inventor's commercial success if the inventor has not first produced evidence of a long-felt want to which his invention is the answer.

However, it can not be ignored that the following question still remains: if obvious, why was it not done before? The answer to this question no doubt needs to be even more convincing if there has been commercial success.

Recent cases seem however to indicate that the criterion of commercial success should be treated cautiously. In the Patent Court in the decision of *Mölnlycke*,⁷⁵ Mummer J⁷⁶ declared that the question whether an invention involved an inventive step had to be considered technically or practically rather than commercially. He further observed that commercial success could be taken into account if it was due to the precise improvement, which had satisfied the long-felt want, but not if it was due to such things as appearance, get-up, price, marketing strategies or advertising campaigns. This was confirmed by Nicholls V-C in *Mölnlycke*,⁷⁷ where he noted that secondary evidence such as commercial success had a place, but that its importance would vary from case to case. The complexity of such evidence could further not be

⁷¹ [1956] R.P.C 125.

⁷² at 139.

⁷³ at 336.

⁷⁴ see also *Vax v. Hoover* [1991] F.S.R 307.

⁷⁵ (No3).

⁷⁶ at 503.

⁷⁷ at 112-113.

allowed to obscure the fact that it was no more than an aid in assessing the primary evidence that is expert witnesses.

This view was followed by the court in *Beloit Technologies Inc v. Valmet Paper Machinery Inc*,⁷⁸ where commercial success was treated as no more than a matter of some evidential value.

In *Raychem Corporation's Patent*⁷⁹, Laddie J⁸⁰ stated that where there has been commercial success it is usually difficult to show that it is due to inventiveness rather than some other commercial consideration, such as improved marketing and that adding a plea of such success accordingly only adds time and expense to the proceedings and serves no useful purpose.⁸¹

The recent trend of treating commercial success suspiciously was however broken in *Haberman*. The facts of this case were discussed under 4.5.1. In his judgement, Laddie J⁸² declared that commercial success could throw light on the approach and thought process, which pervaded the industry as a whole. He further observed⁸³ that in the case in question there had been a long-felt want, a failure of others to reach the simple solution claimed. The invention had also been cheap, simple, effective and a remarkable commercial success.

It seems as though the question whether commercial success should be a criterion of obviousness will remain debatable in the future. The trend of treating the criterion cautiously, which began around 1994, has been somewhat broken by *Haberman*. It remains to be seen how the British courts will treat this precedent in the future especially when one considers EPO's treatment of such evidence.⁸⁴

⁷⁸ [1995] R.P.C 705.

⁷⁹ [1998] R.P.C 31.

⁸⁰ at 66.

⁸¹ see also an earlier judgement by Laddie J, in *Brugger v. Medic-Aid Ltd* [1996] R.P.C 635.

⁸² at 699-701.

⁸³ at 687-705.

⁸⁴ D., Bainbridge, *ibid*, at 360-361; D., Young and others, *ibid*, at 131-132.

4.5.4 Does the invention satisfy a long-felt want?

The criterion of long felt want could be linked to the criterion of commercial success. The reason for this is that it could be argued that if there has been a long-felt want of a certain article, it will usually enjoy commercial success once put on the market. However, it is worth separating the criteria since some courts have emphasised that long-felt want was the decisive criterion and others have focused on the commercial success that may or may not follow from putting an invention on the market.

A good example of the former is the decision in *Woven*,⁸⁵ where it was held that although the plaintiff had proved that their material had been widely welcomed and that its sales had very soon ousted coir, sisal and jute fabric, they had not proved that there had been a long-felt want. As precedent for this judgement the court in fact cited the case *Samuel Parkes* discussed above in the context of commercial success. This decision could in other words be classified as taking into account the long-felt want of the article rather than the commercial success of it. The patent in suit related to a clip for holding labels, tickets and the like in position. The part in Tomlin's J judgement which could indicate that long-felt want is of importance is the statement that when *a problem has waited solution for many years* it is practically impossible to say that it does not involve an inventive step. However, if the statement is analysed as a whole there is not much, which points to a conclusion that long felt want is a decisive criterion.⁸⁶

A slightly more clear case of long-felt want is that of *Parker-Cramer Company v. G.W Thornton & Sons Ltd.*⁸⁷ The two patents in this case were concerned with a method of cleaning the floor between rows of textile machines by the automatic and repeated passage of an overhead vacuum cleaner. The patents were challenged on the ground that every competent housewife knows that dust can be removed from the floor by passage of a vacuum cleaner. Diplock LJ⁸⁸ held that the problem of preventing the dirt upon the floors in the aisles and under the machines and the desirability of collecting and removing it continuously, was recognised early in the

⁸⁵ at 47.

⁸⁶ see also below under chapter 4.5.8.

⁸⁷ [1966] R.P.C 407.

1950's. However, attempts to solve the problem, which were made throughout the period from 1952 to 1958, had not succeeded. The patents were accordingly held to be valid.

It is not easy to find cases where long-felt want features as the only or decisive criterion used by the courts. It does however often form part of the discussion of obviousness. The problem that arises when using long-felt want as the decisive criterion is that an invention may no doubt involve an inventive step even if it is not something which has been long wanted. Consumers may for example have no important use for a highly inventive article and will accordingly not long for it to appear on the market. One could also imagine the situation where consumers have never even thought along the lines that they would need a particular article until it appears on the market. In such situations there will again not have been a long-felt want.⁸⁹

For this reason the courts have applied the criterion cautiously. However, if a long-felt want of the invention can be established the courts certainly seem to have weighed it in favour of the inventor. For if the article, which the public has longed for, was obvious then why was it not made before?

4.5.5 Has the inventor done the unexpected?

In *Mutoh Industry Ltd's Application*⁹⁰ the patentees filed applications for the use of magnetic repulsion in reducing friction between the moving parts of a known type of drawing device. Each application employed a suitable pair of opposed magnets at locations in the device where friction was likely to occur. It was argued that the invention was obvious in the light of prior art showing the general construction of the drawing device and prior art in the form of the application of magnetic repulsion in a wide variety of technical fields, especially bearings. Whitford J⁹¹ came to the conclusion that users of the known device were not struggling desperately to

⁸⁸ at 418.

⁸⁹ T.A. Blanco, White, *Patents for Inventions and the Protection of Industrial Designs*, Stevens & Sons, 5th ed., 1983, at 102-104.

⁹⁰ [1984] R.P.C 35.

⁹¹ at 36-37.

overcome some problem, which restricted their activities. This meant that there had been no reason for the manufacturers of the device to look for outside assistance even if reduction of friction was naturally always inherently desirable. The invention therefore involved an inventive step.

The court thus established that if there is no problem present in a particular field and research is still undertaken whereby a solution to an unknown problem is found, an inventive step is involved.

By using the "unexpected" test the courts have found a way around situations where it is inventive to have the idea of doing a particular thing but the actual way of putting the idea into effect is not inventive. The courts are in other words keen to reward the inventor for the end-result even if it required no inventiveness to put it into effect. The same reasoning can be found in *Hickton's Patent Syndicate v. Patents and Machine*.⁹²

Another case, which was decided in favour of the patentee because he had done the unexpected, was *The Procter & Gamble Co v. Peudouce (UK) Ltd.*⁹³ In this case there was however the distinct problem of diapers leaking around the legs, which had to be solved. The patent in suit related to a diaper having a semi-rigid absorbent body and flexible side flaps. The side flaps were elasticised and prevented leakage around the legs of the wearer. The patent was challenged in the light of prior art in the form of a diaper with elasticised openings. The prior art was however not directed to the problem of leakage around the legs caused by a semi-rigid absorbent pad. The court noted that at the relevant time of the invention there was no manufacturer that considered elastication as a mean of improving the fit of the integral diapers and containment at the leg closures. Other manufacturers were at this time seeking to improve the containment of such diapers using the shaping, folding, bending or creasing of a rectangular absorbent pad. The patentee had thus done the unexpected and deserved a patent.⁹⁴

⁹² [1909] 26 R.P.C 339; see however *ABT Hardware's Application S.R.I.S O/36/87*, noted IPD 10040, where the decision in *Mutoh Industry Ltd's Application [1984] R.P.C 35* was distinguished.

⁹³ [1989] F.S.R 180.

4.5.6 The “right to work” test

The “right to work” test can be formulated into the following question: Is the invention merely an obvious extension of something, which is already being done?

The test could be said to be a logical extension on the criterion of novelty, which prohibits patenting of, known subject matter. The “right to work test” thus covers trivial extensions of known subject matter, which it would naturally occur to the skilled person to make. The most classic formulation of the test can be found in *Gillette Safety Razor Co. v. Anglo-American Trading Co.*⁹⁵ The patent in suit related to a safety razor employing a double-edged blade. Moulton LJ⁹⁶ explained that it is impossible for members of the public to keep an eye on all the patents and ascertain the validity and scope of each of them. He is however entitled to feel safe if he knows that what he is doing differs from that which has been done of old, only in non-patentable variations. What Moulton LJ meant by this, is that if the alleged infringement is in itself obvious over the cited prior art, the defendant can not be stopped.

It is not an easy decision to fully understand since the concepts of novelty and obviousness had at the time not yet become fully separated.⁹⁷ Oliver LJ in *Windsurfing* made a more modern fabrication of the test. The facts of the *Windsurfing* case have been discussed above under chapter 4.2. When Oliver LJ⁹⁸ reached stage four of his Windsurfer test he declared that it would be wrong to prevent a man from doing something, which is merely an obvious extension of what he has been doing or of what was known in the art before the priority date of the patent granted.

These general formulations of the “right to work test” do not really explain what the courts regard as an obvious extension. However, in *Thermos v. Isola*⁹⁹ it was established that the courts regard as an obvious extension, the mere new use of an old thing. The patent in suit related to the improvements in glass bottles for the

⁹⁴ at 193-198.

⁹⁵ [1913] 30 R.P.C 465.

⁹⁶ at 470.

⁹⁷ B., Reid, “The right to work” (1982) 1 E.I.P.R 6, at 9.

⁹⁸ at 60.

conveyance and storing of liquids. The invention consisted in providing a bottle with a suitable case or jacket and with double walls between which vacuum was created. It was clear that vessels of a similar kind were known and used for storing liquid air. Neville LJ observed¹⁰⁰ that what the patentee tried to patent was an addition to what was known as the Dewar vessel, in the form of a cover for the purpose of preserving liquid. He further observed that the inventor had in one sense added to the sum of human knowledge since he had exploited for public use an invention which had so far been confined to scientific purposes. On the other hand, all the inventor had really done, was to adopt the Dewar vessel for the precise purpose for which it had been designed, namely that of keeping liquids at the temperature at which they were poured in the bottle. The patent was in accordance with this declared invalid.¹⁰¹

The courts have also held that the mere application of a known principle to a use or subject matter within its scope is an obvious extension. In *Sonotone Corporation v. Multitone Electric Coy. Ltd*¹⁰² the court¹⁰³ held that there was no invention in applying a basic principle of electrical amplification to bone-conducting hearing aids, even if this had not previously been suggested in the period since the principle had been first formulated.

It is worth emphasising that the discovery of a new advantage in a thing already known does not in general save it from objection. Further, something, which is obvious to make for one purpose is not inventive because an unexpected advantage is discovered. This was established in the case of *Hallen Company v. Brabantia (UK)*¹⁰⁴ where an inventor claimed a self-pulling type of corkscrew in which the screw element had a non-stick coating of the kind commonly found on saucepans. Although the coating produced an improvement in extracting the cork, the court¹⁰⁵ explained that because it was predictable that the coating would help to insert the screw, it was obvious to add it.

⁹⁹ [1910] R.P.C 388.

¹⁰⁰ at 397-398.

¹⁰¹ see also *Rickman v. Thierny* [1897] 14 R.P.C 105, where a patent to coat boot eyelets with celluloid was invalid because this was already done to hooks and studs.

¹⁰² [1985] 72 R.P.C 131.

¹⁰³ at 142-143.

¹⁰⁴ [1991] R.P.C 195.

The courts have however recognised a grey zone, where it is difficult to ascertain whether the use or application falls on the other side of the evaluative line. It was thus established in *Gadd and Mason v. Mayor of Manchester*¹⁰⁶ that a use is not a mere analogy or the mere application of a principle if it calls for some ingenuity to overcome a practical difficulty in the adaptation or application. The patent in suit was concerned with an improvement in the construction of gasholders. The evidence pointed to practical difficulties to be overcome and the mode of overcoming them was by no means obvious to a person skilled in the art of gasometers.¹⁰⁷

At first sight the test thus described seems to be a sound one. However, there is an inherent problem in using an obvious extension as a criterion of obviousness. The test fails to appreciate that it is often the small differences that produce the greatest effects. The cases of *Fichera v. Flogates*¹⁰⁸ and *PLG Research Ltd v. Ardon International Ltd*¹⁰⁹ demonstrate this well. In the first case the patent related to a ladle for molten steel. The change, which had been made to the prior art, was small. The court however recognised that the effect of the small change was remarkable and refused to apply the “right to work” test. Instead they warned against treating dismissively apparently small changes to seemingly simple structures.

The same reasoning can be found in the latter case, which involved a change of starting material in the known process of drawing plastic sheets to form a net. The court held that it was wrong to decide the case on the basis of how big a change was involved where any change significantly affected other features. The patent was held to be valid because the skilled man would not have used the patentee’s starting point for the solution of the problem with which he was confronted.¹¹⁰

Cases like *Fichera* and *PLG Research* may indicate that the “right to work” test should not be treated as a conclusive test, especially in a situation where a small change results in a great effect.

¹⁰⁵ at 317-318.

¹⁰⁶ [1892] 9 R.P.C 516, at 524 –525.

¹⁰⁷ see also *Lister’s patent* [1966] R.P.C 30; *D., Young and others*, *ibid*, at 132-133.

¹⁰⁸ [1984] R.P.C 257.

¹⁰⁹ [1995] R.P.C 287 .

¹¹⁰ at 313; *P., Cole*, Part II, *ibid*, at 267-268; *P., Cole*, “*Purposive Construction and Inventive Step*”. (1995) 3 E.I.P.R 147, at 147-150.

4.5.7 Was it obvious to try?

The “obvious to try” test has mostly been used by the courts in chemical and biotechnological situations where pre-existing information falls only a little short of what is claimed to be inventive. The test requires the courts to assess how compelling the case for investigation must be and on what grounds an investigation would be made. In *Johns Manville* a clear formulation of the test can be found. The patent in suit related to the use of a flocculating agent in the manufacture of shaped asbestos cement articles. The patent was challenged in the light of two documents concerning the use of flocculating agents in two other industries. These industries although very different from that of the inventee’s, were known to find flocculating agents valuable. Diplock LJ¹¹¹ recognised that the patent was invalid in the light of the documents. In his judgement he stated that the man skilled in the art would have assessed the likelihood of success as sufficient to warrant actual trial.

A danger with such a formulation of the test is that in for example the search for new pharmaceuticals, a breakthrough with a new class of drugs, by working on one of the large range within the class, may make further investigations a relatively straight forward choice of one out of a number of laborious paths. In one sense it could be obvious to try all paths, but the courts have been reluctant to apply such an extensive test. It was thus established in *Olin Mathieson*¹¹² that if there was nothing to mark out the line of research actually pursued by the patentee as the path to follow first, an inventive step could nevertheless be found if the notional research group would not have been directly led as a matter of course to the alternative selected by the patentee in the expectation that it may well produce a useful alternative to or a better drug than the previously known substance. Further, in *Beecham’s (Amoxycillin) Application*¹¹³ it was established that the test is relevant only where those in the art have a particular problem in mind.

The limited application of the test discussed above, seem to produce an acceptable line of inventiveness. However, the test does not work well in respect to

¹¹¹ at 494.

¹¹² at 187.

¹¹³ [1980] R.P.C 261, at 290.

biotechnological inventions. Microbiologists, geneticists and cell biologists have advanced the manipulative techniques of biotechnology in a series of remarkable leaps. After each bound it has been possible to apply the new technique to all sorts of subject matter without more than a degree of persistence and luck. The British courts have adopted a very sceptical approach towards patents for successful results of such work. In *Genentech*¹¹⁴ it was declared that once the objective is known and standard techniques are applied, it is merely a commercial decision whether to take the chance of success.¹¹⁵

With the rising importance of biotechnological work and the special circumstances found in this kind of work the “obvious to try” test goes towards an uncertain future.

4.5.8 A new valuable technical effect

The British courts have never recognised as a distinct and superior criterion that the invention should show a technical progress over prior art. However, it could be argued that there are several cases, which indicate that the courts regard it as a point of reference in the search for an inventive step. What the inventor tries to argue in the light of such a criterion is that if the invention involves a real step forward in technique, yet it is an obvious one, why was it not made before?

As far back as 1923 in *Teste v. Combes*,¹¹⁶ Warrington LJ¹¹⁷ recognised inventiveness when a step was useful and not merely one which resulted in some immaterial and futile improvement. It should however be emphasised at this stage that in most cases where it could be argued that a new valuable technical effect was regarded by the courts in the evaluation of obviousness, it may not be apparent during a first reading. Sometimes a single word may be the only indication that the court had the technical effect in mind. The decision in *Samuel Parkes* is a good example of this. The case has been mentioned above in connection with the criterion of commercial success as well as in the context of long-felt want. It is however arguable that the decisive criterion

¹¹⁴ at 281.

¹¹⁵ W.R., Cornish, *ibid*, at 202-203.

¹¹⁶ [1923] 41 R.P.C 88.

¹¹⁷ at 104.

was in fact the new valuable technical effect of the article. The part of Tomlin's J¹¹⁸ judgement, which could indicate this, is the statement that the invention involves an inventive step if it is novel and superior to prior art. It is the use of the word *superior* to prior art that could indicate that what was really decisive in the case was the technical merit of the article and not the commercial success or long-felt want.

Another case which should be mentioned in this context is that of *Lucas v. Gaedor*¹¹⁹. The case was concerned with a bundle of patents, the most important being a car battery in which rubber was replaced by polypropylene. The evidence showed that the product had remarkable good properties. The court discussed several criteria such as the fact that others in the field had failed to make the same invention and commercial success. In the end however, the court explained that it had taken little account of commercial matters, which were thought to be extraneous and no account of the individual witnesses on either side. Instead the judgement rested on the surer ground of the inability of other manufacturers to see the answer to the production of a battery, which represented a very substantial step forward.

It was observed under chapter 4.5.6 that the courts have sometimes recognised that a small change or extension may produce a great effect thus convincing the courts that it is a patentable invention. Looking at these cases from the other side of the coin, they can be seen as supporting the view that a new valuable technical effect exists as a separate criterion of inventiveness. Thus in *Fichera*, both the Patent Court and the Court of Appeal were persuaded that the patent was valid because of the technical effect that the site of corrosion had been moved resulting in an increase in service life. Further, in *Beecham* the claimant had been granted a patent for a large class of penicillins for use of antibiotics and had then in a further patent singled out nine of them to be especially effective. At issue was an application by them for a patent for one type of one of those nine penicillins, which was especially amenable to absorption into the blood. The selected compound was held to be patentable because the prior art had not disclosed the outstanding new effect.

¹¹⁸ at 248.

¹¹⁹ [1978] R.P.C 297.

The most recent and perhaps clearest example of a new valuable technical effect being a decisive criterion is the judgement in *Mölnlycke*.¹²⁰ The product in question was a disposable diaper, which could be opened and re-fastened. The new feature was that a single plastic strip was provided, extending across the diaper at one end for fastening of tape tabs from the other end. The effect of this feature was to provide a landing surface with different characteristics from the back sheet so that each could be independently optimised. The invention was held to involve an inventive step. In the Patents Court, Mummery J¹²¹ held that the question whether an invention is obvious was a technical rather than a commercial question. It is clear from this decision that contemporary events such as commercial success should have less persuasive power than evidence of a new technical effect leading to an advantage. Both the Patents Court and the Court of Appeal held that the added feature provided a novel solution to the problem of providing effective re-fastenable tapes. In the Court of Appeal it was the technical differences and their consequential effects that were decisive in finding the invention non-obvious.

The criterion of a new valuable technical effect is perhaps the most concealed one of the criteria used by British courts in the evaluation of inventiveness. It is however one, which is recognised more and more by the British courts as an important criterion. The courts have come to refer to it as an objective criterion, which does not give rise to difficult questions of evidence as in the case of commercial success, long-felt want and the obvious to try test.

4.5.9 Conclusion

From the critical analysis and classification made above it is clear that no generally applicable methodology has emerged in England. The question whether an invention should be classified as obvious has been more or less decided on a case by case basis. It is true that certain criteria have appeared as guidelines but the courts have at the same time been keen to emphasise that all circumstances should be taken into account. This has resulted in a jungle of criteria, which may or may not help an inventor who contemplates to file a patent application or prepare his case at court.

¹²⁰ (No 5).

¹²¹ (No 3), at 503.

The EPO, which has as starting point the same wording as s 3 of the Patents Act 1977, has come to use a specific approach towards the question of obviousness. Their problem and solution approach will be analysed below and made to stand as a comparison to the criteria used in the British courts.

5. Inventive step according to the European Patent Convention

5.1 Introduction

The main provision, which deals with the inventiveness of European Patents, is EPC A 56. It is declared in this article that “ 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”. This definition of inventiveness corresponds to the definition found in s 3 of the Patents Act 1977. It was seen that the British courts have had the difficult task of developing and interpreting this general definition in order to produce a more manageable set of guidelines. The same is true for the EPO. When EPC A 56 was drafted, it was predicted that it would not need any further explanation because the concept of non-obviousness was the common property of the contracting states. This was however not entirely realistic and it became clear that EPC A 56 was in great need of being further developed and explained.¹²²

The question of inventiveness was early on regarded by the EPO as a question of fact. As has been discussed above, the British courts have come to the same conclusion. However, while it has been clearly established in the United Kingdom that no legal principles can arise as such from decisions regarding obviousness, the EPO has taken a different view. A large amount of the decisions of the EPO has emphasised points of legal principles, which underlie the assessment of inventive step in accordance with the EPC. The most distinctive principle, which is generally applied within the EPO, is the so-called problem-and-solution approach. This approach will be analysed in greater detail below.

¹²² J., Pagenberg, “The concept of inventive step in the European Patent Convention” (1974) 2 I.I.C 158.

There was a great desire within the EPO to find a test, which could command wide acceptance and which was easy and inexpensive to apply. G. Szabo discusses in his article,¹²³ EPO's decision to apply the problem-and-solution approach as a tool against inconsistencies. He explains that the need for consistency was regarded as more important than any advantages of pragmatism. Although the EPO recognised the difficulty in treating a factual issue as a question of law, it was never doubted that general applicable working principles, which could render the outcome of the assessment as predictable as possible, was needed. The Members of the EPO were not the only ones that argued in favour of introducing a test equivalent to the problem-and-solution approach. In a paper read to the C.I.P.A, F.W. Hacking proposed that such a test could and should be adopted¹²⁴ and articles by P.G. Cole¹²⁵ emphasised the advantage of ascertaining whether the claimed combination of features leads to a new function or to a new result. However, several arguments against finding consistency more important than pragmatism arose at the same point in time. Some of these will be discussed below under chapter 7.1.

5.2 The problem-and-solution approach

It is true that the EPC does not mention the problem-and-solution approach in any of its articles. The current EPO Guidelines¹²⁶ do however state that the examiner shall normally apply the problem-and-solution approach. It has since become apparent that the EPO has taken a favour to this approach. In the EPO's first such decision, Case T1/80 (BAYER/Carbonless copying paper)¹²⁷ the official headnotes state that the assessment of inventiveness has to be preceded by the determination of the technical problem based on objective criteria.¹²⁸ The universal applicability of the problem and solution approach was however questioned in Case T465/92 (ALCAN/Aluminium alloys).¹²⁹ The patent in suit was concerned with an extrusion ingot of an alloy in which the magnesium present was in a special form. This avoided the need for any

¹²³ (1995) 26 I.I.C 457.

¹²⁴ "Patentable Novelty" (1942-43) 61 C.I.P.A., Transactions 170.

¹²⁵ e.g. P., Cole, "Supermarket checkouts revisited" (1988) Patent World 12.

¹²⁶ EPO Guidelines for Examination in the EPO, Muenchen.

¹²⁷ [1982] R.P.C 321; [1979-85] E.P.O.R:B:250.

¹²⁸ see also Case T29/81 (SHELL/ Aryloxybenzaldehydes) [1979-85] E.P.O.R:B:335 and Case T26/81 (ICI/ Containers) [1979-85] E.P.O.R:B:362, where it was established that the problem and solution approach is mandatory.

¹²⁹ [1995] E.P.O.R 501.

additional solution heat treatment in between the subsequent extrusion and following age hardening. The EPO¹³⁰ explained that the problem-and-solution approach had to be considered as one amongst other possible approaches, each of which had its own advantages and drawbacks. This opinion was however criticised in Case T939/92 (AGREVO/ Triazoles),¹³¹ where the EPO had to consider whether it was credible that the technical effect, which supported patentability could be ascribed to the whole of the class of compounds claimed by the inventor or only to part of that class. It was declared¹³² that the EPO consistently decides the issue of obviousness on the basis of an objective assessment of the technical results achieved by the claimed subject-matter, compared with the results obtained according to the state of the art and that the next step decides whether the state of the art suggested the claimed solution of the problem. It would thus seem to have been established that the problem-and-solution approach is indeed mandatory.¹³³

The following fundamental stages are involved in the problem-and-solution approach:

1. The “closest prior art” to the invention in question is established.
2. The objective technical problem to be solved in progressing from the closest prior art to the invention is established by comparing the closest prior art and the technical results or effects achieved thereby, with the technical effect achieved by the claimed invention.
3. It is established whether the proposed solution to the technical problem is obvious to a person skilled in the art starting from the closest prior art.

This approach shows two distinct characteristics, which should be emphasised. First, the evaluation of inventiveness is essentially objective and secondly, it is a technical assessment of the inventiveness of the advance made from the closest prior art to the claimed invention. The latter characteristic means that circumstantial evidence like commercial success or failure of others to reach the invention, plays a less significant

¹³⁰ at 514-515.

¹³¹ [1996] E.P.O.R 171.

¹³² at 180-181.

¹³³ P., Cole, “Inventive step-meaning of the EPO Problem and Solution Approach, and Implications for the United Kingdom-Part I” (1998) E.I.P.R 267, at 215-216.

role. These distinct characteristics will come apparent during the following analysis of the constituents of the problem and solution approach.¹³⁴

5.3 The closest prior art (primary source)

The technical problem is formulated with reference to the closest prior art. In general one could describe it as the art which forms the best starting point within the state of the art from which the claimed invention could have been made. This was established in Case T254/86 (SUMITOMO/Yellow dyes)¹³⁵ where the patent related to a group of yellow dyes of complex chemical structure comprising a chlor-triazinyl substituent and a vinyl sulfone substituent as well as a chromophoric monoazo grouping. The patent was challenged for lack of inventive step. The question of what formed the closest prior art arose. The EPO¹³⁶ declared that the most promising springboard towards the invention, which was available to the skilled man, must be used.

It should be emphasised at this point that although obviousness in the EPO is judged in the light of the state of the art, which consists of all knowledge available to the public, particular attention is given to that prior art which differs the least from the claimed invention, that is “the closest prior art”. In Case T 24/81 (BASF/Metal refining)¹³⁷ the EPO declared that in determining which document forms the closest prior art, all art has to be considered even if the relevant statements have not been emphasised therein. The state of the art is thus at this stage not in any way limited. This means that the debate present in the British courts as to what forms part of the state of the art does not as such feature in the EPO. G. Szabo has indeed in his article¹³⁸ stated that

*It goes without saying that the invention must be non-obvious vis-à-vis anything and everything known in the art.*¹³⁹

¹³⁴ G., Paterson, A concise guide to European Patents: Law and practice, Sweet & Maxwell, 1995, at 150-151; P., Cole, Part I, *ibid*, at 217-218.

¹³⁵ [1989] E.P.O.R 257.

¹³⁶ at 263.

¹³⁷ [1979-85] E.P.O.R:B:354.

¹³⁸ “The problem and solution approach to the inventive step” (1986) 10 E.I.P.R 293.

¹³⁹ G., Szabo, (1986), *ibid*, at 293.

He continues by explaining that unless the relevant art is taken into account in depth, a verdict in favour of the inventor would remain inconclusive since the more promising line of challenge might not have been investigated.¹⁴⁰

EPO's approach to the concept of "the state of the art" means that the art may be in a parallel field to that of the invention. The skilled man is thus expected to be aware of the developments in neighbouring arts. This was clearly established in Case T176/84 (MOEBIUS/Pencil sharpener).¹⁴¹ In this case the patent related to a pencil sharpener which was hand-operated. The inventor had made improvements, which provided an improved solution to the known problem of preventing egress of shavings through the insertion aperture following use of the sharpener and withdrawal of the sharpened pencil. Prior documents could be found in the parallel field of saving boxes. The EPO declared¹⁴² that it was reasonable to expect a person skilled in the art to look for suitable parallels in neighbouring fields if it was needed. It was further explained that determination of that issue depended on whether the two fields were so closely related that the skilled man seeking solution to a given problem would naturally take into account developments in the neighbouring field. In this particular case it was however held that it was wrong to say that securing mechanisms for saving boxes represented a neighbouring field to slides for pencil sharpeners.¹⁴³ The same reasoning can be found in Case T57/84 (BAYER/Tolyfluanid)¹⁴⁴ where the field of plant protection was considered too remote from that of wood preservation.

The skilled man is also according to the decision in Case T426/88 (LUCAS/Combustion Engine)¹⁴⁵ expected to study textbooks outside his field of technology if they describe a general theory or methodology. In Case T560/89 (N.I.INDUSTRIES/Filler mass)¹⁴⁶ it was further held that literature in a non-parallel field to that of the invention, but where the same problem is well known and there exists a relationship between the materials used, is expected to be of interest to the man skilled in the art.

¹⁴⁰ G., Szabo, (1986), *ibid*, at 293.

¹⁴¹ [1986] E.P.O.R 117.

¹⁴² at 121.

¹⁴³ see also T32/81 (GIVES-CAIL BABCOCK/ Cleaning apparatus for conveyor belt) [1979-85] E.P.O.R:B:377 and T198/84 (HOECHST/Thiochloroformates) [1979-85] E.P.O.R:C:987.

¹⁴⁴ [1987] E.P.O.R 131, at 137.

¹⁴⁵ [1992] E.P.O.R 458, at 462.

It should be emphasised that location, reputation¹⁴⁷ and age of references or publications are normally considered irrelevant. In Case T169/84 (MITSUBISHI/Endless power transmission belt)¹⁴⁸ it was for example held that a United States Patent issued in 1893 was a reference, which the skilled man in the art should have looked for to see if the problem, which he faced had already been solved in another technical field where the same problem had arisen. However, old publications have sometimes been disregarded where it has been established that they have played no part in the development of the art.¹⁴⁹

It has been seen that the British courts have accepted mosaicing of documents. The EPO decided in Case T183/84 (BAYER/Titanyl sulphate)¹⁵⁰ that it is indeed permissible to combine documents within the same field to challenge the validity of a patent. The case was concerned with a seven-feature inorganic chemical process for the production of sulphate solution. Citations were found in separate documents, but the court did not regard this as a problem. There must however be a logical link between the two documents, which the challenger of the patent wants to combine. This logical link may however be provided by a third document. It should be emphasised that it is not permissible to combine unrelated or conflicting documents to challenge a patent.¹⁵¹

A problem, which arises from using the concept of the “closest prior art”, is that in a few cases it is debatable, which prior art constitutes the closest prior art document. Usually the prior art, which has the most technical features in common with the claimed invention and which is in the same technical field, will be regarded as the closest art. Sometimes the prior art, which is the most closely concerned with the problem underlying the claimed invention, will be the closest art. In a few cases it will however be impossible to establish, which document should be used as the starting point. It is not quite clear whether one document should be selected in such situations or whether the assessment of inventiveness should be done starting from more than

¹⁴⁶ [1994] E.P.O.R 120, at 125-126.

¹⁴⁷ see T48/85 (NRDC/Eimeria recatrix) [1987] E.P.O.R 138, Headnote 4, where it was decided that even foolish-looking instructions have to be taken into account.

¹⁴⁸ [1987] E.P.O.R 120, at 123.

¹⁴⁹ see T8/83 (BASF/Paper dyeing) [1986] E.P.O.R 186; T95/87 (DYSON REFRACTORIES/Catalyst production [1988] E.P.O.R 171; T321/86 (PHILLIPS/Display tube) [1989] E.P.O.R 199.

¹⁵⁰ [1986] E.P.O.R 174, at 178-180.

one document. It could be argued that it would be sensible to start from more than one document since the evaluation would otherwise remain inconclusive. Further, since the EPO has taken the view that all prior art should be considered it seems logical that a document should not be disregarded simply because another document exists which also forms the closest prior art.¹⁵²

5.4 Formulation of the problem

The problem-and-solution approach requires a patentable invention to provide a solution to a technical problem and that either that solution, or the problem, must be unobvious. The problem is formulated from the viewpoint of the closest prior art and not from that of the invention. This means that the EPO is trying to avoid hindsight seeping into the assessment of obviousness. It has several times been emphasised that a fair approach to the definition of the objective problem must be taken in order to protect the inventor.¹⁵³ It would not be fair to the inventor if the obviousness of his invention was assessed by looking backward using the knowledge of the claimed invention. This would in fact result in the inventive bar being set too high in practise, since it is easier to perceive the solution to a problem when the knowledge of the solution is taken into account.

When a European patent application is filed, the invention is often described and claimed by referring to the prior art known to the inventor at the time the invention was made. In the course of examination and opposition proceedings more relevant prior art frequently presents itself. This means that the problem, which the inventor considers himself to have solved, may not be the same as the objective problem, which is formulated by following the problem and solution approach.¹⁵⁴

A reformulation of the problem, which the inventor was faced with means that the technical problem may become a lesser problem than that envisaged by the

¹⁵¹ T2/81 (MOBAY/Methylenebis (phenyl isolyanate)[1979-85] E.P.O.R:B:280.

¹⁵² G., Paterson, 1995, *ibid*, at 151-152; G., Szabo, (1986), *ibid*, at 293-294; C.I.P.A., Guide to the Patents Act, Sweet & Maxwell, 4th ed.,1995, at 89-92; C.I.P.A., Guide to the Patents Act, Fifth Cumulative Supplement, Sweet & Maxwell, 2000, at 29-32.

¹⁵³ e.g. T5/81(SOLVAY/Production of hollow thermplastic objects) [1979-85] E.P.O.R: B:287; T229/85(SCHMID/Etching process) [1987] E.P.O.R 279.

¹⁵⁴ T13/84(SPERRY/Reformulation of the problem) [1986] E.P.O.R 289.

inventor,¹⁵⁵ a problem at a more general level¹⁵⁶ or a problem, which is more exactly defined.¹⁵⁷ However, in Case T344/89 (GTE/Siliconnitride cutting tools)¹⁵⁸ where the patent related to a cutting tool, the EPO¹⁵⁹ held that any reformulation of the problem must have the basis in the original disclosure, especially statements as to the general purpose and character of the invention. It should be emphasised that objective evidence as to the problems, which the particular inventor was faced with, is disregarded when formulating the objective technical problem.¹⁶⁰

It is surprising that academic writers have not challenged the method of reformulating the objective technical problem. The problem-and-solution approach does after all substitute an artificial problem for one, which actually faced the inventor and further gives all prior art equal weight, irrespective of its credibility to the man skilled in the art. It should not be forgotten that eventhough the philosophy behind the problem and solution approach does not allow ex post facto analysis, identifying the closest prior art can only be done by hindsight. Formulating a new problem from the closest art selected with hindsight is in most cases not advantageous to the inventor.

A special situation, which falls outside the problem-and-solution approach, should be emphasised at this point. In a few cases the EPO is faced with a so-called “problem invention”, which means that the inventor has recognised an unknown problem. In such situations an inventive step is recognised in the mere formulation of the problem, irrespective of whether the solution to the problem is obvious. Since there was no particular problem to be determined, this situation falls outside the problem-and-solution approach. However, in most cases there is a particular problem to be solved.

Once the technical problem to be solved has been established, the question whether or not the claimed invention was obvious to a “person skilled in the art” has to be considered.¹⁶¹

¹⁵⁵ T132/84 (HUELS/Tetramethylpiperidone) [1986] E.P.O.R 303.

¹⁵⁶ T184/82(MOBIL/Poly (p-methylstyrene) articles) [1979-85] E.P.O.R:C:690.

¹⁵⁷ T162/86 (HOECHST/Plasmid pSG2) [1989] E.P.O.R 107.

¹⁵⁸ [1993] E.P.O.R 209.

¹⁵⁹ at 212-213.

¹⁶⁰ T24/81 (BASF/Metal refining) [1979-85] E.P.O.R B:354.

5.5 Person skilled in the art/part of the state of the art

The concept of the “person skilled in the art” has not been as fully developed by the EPO as has been done by the British courts. However, it has been declared that the person skilled in the art, is an ordinary practitioner aware of what was common general knowledge in the art at the relevant date. In a few cases the ordinary practitioner has however been regarded as a team of appropriate specialists.¹⁶²

Common general knowledge has been found to include handbooks and textbooks (in any language)¹⁶³ in the art but not patent specifications. He will also be deemed to have knowledge of neighbouring fields of technology but not more remote fields.¹⁶⁴ It should be emphasised in this context that if it is obvious to a person skilled in the particular art to consult a specialist in another field to solve a problem then that specialist will become the man skilled in the art. This was established in Case T32/81 GIVES-CAIL BABCOCK/Cleaning apparatus for conveyor belt),¹⁶⁵ where the question whether it was obvious to use glass fibre to replace components in conveyor-belt cleaning apparatus, arose. It was declared that the skilled man was the materials specialist and not the conveyor specialist.

It is normally regarded as part of the skill of the skilled man, to seek and recognise technical developments, which can be derived from simple combinations of documents. In *BASF/Metal refining* it was thus established that a process, which has been developed as a result of a need does not involve an inventive step if the need could have been readily met by an obvious combination of teachings from the state of the art.

It has been noted above under chapter 5.3 on what constitutes the “closest art”, that any source can be used as a starting point notwithstanding that it was obscure or temporary. Once the stage of the actual assessment of inventiveness has been reached the sources that the skilled man is supposed to have studied, is somewhat different.

¹⁶¹ G., Paterson, 1995, *ibid*, at 152-153; C.I.P.A., 1995, *ibid*, at 87-89, 92-94; P., Cole, Part I, *ibid*, at 218.

¹⁶² T 141/87 (BOSCH), September 29, 1988.

¹⁶³ T426/88 (LUCAS INDUSTRIES/Combustion engine), November 9, 1990.

¹⁶⁴ T176/84(MOEBIUS/Pencil sharpener) [1986] E.P.O.R 117.

After the specific problem or problems have been formulated using the primary source, the skilled man is assumed to search for secondary sources. For fairness to the inventor this search is guided by special selective considerations. This means that a chance occurrence or a temporarily available source might not be acceptable as the secondary source.¹⁶⁶

5.6 The assessment of inventive step

European patents are intended to have a sufficient standard to ensure that they are likely to be upheld in national courts under a law, which should be in harmony with the EPC. This means that the EPO is careful not to set a standard, which is too low.

Before analysing the criteria used by the EPO, it is important to emphasise that the EPO has adopted an effect-based problem-and-solution approach. In the EPO Guidelines it is thus stated that the technical problem means the aim and task of modifying or adapting the closest prior art to provide the technical effects that the invention provides over the closest art. Keeping this in mind will facilitate the understanding of the criteria used in the EPO.

5.6.1 Technical considerations

5.6.1.1 Introduction

Once the starting point in the prior art has been chosen and the objective technical problem has been formulated in accordance with the closest prior art, the question arises whether there was a secondary source, which disclosed or suggested obtaining the technical result, which distinguishes the invention from the starting point and thus solves the technical problem. This examination is usually not difficult since it is based on human activities and the technical effects disclosed in the prior art. Because the analysis is based on what the prior art, actually discloses, which is usually self-

¹⁶⁵ [1979-85] E.P.O.R:B:377.

¹⁶⁶ G., Tritton, *Intellectual property in Europe*, Sweet & Maxwell, 1996, at 62; G., Paterson, 1995, *ibid*, at 153-156; G., Paterson, *The European Patent system*, Sweet & Maxwell, 1992, at 430-435, 437-438; J., Pagenberg, "The Evaluation of the "Inventive Step" in the European Patent System-More objective standards needed, Part one", *I.I.C Vol. 9 No 1/1978*, at 16-17.

providing, expert evidence plays an insignificant role in the EPO. It is important to emphasise at this stage that the solution to the technical problem is identified in terms of the effect achieved. Depending on the character of the attainment, the technical problem could refer to a need to achieve the same kind of result (e.g. when the invention extends the range of choice by alternative means), a quantitatively improved result (e.g. a modified, partially different result) or a qualitative distinction (a different result) when compared to the closest art. This means that the effect need not be advantageous in practice, or superior to what was available. It must however be reproducible.

In order to fully comprehend the assessment that takes place it is important to understand the different types of effects that may arise depending on the kind of invention involved. Before turning to the actual technical assessment, the effect of a process and the effect of an article will therefore be examined.

5.6.1.2 The effect of a process

When the claimed invention refers to a process, (a method of preparation or use) it leads to a recognisable unique result. In Case T119/82 (EXXON/Gelation)¹⁶⁷ the EPO declared that the effect of a process manifests itself in the result and that this in for example chemical cases means the product with all its internal characteristics and consequences of its history of origin (e.g. quality, yield and economic value). This means that even if the product is substantially the same as that prepared according to the state of the art, it might be made available through the invention in a purer form, faster or in a higher yield than before.

It is important to understand that the product is not the solution of the problem, but only the effect of the claimed process. The product is thus not the invention itself and cannot therefore be claimed as such. The product can itself be patentable if it is a solution of a technical problem of its own.¹⁶⁸

¹⁶⁷ [1979-85] E.P.O.R B:566.

¹⁶⁸ G. Szabo, (1986), *ibid*, at 295-296.

5.6.1.3 The effect of an article

A process differs from articles in that it automatically provides a product as a result of the interaction of its constituents. Articles on the other hand need to be put in use and to interact with external entities in order to produce their problem-solving effect. Only in a few cases can articles be found to have a built-in capacity to provide an automatic effect like a process. However, the fact that articles are not total solutions to a problem does not mean that they do not deserve full patent protection. The problem, which usually manifests itself, is the need for a more efficient or less complicated device, a smaller size or better capacity. The claimed article will be seen to provide a solution to the problem by satisfying those needs.¹⁶⁹

5.6.1.4 The technical feature to be considered

In assessing whether an invention is obvious it is assumed that the claim is directed to the simultaneous application of all its features. This was established Case T175/84 (KABELMETAL/Combination claim)¹⁷⁰ where the patent was concerned with a line coupler characterised by a combination of features.

However, according to Case T37/82 (SIEMENS/Low tension switch)¹⁷¹ a feature in a combination can be considered if the inventor presents evidence that the feature contributes, independently or in conjunction with one or more of the other features, to the solution of the problem set in the description. This means that if a feature does not contribute to the solution of the technical problem, it cannot render an obvious invention inventive. Further, in Case T22/81(LUCAS/Ignition system)¹⁷² the inventor explained that certain features of his combination were not intended to provide an inventive step. The EPO in their judgement, declared that such features and any advantages which they give rise to can be disregarded when evaluating obviousness. The evaluation will thus in such situations only take place in respect of the remaining features.¹⁷³

¹⁶⁹ G. Szabo, (1986), *ibid*, at 296.

¹⁷⁰ [1989] E.P.O.R 181 at 183.

¹⁷¹ [1979-85] E.P.O.R:B:437.

¹⁷² [1979-85] E.P.O.R:B:348.

¹⁷³ G., Paterson,1995, *ibid*, at 154; G., Paterson,1992, *ibid*, at 432-433.

5.6.1.5 No pointer: feature disclosed for a different purpose

It has been established in Case T4/83(EXXON/Purification of sulphonic acids)¹⁷⁴ that the use of a known feature for a purpose, which is different from the one described in the closest art, may involve an inventive step. This is because the prior art can be said not to give any pointer to the claimed solution of the technical problem. The invention in the case in question was concerned with an improvement of a known purification process, which was featured in a prior art document. This document also described a test for confirming the desired result of the purification process. The EPO held that when the evaluation of obviousness is done on the basis of a single document, the purpose, which a known technical feature serves, might become crucial. Since the described test in this case served only to verify the desired results and gave no incentive to incorporate the features of the test in the purification process as a final step, the document was held not to give any pointer to the claimed solution.¹⁷⁵

5.6.1.6 Need for a series of steps

In a few cases it is necessary to proceed from the known art to the invention in several steps. In Case T113/82 (IBM/Recording apparatus)¹⁷⁶ the EPO established that such a situation might indeed be an indicator that an inventive step is present. This is, according to the EPO, especially so where the last decisive test step was not known from the prior art and thus not derivable therefrom, even though the step as such was a very simple one.¹⁷⁷

5.6.1.7 Technical progress

It is often believed that technical progress is a requirement for inventiveness under the EPC. This is however not the case. In Case T164/8(EISAI/Antihistamines)¹⁷⁸ where the patent related to compounds with remarkable pharmacological properties including high activity and low toxicity, the EPO emphasised that there was no such

¹⁷⁴ [1979-85] E.P.O.R:C:721.

¹⁷⁵ see also T292/85(GENENTECH I/Polypeptide expression) [1989] E.P.O.R 1; G., Paterson, 1995, *ibid*, at 155; G., Paterson, 1992, *ibid*, at 436-437.

¹⁷⁶ [1979-85] E.P.O.R:B:553.

¹⁷⁷ G., Paterson, 1995, *ibid*, at 156; G., Paterson, 1992, *ibid*, at 437.

criterion in addition to that of inventive step but that technical superiority may be indicative of an inventive step if it specifically relates to the solution of the problem arising in respect of the closest prior art.¹⁷⁹ Having established this, there is however no doubt that the EPO often regards the opposite situation, that is a lack of technical progress, as indicating a lack of inventive step. In case T22/82 (BASF/Bis-epoxy ethers)¹⁸⁰ for example the patent related to a mere structural difference from the prior art in a new chemical intermediate compound. The EPO declared that they could not find an inventive step in the absence of a valuable property resulting from the difference.

In this context it should be mentioned that the EPO has in a number of decisions relied upon unexpected progress compared to the closest prior art, as an indicator of an inventive step. In *BASF/Bis-epoxy ethers* the EPO declared that when an inventor sets himself the task of developing an advantageous new process for the preparation of a known and desired end product, the solution might be inventive if the advantageous result achieved is actually surprising. The same conclusion was reached by the EPO in Case T20/83 (CIBA-GEIGY/Benzothiopyran derivatives)¹⁸¹ where the modifications to the molecule of the claimed compounds had an effect, which was considered both new and surprising.¹⁸²

5.6.1.8 Additional unexpected (bonus) effect

A situation may arise where the invention in addition to the expected improved properties, show an unexpected bonus effect. The EPO has established that if the expected improved properties were part of a routine development the invention may be considered lacking an inventive step irrespective of the extra, unforeseen effect. A good example of this is Case T21/81 (ALLEN-BRADLEY/Electro-magnetically operated switch)¹⁸³ where the patent in suit was an electromagnetic device. The modified construction that had taken place compared to the closest prior art was

¹⁷⁸ [1987] E.P.O.R 205.

¹⁷⁹ at 210; see also T181/82 (CIBA-GEIGY/Spiro compounds) [1979-85] E.P.O.R :C:672.

¹⁸⁰ [1979-85] E.P.O.R:B:414.

¹⁸¹ [1979-85] E.P.O.R:C:746.

¹⁸² see also T119/82(EXXON/Gelation) [1979-85] E.P.O.R:B:566; T155/85 (PHILLIPS PETROLEUM/Passivation of catalyst) [1988] 164; G., Paterson, 1995, *ibid*, at 156-157; G, Paterson, 1992, *ibid*, at 438-440, 442-443.

regarded by the EPO as part of the routine development by a skilled person faced with solving well-known problems within the state of the art. The EPO further explained that the extra effect obtained could not render such an invention non-obvious. This is especially the case where a lack of alternatives leads to a “one-way-street” situation with predictable advantages and a bonus effect. In Case T192/82 (BAYER/Moulding compositions)¹⁸⁴ the patent related to improved moulding compositions. Such compositions fell within the general scope of the closest prior art document. It was established that there was a lack of suitable materials apart from the closest prior art and that it had created a “one-way” street situation leading to predictable advantages, which remained obvious despite the existence of some unexpected bonus effects.

These cases clearly show that the EPO is anxious not to restrict the freedom of a skilled person to use that which is already obvious from the state of the art.¹⁸⁵

5.6.1.9 The “could/would” test

There is a large body of case law from the EPO, which recognises the so-called “could/would” test. This approach means that the EPO considers whether a skilled person would have arrived at the claimed solution to a problem as compared to whether he could have done so. The evaluation of inventiveness thus depends on the extent to which a skilled man would have been technically motivated towards the invention.

The main authority for this approach is Case T2/83 (RIDER/Simethicone tablet)¹⁸⁶ where it was declared that the proper question to ask the inventor, who had supplemented a known layered tablet by the provision of a barrier, was not whether the skilled man could have provided the barrier but whether he would have done so. The EPO was of the opinion that because the known tablet was a satisfactory answer to the problem, the addition of a barrier would have seemed superfluous and wasteful. As a result it was held that the skilled man would not have arrived at the invention. The decision in this case has been followed in several later cases. In Case T265/84

¹⁸³ [1979-85] E.P.O.R:B:342.

¹⁸⁴ [1979-85] E.P.O.R:C:705.

¹⁸⁵ G., Paterson, 1995, *ibid*, at 157; G., Paterson, 1992, *ibid*, at 443-444.

(ALLIED/Cobalt foils)¹⁸⁷ for example where the patent related to metal articles brazed with glossy cobalt foils, the EPO¹⁸⁸ explained that the skilled man could have found variants in the areas disclosed by the prior art. However, he had no good reason to move in that direction making it probable that he would not have done so.

The “could/would” test was further developed in Case T274/87 (PHILLIPS/Cracking catalyst).¹⁸⁹ The patent in suit was directed to the combined presence of antimony and tin in a cracking catalyst as passivants for contaminating metals. The EPO¹⁹⁰ established that an inventive step could be recognised where there are many possibilities and the claimed solution is not the first choice. Similarly in Case T253/85 (AKZO/Dry jet-wet spinning)¹⁹¹ it was declared that where there is an established trend in the art contrary to further use of the idea in the field in question, an inventive step may be present because the skilled man would not have arrived at the invention even if he could have.

It can without a doubt be argued that the would/could test constitutes the most frequently occurring test in the EPO.¹⁹²

5.6.2 Commercial success

It could be argued that a distinctive feature of the problem and solution approach is its insistence that questions based on the technology disclosed in the patent and the cited prior art should be given prominence and that circumstantial evidence, should be given little weight. The EPO has especially viewed evidence of commercial success with suspicion raising the point that commercial success may well be due to other factors than the actual inventiveness of the solution to the problem which the art faced. In Case T270/84 (ICI/Fusecord)¹⁹³ the patent related to a method and apparatus

¹⁸⁶ [1979-85] E.P.O.R:C:715.

¹⁸⁷ [1987] E.P.O.R 193.

¹⁸⁸ at 196-197; see also T223/84(ALBRIGHT & WILSON/Extraction of uranium) [1986] E.P.O.R 66; T255/85 (BEECHAM/Antacid compositions) [1987] E.P.O.R 351; T392/86(MOBIL/Catalyst) [1988] E.P.O.R 178.

¹⁸⁹ [1989] E.P.O.R 207.

¹⁹⁰ at 212.

¹⁹¹ [1987] E.P.O.R 198, at 203-204.

¹⁹² G., Paterson, 1995, *ibid*, at 158; G., Paterson, 1992, *ibid*, at 444-445.

¹⁹³ [1987] E.P.O.R 357.

for the production of explosive fusecord. The invention was a commercial success but the EPO¹⁹⁴ expressed its view that there was no evidence that the commercial success reflected the value of the invention as opposed to market monopoly, advertisement policy or good salesmanship.

The EPO has thus decided to take a much more careful approach towards commercial success than the British courts have done in the past. The same debate as to factors such as marketing, price etc influencing commercial success have featured in the EPO but with a much stronger opinion against allowing such evidence. However, the EPO has in several cases taken commercial success into account when evaluating obviousness. In Case T69/89 (SURGIKOS/disinfection)¹⁹⁵ the patent was concerned with a method of disinfecting a spillage. The EPO¹⁹⁶ was prepared to accept evidence of commercial success as an indicator of inventiveness because the adoption of the invention in hospitals had been uninfluenced by other factors.

It should be emphasised that evidence of commercial success can play a role only if it can be shown that the success derives from the claimed solution. This view has also formed part of the decisions in the United Kingdom as was seen in the case of *Martin*. The EPO has further occasionally used commercial success as an additional indication of unobviousness.¹⁹⁷ However, due to the technical assessment that takes place under the EPC, evidence of commercial success does and will not in the future play a major role in the assessment of obviousness.¹⁹⁸

5.6.3 Long-felt want

The EPO has occasionally recognised that it may be an indication of an inventive step if there has been a long-felt want of an improvement and the art has been inactive for a long period. In Case T271/84 (AIR PRODUCTS/Removal of hydrogensulphide and carbonyl sulphide)¹⁹⁹ the patent in suit was directed to a multi-stage chemical engineering process. The challenger of the patent had been in full possession of all

¹⁹⁴ at 363.

¹⁹⁵ [1990] E.P.O.R 632.

¹⁹⁶ at 638.

¹⁹⁷ T106/84(MICHAELSEN/Packing machine) [1979-85] E.P.O.R C: 959.

¹⁹⁸ G., Paterson, 1995, *ibid*, at 159; G., Paterson, 1992, *ibid*, at 447.

relevant knowledge for some years prior to the date of the patent in suit. They had however not thought of advancing from their own process in the way of the claimed invention. This was taken into account by the EPO when finding that the claimed invention involved an inventive step.²⁰⁰

What the EPO has in fact recognised is that if the invention was obvious then why was the solution not reached before? However, an argument along these lines, was not allowed in *BASF/Metal refining*. It could thus be said that the EPO does not take a fully consistent approach towards the criterion of long-felt want. Usually and due to the fact that the EPO is dealing with a field of technical interest the time-factor is used as corroboration of a finding of inventive step, which has already been deducted on the basis of other reasoning. In *BASF/Metal refining* the EPO thus explained that the overall picture of the art might show that an inventive step is involved, without however leading to the compelling conclusion that inventive step must generally follow from this situation.²⁰¹

5.6.4 Overcoming a prejudice

The “prejudice” criterion should be mentioned in this context, since the EPO has occasionally seen it as an indication of an inventive step. In T18/81 (SOLVAY/Olefin polymers)²⁰² the patent in suit was a method involving water cooling of an extruded film. There was a prejudice against this invention in the form of a manual stating that air should be used for such cooling since water was disadvantageous. The EPO held that the overcoming of this prejudice was a significant indication of inventive step. Although the existence of a prejudice in the art may be an indication that an invention was required to overcome it, the EPO has declared that those who wish to rely on such a prejudice have the burden of demonstrating that it did indeed exist.²⁰³ The EPO has further explained in Case T19/81 (ROHEM/Film Coating)²⁰⁴ that where a patent specification is used to support a prejudice it must be born in mind that it expresses the view of the drafter. Such information should therefore be accorded general

¹⁹⁹ [1987] E.P.O.R 23, at 28-29.

²⁰⁰ see also T109/82 (BOSCH/Hearing aid) [1979-85] E.P.O.R:B.553.

²⁰¹ G., Paterson, 1995, *ibid*, at 158; G., Paterson, 1992, *ibid*, at 445-446.

²⁰² T18/81 [1979-85] E.P.O.R B:325.

²⁰³ T119/82 (EXXON/Gelation) [1979-85] E.P.O.R:B:566.

validity only where further corroboration is available. The “prejudice” criterion should hence be treated carefully.²⁰⁵

5.6.5 Conclusion

Having analysed the criteria used in the EPO, it has emerged that the problem-and-solution approach has been recognised as mandatory. Circumstantial evidence, such as commercial success and long-felt want does feature as criteria but only rarely and usually only in combination with other more persuasive factors. Consistency demands legal principles, which inventors can rely on. The EPO has chosen the problem-and-solution approach as the main principle for the evaluation of inventiveness and this has led to a substantially technical assessment.

6. Are the differences of substance or merely in judicial rhetoric?

Having analysed the criteria used in the British courts to evaluate inventiveness and the problem-and-solution approach used by the EPO, it is worth examining whether the differences, which on the face seem apparent, are in fact of substance or merely in judicial rhetoric. It has been seen that the problem-and-solution approach is effect-based and substantially a technical assessment. In the United Kingdom however, only one of the criteria introduced by the courts, refers to technical considerations. While the EPO has stressed the importance of consistency and the use of one test, the British courts seem to have favoured several tests and pragmatism, taking into account all the surrounding circumstances. This has resulted in the EPO developing legal working principles usable irrespective of the particular facts of the case, while the British courts have been careful to emphasise that the evaluation of inventiveness is one of fact and therefore not capable of producing legal principles. What do these differences really mean?

It is true that the British courts have not adopted the problem-and-solution approach in explicit terms. In a few cases the framework of the problem-and-solution approach has however been used to determine the issue to be decided. The clearest example of

²⁰⁴ [1979-85] E.P.O.R:B:330.

²⁰⁵ G., Paterson, 1995, *ibid*, at 158-159; G., Paterson, 1992, *ibid*, at 446.

such a case is *Technograph* where the problem was identified as being that of a method, which required a good deal of skill and care, a considerable time and funds.²⁰⁶ It is perhaps harder to find cases, which have used an effect-based evaluation on a more substantial level. However, there are several groups of cases, which I believe have brought the evaluation of inventiveness closer to the technical assessment that takes place in the EPO.

First, the “right to work” test, which has been part of British patent law for a long period of time, has been recognised not to be of assistance when a small difference is seen to produce a great effect. As has been discussed above there are two cases, which demonstrate this clearly, *Fichera* and *PLG Research*. In these cases the court decided to acknowledge that it would be wrong to treat dismissively apparently small changes to seemingly simple structures. They thus used a reasoning, which was effect-based and technical in nature.

Secondly, there is a group of cases, which could be said to be based on the technical merits of the invention. As has been seen above the case of *Samuel Parkes* could be interpreted as having been decided in favour of the inventor because the invention was superior to what had gone before. In *Lucas* the court further declared that their decision was based on the surer grounds that the invention represented a very substantial step forward. The same kind of reasoning can be found in *Fichera* and *Beecham*, where the court apart from recognising that a small effect can sometimes fall outside the “right to work” test also recognised that the effect brought with it a technical advantage. Finally in *Mölnlycke* it was apparent that it was the technical differences and their consequential effects that were decisive.

It is indeed true that these cases show the willingness of the courts to make a technical assessment of inventiveness. However, it should be noted that the courts have in all of these cases, emphasised the technical progress or superiority of the invention compared to the prior art. While technical progress is not a requirement in the EPO, it seems as though the British courts have been keen to emphasise such a progress in

²⁰⁶ at 353; see also *Longbottom v. Shaw* [1891] 8 R.P.C 333; *Benmax v. Austin Motor Company* [1955] 72 R.P.C 39; *Killick v. Pye* [1968] R.P.C 366; *Andrew Master Hones v. Cruikshank & Fairweather* [1981] R.P.C 389.

order to support an invention. In the EPO it has been established that the effect need not be new at all, let alone superior with respect to the state of the art. It is perfectly justifiable to provide for example a washing powder or a dye with exactly the same capabilities as old articles had before (provision of an alternative).

Thirdly, the British courts have occasionally (e.g. *Mutoh*) recognised that it is inventive to find a new problem. As has been seen, the EPO has also established that such “problem inventions” are inventive even if the problem is then solved by an obvious solution thereto.

It is thus true to say that the British courts have on several occasions recognised the importance of an invention’s technical merits and that they use the same approach towards “problem inventions”. However, what should not be forgotten is that there is a fundamental difference in the philosophy behind the evaluation of inventiveness in the two systems. The EPO has once and for all decided on one approach to be used in order to promote consistency. It has thus been recognised that the question of obviousness is more than a question of fact. It is also a question from which the decisive body can develop legal working principles. The British courts have on the other hand on several occasions emphasised that inventiveness is not only a question of fact resulting in the courts having to take all the surrounding facts into account when reaching a decision but also one from which no legal principles can be drawn. Hence, because a fair decision demands all circumstances to be taken into account (commercial success as well as technical effects) no legal principles can be formed. It is true that the British courts have indeed regarded, for example commercial success with suspicion but not at the same level as the EPO. The EPO has made its reluctance to take into account circumstantial evidence such as commercial success and long-felt want, very clear. It is normally only in combination with other more persuasive evidence that they take such evidence into account.

The only decision, which may mean that the British courts have indeed taken it upon themselves move closer towards the problem-and-solution approach, is *Biogen*. In this case the plaintiff embarked upon a series of experiments using known methods to find recombinant DNA molecules. In his judgement Hoffman LJ may have decided that

the first stage of the test requires a problem and solution analysis. Hoffman LJ declared that

*A proper statement of the inventive concept needs to include some express or implied reference to the problem, which it required the invention to overcome.*²⁰⁷

It could be said that this observation is central to Hoffman's LJ reasoning on inventive step. The question that arises however, is whether he was stating a rule of law or merely a logical approach to the facts before him. It could easily be argued against the view that the decision has resulted in a rule of law since the British courts have referred to technical problems in the past, without making the problem-and-solution approach mandatory. If Hoffman LJ had intended to form a rule of law it would have been signalled in a more positive language. However, it could also be argued that *Biogen* was the first case involving issues of inventive step to have been considered by the House of Lords under the Patents Act 1977 and that the statement because of its generality and because of the words "proper" and "needs" has the sound of a rule of law. The statement has however not become highly persuasive.

It is at this stage difficult to say whether the British courts are in fact moving towards the approach taken by the EPO. Whether the British courts ought to make this move in light of the fact that the Patents Act 1977 is based on the EPC and in fact contains the same wording, will be discussed in the next chapter.

7. Should the British courts adopt the problem-and-solution approach?

The question whether the British courts ought to if not adopt the problem-and-solution approach, at least adopt an effect-based approach, is not entirely easy to answer. To facilitate the attempt of answering this question, I believe that it should be broken down into two separate entities. First, should the British courts decide to apply one test for the evaluation of inventiveness? Secondly, should the British courts apply a test, which focuses on the technical effect of the invention?

7.1 One test?

The British courts have on several occasions established that the question whether an invention involves an inventive step, is one of fact. This acknowledgement has further resulted in the courts emphasising that all the facts of a particular case must be taken into account, when evaluating inventiveness. They have thus not been willing to disregard certain facts in order to produce more workable legal principles to be applied in the area as a whole. It could be argued that the courts have by emphasising that all surrounding circumstances should be taken into account, made certain that a fair decision is given. This has in fact been argued in an article by A.W. White and J.C. Warden.²⁰⁸ They emphasise that for administrative convenience, the question whether an invention involves an inventive step may come to be decided by some philosophical metre-stick and not by a pragmatic approach based on full consideration of all the facts. They conclude that this can only lead to the patent system becoming more divorced from reality.

An argument along the lines of bringing fairness into the evaluation for the benefit of the inventor has its merits. However, it could also be argued that taking all surrounding circumstances into account and thus using several tests to do so, results in legal uncertainty. The question is whether an inventor who contemplates applying for a patent, benefits from such uncertainty? Would he really regard it as fair, not being able to predict the outcome of such an evaluation? Could it not be said that the evaluation becomes more “fair” when the inventor knows that the court must consistently apply a certain test, instead of being exposed to particular judges personal opinion as to what test should be applied in this particular case?

It could thus be strongly argued that taking all surrounding facts into account does not inevitably promote a fair decision. Further, legal uncertainty may lead to valuable R&D decreasing. R&D swallows a substantial amount of time, money, energy and highly qualified staff and this is so in high tech areas as well as other areas. If those who are willing to use these scarce resources for the purpose of research are not

²⁰⁷ at 45.

²⁰⁸ “The British Approach to Obviousness”, Annual of Industrial Property Law 1977 (J.C. Warden ed.,1978).

rewarded, they might not be willing to invest in this kind of activity the future. This will not benefit society as a whole. It means that society will lose the benefit of new products, enhancements to pre-existing products and improved processes for performing activities in the areas where society is perhaps in most need of it. It is simply not worth investing time, money, energy etc in something you cannot predict the outcome of.

Finally, it should be emphasised that using several criteria to evaluate inventiveness, which leads to legal uncertainty and further to unfair decisions and a decrease in inventive activity, may also increase costs. This is because legal uncertainty in this area results in a large amount of disputes, which go as far as the courts. Both parties to a conflict may naturally as a result of the many possible tests available to evaluate inventiveness, feel that they have a fair chance to succeed. This means that both parties will be keen to go to court to get the issue tried and that they will further decide to go as far as the House of Lords if possible. The courts are as a result swamped with disputes that ought to have been kept out of court and this naturally results in increased costs. This is not an economically efficient system.

In conclusion it could therefore be strongly argued that for the sake of a coherent system, legal certainty and an economically efficient society, the courts should apply but one test.

7.2 A technical assessment?

Once it has been decided that one test ought to be used, the more difficult question of choosing the decisive test or criterion to be used, arises. In a society like ours where highly qualified teams compete to solve similar problems, it is important that the granting of a wide patent to one of them can be clearly justified. The other competitors should not be put out of business upon loose assumptions that for example the patentee must have invented something important because it captured a striking market share or because it was more than a small extension of the prior art.

With this as background the argument that an effect-based, technical assessment ought to be made, is a strong one. The reason for this is first, simply because it would

bring the United Kingdom closer to the problem-and-solution approach used by EPO. As has been explained above, a distinctive feature of this approach is its insistence that questions based on the technology disclosed in the patent in issue and cited prior art sources should be given prominence and that evidence of commercial success or failure of others to arrive at the invention, should be given little weight. The problem-and-solution approach is effect-based in that technical problem means the aim and the task of modifying the prior art to provide the technical effects that the invention provides over the prior art. Bringing the United Kingdom closer to this approach is valuable because it would mean a contribution to the harmonisation of the patent rules within Europe. Harmonised rules bring about an even greater legal certainty, which is valuable for inventors. They will enjoy the opportunity of predicting the future of their inventions, not having to occupy themselves with the problem of differences in national rules. In other words legal certainty will promote inventive activity and this is valuable for society as a whole.

Secondly, apart from the fact that it brings the United Kingdom closer to the EPO, the merit of using a technical effect as decisive, is that it is, as P. Cole puts it in his article²⁰⁹

*based on the solid foundation of the underlying logical structure of the patent claims.*²¹⁰

What makes an invention valuable is the result. The Mölnlycke diaper was valued as an invention because it provided a good way for mothers to open the tape on the diaper, have a look and then re-fasten it. This is why an effect-based approach is advisable. Further, we have seen from my critical analysis of the criteria used by the British courts, that they give rise to various problems. Two of the more serious problems are those of unpredictability and legal uncertainty. Using an objective effect-based approach will however lead to a considerable power to predict the outcome, without requiring lengthy considerations of purely circumstantial factors. This is because the technical assessment made according to the problem-and-solution approach is not a difficult one since it is based on the technical effect actually disclosed in the prior art. For example, expert evidence, a frequent feature in the

²⁰⁹ P., Cole, Part II, *ibid.*

British evaluation does not play a significant role because the analysis is based on what the prior art *discloses*, which especially when the prior art is in documentary form, is usually self-providing. Predictability and legal certainty is important in order to maintain an economically efficient society. For this reason the invention's achievement of a technical effect should be the decisive criterion. Focusing on this criterion will lead to legal certainty, which in turn will promote R&D activity. Promoting inventive activity benefits society in the long term and leads to an economically efficient society.

It is true that the problem-and-solution approach has certain problems in common with the problems experienced by the British courts. For example, the concepts of "person skilled in the art" and "part of the state of the art" have had to be developed just as much under the EPC as under British law. The problem-and-solution approach further gives rise to certain problems of its own e.g. the problem of which document that should be regarded as the closest prior art and the question whether the problem to be solved should be reformulated. However, if the British courts were to focus all their energy on developing the problem-and-solution approach or possibly their own effect-based variety, the problems seen to arise from the chosen approach would perhaps be more easily overcome. The alternative is to spread the energy in equal amounts over the different tests, all of which have their own distinctive problems.

I am of the opinion that the use in the United Kingdom of tests, which differ in substance from the problem-and-solution approach is becoming increasingly difficult to defend. I strongly believe that the British courts, inventors and inventive activity in general would benefit from adopting a mandatory inventiveness test along the lines of the problem-and-solution approach used by the EPO.

²¹⁰ P., Cole, Part II, *ibid*, at 271.

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