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IN THE HIGH COURT OF JUSTICE
CHANCERY DIVISION
PATENTS COURT

Royal Courts of Justice
Strand, London, WC2A 2LL

Date: 21 July 2005

Before :

Mr PETER PRESCOTT QC (sitting as a Deputy Judge)

IN THE MATTER OF Patent Applications GB 0226884.3 and 0419317.3 by CFPH L.L.C.

Mr Douglas Campbell (instructed by **Kilburn & Strode**) for the Appellants

Mr Colin Birss (instructed by **The Treasury Solicitor**) for the Comptroller-General of Patents

Hearing date : 17 March 2005

JUDGMENT

Mr Peter Prescott QC :

I. INTRODUCTION

1. What is an 'invention'? That is what this case is about.
2. Some kinds of ideas cannot be patented at all – even if new and very ingenious. For example, you could not patent the plot of a detective story. It would not be considered to be an 'invention' under patent law. Nor could J.S. Bach have patented his *Two-Part Inventions*, and for much the same reason. It goes to show that patent law uses the word 'invention' in a rather special way.
3. Indeed it uses it in several, completely different, ways. You have to work out the meaning from the context¹.
 - (a) Sometimes it is meant that an idea is not obvious (is clever enough to deserve patent protection): as where Tomlin J referred to the scintilla of *invention* required to support a patent², or as where Lord Herschell warned of the danger of being misled by the very simplicity of an apparatus “into the belief that no *invention* was needed to produce it”³. Modern legislation calls this *inventive step* and we can avoid confusion by using that phrase.
 - (b) At other times 'invention' is referring to what the patentee himself claims it to be (he may be right, he may be wrong). For example, when a judge or hearing officer says: “I hold that the *invention* of claim 1 was not new”. A striking example is section 72(1)(a) of the Patents Act 1977, which says that a patent for an invention may be revoked if “the *invention* is not a patentable invention”.
4. At still other times, however, the word 'invention' refers to the kind of idea that can be patented at all. It is in that sense that your clever detective story plot is not 'an *invention*'. And it is with that sense that our case is connected.
5. Often, the law is easy to apply. It is clear that you can patent a new and non-obvious medicine or mousetrap. But it is just as clear that you cannot patent a

¹ *British United Shoe Machinery Co v. Fussell & Sons* 25 RPC 631, 651, per Fletcher-Moulton LJ.

² *Samuel Parkes & Co Ltd v. Cocker Bros Ltd* 46 RPC 241, 248.

³ *Siddell v. Vickers & Sons Ltd* 7 RPC 292, 304.

new and non-obvious tax-efficiency scheme. That is excluded subject-matter. The problem arises when someone wants to patent an idea that is a hybrid, or mixture of the two: excluded and non-excluded subject-matter.

6. This is an appeal from a decision of Mr H Jones, Deputy Director acting for the Comptroller-General of Patents, dated 14 December 2004. He rejected two patent applications on the ground that they were not for 'inventions', but only for business methods. It is a controversial topic in patent law. For, nearly every time the problem comes up, you will find a business method that is mixed together with what is technology. A typical instance is an automatic machine that is set up to carry out a business method.
7. In order to decide whether an idea of that sort is patentable the UK Patent Office does not use the same reasoning as the European Patent Office. Even though they are working under what is essentially the same legislation. That is an important point raised by this appeal. The Appellants, Mr Douglas Campbell their counsel, and Messrs Kilburn & Strode their patent attorneys have performed a public service by raising it.
8. Mr Douglas Campbell argued that our Patent Office ought to employ the reasoning that is used by the European Patent Office. Mr Colin Birss, who appeared for the Patent Office, argued that they should be allowed to continue as before. He said that it normally leads to the same result anyway. I shall examine the reasoning, and the merits of those arguments, later in this judgment.

II. LIFTING THE CARPET

9. What is an 'invention' (in the sense I am now concerned with) is a topic bedevilled by verbal formulae – and by the sweeping of problems under the carpet. So, before I go any further I want to bring some of those problems out into the light of day.
10. But first: does it really matter? Is it merely a sterile argument about the meaning of words? To which I answer that whoever controls the meaning of 'invention' controls what can be patented and hence an important aspect of industrial policy. There can be but one justification for having a patent system,

and that is that it is good for the people of the country. If the patenting of certain things does more harm than good, it matters. Patents that are wrongly granted can be very expensive to challenge and may deter small and medium enterprises.

‘Technical’

11. At the risk of some inaccuracy, patents are supposed to be granted for non-obvious advances in technology. I said “at the risk of some inaccuracy”. We sense that we know ‘technology’ when we see it. And no doubt that is correct, most of the time.
12. But it is not correct all of the time. Therein lies the delusion. You can prove that for yourself by trying to find a definition of ‘technology’ that everybody can agree on. The more you try, the more you will discover what a horribly imprecise concept it is. (Would it cover an astro-navigation chart?⁴ Naval tactics?⁵ Double-entry bookkeeping? The phonetic alphabet?⁶) Many have tried to frame an acceptable definition, but to the best of my knowledge none have succeeded⁷. It is like the equally vexing question, “What is Art?”. The hard truth is this: concepts of that sort have no existence, and words of that sort have no meaning, except by human convention; but human beings are hopelessly in disagreement at the margin. And it is, precisely, at the margin of uncertainty that cases come up for decision.
13. The same goes for the cognate word ‘technical’. A number of surveys in the context of patenting have shown that, not only is there no agreement about the meaning of the word, but that most informed respondents agree that “*trying to define the words ‘technical’ or ‘technology’ is a dead-end*”⁸. That ‘technical’ is vague has implicitly been recognised in our courts too. For example, in *Gale’s Application* [1991] RPC 305, 328 Nicholls LJ said that Mr Gale’s

⁴ Patent refused under the 1949 Act: *Kelvin & Hughes’ Application* 71 RPC 103.

⁵ Refused under the 1907 Act: *F’s Application* 37 RPC 109.

⁶ Compare *Pitman’s Application* [1969] RPC 646 (patent granted under 1949 Act for printed sheet employing typography that distinguished stress, vowel length and inflection, for use in teaching foreign languages).

⁷ The *Concise Oxford Dictionary* definition is at first sight plausible, but it is circular. “The study or use of the mechanical arts and applied sciences”. But what are the “applied sciences”? Technology.

⁸ Maria Alessandra Rossi, 2005. “Software Patents: A Closer Look at the European Commission’s Proposal”, esp. at 25-26 (*Siena Memos and Papers in Law and Economics* n.30, Università di Siena).

algorithm did not solve a 'technical' problem lying within the computer. He continued:

I confess to having difficulty in identifying clearly the boundary line between what is and what is not a technical problem for this purpose. That, at least to some extent, may well be no more than a reflection of my lack of expertise in this field.

But for my part I think Nicholls LJ was too modest. I believe his difficulty arose, not through lack of expertise, but because of the inherent vagueness of the concept itself. In *Fujitsu Limited's Application* [1997] EWCA Civ 1174, [1997] RPC 608 Aldous LJ said:

I, like Nicholls LJ, have difficulty in identifying clearly the boundary line between what is and what is not a technical contribution.

Likewise the German Federal Court of Justice in XZB 15/98, "Sprachanalyseeinrichtung", 11 May 2000.

14. I mention this near the outset of this judgment because it is important. If you look at the case law on the subject, both here and in Munich, you will find many references to "technical contribution", "technical result", and so on, being touchstones by which these cases are decided. The use of the word 'technical' as a short-hand expression in order to identify patentable subject-matter is often convenient. But it should be remembered that it was not used by the framers of the Patents Act 1977 or the European Patent Convention when they wanted to tell us what is or is not an 'invention'. In any case the word 'technical' is not a solution. It is merely a restatement of the problem in different and more imprecise language. I am not claiming that it is wrong to decide cases with reference to the word 'technical'. It happens all the time. What I am saying is that it is not a panacea. It is a useful servant but a dangerous master.

'Invention' Cannot Be Defined

15. How, then, does the law define what is an 'invention'? The answer is that nobody has ever come up with a satisfactory, all-embracing definition and I do not suppose anybody will.
16. But how can that be so? It is because we are dealing with a rather peculiar branch of human knowledge. First, what is an 'invention' is no more than a

convention of human culture. Secondly, it is about legislating for ideas that have not yet been thought of and which, perhaps, at present, *cannot be conceived*. When you stop to think about it, it is rather odd. I want to stress this too at the outset and to draw attention to the rather unusual nature of this part of the law.

17. By its very nature, therefore, the subject cannot be reduced to a precise verbal formula. It is, indeed, something of a moving target, because the progress of technology continues apace. That was recognised by a very strong High Court of Australia (Dixon CJ, Kitto and Windeyer JJ) in *NRDC's Application* rep. [1961] RPC at 162⁹. After pointing out that it was “a field which already, in 1623, was excitingly unpredictable”, their Honours said:

To attempt to place upon the idea the fetters of an exact verbal formula could never have been sound. It would be unsound to the point of folly to attempt to do so now, when science has made such advances ...

Exclusions

18. Therefore, in telling us about patentable inventions the Patents Act 1977 does not try to define what is an ‘invention’. Instead, it contains a list of things that are *not* inventions. I have already hinted at one exclusion: ‘a literary, dramatic, musical or artistic work’ – which does for your detective story or, for that matter, J.S. Bach.
19. Now, there are several problems about defining ‘invention’ by what it is *not*. The first is that the list is not closed¹⁰, and perhaps never can be¹¹. That is not so serious in practice, because nearly all instances likely to arise have already come to notice in the past – in general terms only, of course – and so can be mentioned in the list¹². So let me, merely for the sake of brevity, call something

⁹ Cited with approval by Lord Parker CJ in *Swift's Application* [1962] RPC 37, 44.

¹⁰ Thus section 1(2) of the Act says that ‘the following (*among other things*) are not inventions for the purposes of this Act ...’

¹¹ A probable example that is not on the list is a mere collocation (the use of two devices, known separately, in such a manner that they do not interact): see *Sabaf SpA v. MFI Furniture Centre Ltd* [2004] UKHL 45. Mr T.A. Blanco White (*Patents for Inventions*, 4th ed., 1974, §1-210), rightly in my view, classified such cases under the rubric ‘not a manner of new manufacture’, and not ‘obviousness’, pointing out that the objection was often taken by the Patent Office at a time when obviousness was not an objection available to it. In *Sabaf* it was pleaded as a case of obviousness, requiring no small feat of mental gymnastics on the part of the courts who heard it.

¹² *Biogen Inc v. Medeva plc* [1997] RPC 1, 31, 41, H.L.

that is on the list of forbidden items an 'exclusion', and everything else 'technology' – admitting the approximation at this stage.

Hybrids

20. A more difficult problem is that an idea may consist partly of 'technology' and partly of an 'exclusion'. A mixture, or dual thing. Now the problem is this. When deciding if such an idea counts as an invention, what do you do? Do you ignore the part of the idea that is an exclusion – censor it out of your mind? I do not believe that can be correct, or not so in all cases, anyway. Later in this judgment I shall try to show why I think so.

Items Are Excluded For Differing Reasons

21. When we come to look at the list of excluded items, which we shall do in a moment, and if we pay careful attention, we can notice that they are like a miscellaneous rag-bag. Except superficially, they do not constitute what logicians call a genus, or logical class. Indeed I believe that they were not all excluded for the same reason. On the contrary, they were excluded for policy reasons; but the policy may not be at all the same in each case, as I shall try to show. If that is right it would be dangerous to adopt reasoning that was applied to one excluded item and blindly carry it over to a different item.

III. THE LEGISLATION

22. In our country the exclusions are set forth in the Patents Act 1977, sections 1 and 4. But it would be a great mistake to construe these as if they formed part of a traditional Act of Parliament, to be interpreted according to English canons, because they are intended to implement Article 54 of the European Patent Convention. The Act says so. But the principles according to which international conventions are to be interpreted are very different. So we may as well go straight to the horse's mouth.
23. It was put rather more strongly by the Court of Appeal in *Markem Corporation v. Zipher Ltd* [2005] EWCA Civ 267 at paragraph 94.

In a peculiarly cack-handed way the draftsman chose to re-number and re-write some of these [provisions of the Convention] and then say, in s.130(7) in effect that his re-writing does not count – that the relevant provision is 'so framed as to have, as nearly as practicable, the same effect in the UK as it has

in the EPC'. No one has ever identified any difference in meaning between a 1977 Act provision and the meaning of a corresponding provision of the EPC and we do not suppose anyone ever will.

24. Article 52 of the Convention reads as follows:

Patentable inventions

- (1) European patents shall be granted for any inventions which are susceptible of industrial application, which are new and which involve an inventive step.
- (2) The following in particular shall not be regarded as inventions within the meaning of paragraph 1:
 - (a) **discoveries, scientific theories and mathematical methods;**
 - (b) **aesthetic creations;**
 - (c) schemes, rules and methods for **performing mental acts, playing games or doing business, and programs for computers;**
 - (d) **presentations of information.**
- (3) The provisions of paragraph 2 shall exclude patentability of the subject-matter or activities referred to in that provision **only to the extent** to which a European patent application or European patent relates to such subject-matter or activities **as such**.
- (4) Methods for treatment of the human or animal body by **surgery or therapy** and **diagnostic methods** practised on the human or animal body shall not be regarded as inventions which are susceptible of industrial application within the meaning of paragraph 1. This provision shall not apply to products, in particular substances or compositions, for use in any of these methods.

Article 56 explains that that 'inventive step' means not obvious to a person skilled in the art.

'As such'

25. Article 52(3) indicates that a subject-matter is excluded 'only to the extent' that a patent relates to it 'as such'. This is confusing. In the past it has led some people to think that you should be able to patent any new, non-obvious idea, so long as what is claimed as the invention does not consist *only* of excluded subject-matter. According to that reasoning you could patent an excluded item e.g. a computer program by the formal device of claiming some physical

artefact (e.g. “A magnetic disk in which my program is stored”, or “A computer when operating under the instructions of my program”). And indeed if it were just a question of interpreting Article 52(3) as if it were an Act of Parliament, they might have been right. However, it is not an Act of Parliament, and they were not right.

International Conventions Are To Be Given a Purposive Interpretation

26. British Acts of Parliament are written by professional parliamentary draftsmen according to certain well-understood semantic conventions, in principle allowing meaning to be expressed tightly. In contrast an international convention such as the European Patent Convention may be drafted by a committee not all of whose members speak the same mother-tongue and none of whom may be aware of, or care about, the aforesaid semantic conventions.
27. Indeed the Convention is expressed in three languages, all equally authentic. It is therefore not surprising that the methods of interpretation to be applied to such an international instrument are not the same. In particular, there is more room for a teleological interpretation. It may have its problems, of course – in particular, how to ascertain the *telos*, or purpose.

The List of Excluded Items Does Not Constitute a Logical Class

28. Why are the various items listed in Article 52 excluded from patentability? Are they all members of the same logical class? Some people think so. They say that what all of the items have in common is that they are abstract things. I do not believe that can be the right explanation. An invention is *information* about something. That was clearly decided by the House of Lords in *Merrell Dow Pharmaceuticals Inc v. H.N. Norton & Co Ltd* [1996] RPC 76, 86. But a discovery is also information about something, and so is a set of rules for doing business. If it should be objected that a patentable invention is information about a concrete object, I would reply that so may be a discovery.
29. Another explanation that should, I think, be rejected is that the excluded items are not ‘susceptible of industrial application’. The printing of detective stories or the pressing of records of music are large industries. So is the production of computer programs. What makes a book or a record or a computer program

new is the text, music, etc. If those things cannot be patented, it is not because they are not susceptible of industrial application.

The Items Were Excluded For Policy Reasons

30. As was pointed out by Laddie J in *Fujitsu Limited's Application* [1996] RPC 507, 530, the items listed in Article 52 were excluded for reasons of public policy. This is obvious, for instance, in the case of 'aesthetic creations' – a literary work, say. Such things are to be protected, if at all, under copyright law. Not only does copyright law refuse to protect a general idea, it freely allows the publication of similar works if there has been no copying. Imagine what would happen if literary works could be protected by patent. Literary creativity would tend to be stifled, and authors would have to conduct patent infringement searches before the expiry of their copy-deadlines.
31. But the policy reasons are by no means necessarily the same item by item; indeed it would be surprising if they were. Therefore, we are not entitled to presuppose that the impact of each exclusion is going to be the same; requires to be handled in the same way; and will produce identical consequences. It is easier to make a mistake of that sort if one concentrates on the language of the Act, read in the light of traditional British canons of interpretation, instead seeking to give a purposive interpretation to Article 52 of the Convention.
32. With respect, I believe it was a category mistake of that order that led to the controversy in *Merrill Lynch's Application* [1988] RPC 1 and [1989] RPC 561, C.A. fuelled by *Genentech's Patent* [1987] RPC 553 and [1989] RPC 147, C.A.
33. Indeed, it cannot be ruled out in advance that some of the exclusions are "soft" and others are "hard": a matter of degree. All of the excluded items are information about something, and the harder the exclusion, the more it is the policy of the law to insist that the use of the information be not foreclosed under patent law. We can see this better by examining what has already been established by the case law.

Discoveries

34. An instance of a "soft" exclusion is a discovery. It is well-settled law that, although you cannot patent a discovery, you can patent a useful artefact or process that you were able to devise once you had made your discovery. This is

so even where it was perfectly obvious how to devise the artefact or process, once you had made the discovery¹³. The detractors of your patent are not allowed to say: the discovery does not count and the rest was obvious. They are not allowed to dissect your invention in that way. The discovery is an integral and all-important part of your invention. The law does not object to that. It objects only when you try to monopolise your discovery for all purposes i.e. divorced from your new artefact or process. For that would enable you to stifle the creation of further artefacts or processes which you yourself were not able to think of.

Computer Programs

35. The same approach cannot be taken to computer programs. The reason why computer programs, as such, are not allowed to be patented is quite different. Although it is hotly disputed now by some special interest groups, the truth is, or ought to be, well known. It is because at the time the EPC was under consideration it was felt in the computer industry that such patents were not really needed¹⁴, were too cumbersome (it was felt that searching the prior art would be a big problem¹⁵), and would do more harm than good¹⁶. I shall not go into details here but it is worth noting that the software industry in America developed at an astonishing pace when no patent protection was available¹⁷. Copyright law protects computer programs against copying. A patent on a computer program would stop others from using it even though there had been no copying at all. So there would have to be infringement searches. Furthermore you cannot have a sensible patent system unless there exists a proper body of prior art that can be searched. Not only are most computer programs supplied in binary form – unintelligible to humans – but most of the time it is actually illegal to convert them into human-readable form¹⁸. A patent

¹³ *Genentech's Patent* [1987] RPC 553, 566; on appeal [1989] RPC 147, 208, 240, C.A.

¹⁴ As late as 1971 the industry declared that it was content to be protected by the law of contract and trade secrets alone: Dworkin, 'The Nature of Computer Programs' in *Information Technology: The Challenge to Copyright* (Sweet & Maxwell, 1984) p 89.

¹⁵ Rule 39(1) of the Patent Co-operation Treaty recognised that an International Searching Authority might not be suitably equipped.

¹⁶ The fact that computer programs (or, what comes to much the same thing, computers when programmed) could be patented in the UK under the 1949 Act adds force to my observations, because it goes to show that the exclusion in the EPC must have been a deliberate act of policy.

¹⁷ See Rossi, *op cit*, 7.

¹⁸ See e.g. the Software Directive (91/250/EEC), Articles 4 and 6; Rossi, *op cit*, 38. On the policy problems in general see Rossi pages 31-45.

system where it is illegal to search most of the prior art is something of an absurdity.

36. For those and other reasons it is not surprising that in, this instance, the exclusion is “harder”. You are not allowed to get round the objection – that you are attempting to patent a computer program – by claiming it as a physical artefact, a mere change of form. You cannot patent “A computer *disk* when storing my computer program” or “A *computer* when programmed to function according to my program”. For if that were allowed you would get a monopoly to the use of your computer program, defeating the policy of the law. (There may be superficial exceptions but they turn on the fact that your invention is not a mere computer program.)
37. Recently, the scope of this exclusion has been under re-consideration by the European Union¹⁹. The Commission wanted to harmonise the law by defining the line between inventions that are properly patentable and mere computer programs. Although not strictly relevant to what I have to decide, I must admit I watched developments with some anxiety. Had the proposal succeeded it would have entrenched a test involving ‘technical contribution’ and ‘technical features’ that I suspect is too vague to be workable at the margin. On 6 July 2005 the proposed directive was defeated in the European Parliament and it will not be re-introduced.

Games

38. As another example, take a game. You cannot patent the rules of a game, as such; but I believe (though I do not have to decide it) that the scope of the exclusion stops there. It has always been Patent Office practice to grant patents for novel board games supplied together with a printed set of rules. It does no harm and encourages the industry to devise new games that may give pleasure to millions. For example the board game Monopoly was patented. It is a superficial answer to say, “Yes, but that is because it is a set of concrete objects”. To which I reply: “You could patent the set even if the objects themselves were not new”, as in a novel game played with stones on a chessboard. In those cases it is the new rules that afford the unifying novelty

¹⁹ Proposed Directive on the patentability of computer-related inventions (Common Position (EC) No 20/2005, adopted by the Council on 7 March 2005): O.J. 14.6.2005 C 144 E/9.

and the inventive step. I can think of no reason why it should be the policy of the law to deny adequate patent protection to those who come up with new and entertaining games. The practical effect of the exclusion is merely to confine the monopoly to what which will be made and supplied commercially.

Medical Treatments

39. Now take methods of medical treatment²⁰. This is a not a “hard” exclusion. If it were, you would not be allowed to patent a new drug. For whoever holds the monopoly to the drug can obviously forbid its supply for any purpose. In fact, there is no inherent or overwhelming reason why medical treatments should not be patented and the laws of some important countries allow it. In this country and in Europe you can go quite a long way towards patenting a medical treatment. You can patent the use of a known substance to manufacture a medicine for treating a disease according to your new method²¹. Those are known as “Swiss-type” claims. What you must not do is to claim a monopoly that would allow you to sue doctors or vets directly for treating their patients. You can achieve much the same result indirectly, and if the EPO is right it seems that you can even sue hospital technicians²². For most practical purposes the exclusion is one of form, not substance, and is based on local cultural notions of what is seemly.

Presentations of Information

40. The policy that lies behind this exclusion is stopping people from getting a monopoly to information as such. You cannot get round it by claiming it in conjunction with a physical artefact e.g. a computer memory that is storing your information. It is a “hard” exclusion. Even so, it does not prevent the patenting of a useful *way* of presenting information divorced from the particular information as such. The classic illustration is the theatre ticket which is so printed that, no matter how it is torn in half by the usher, retains the essential information on each half²³. This exclusion overlaps with ‘aesthetic creations’, and is another reason why detective stories may not be patented.

²⁰ I appreciate those are not in the list of Article 52(2) but they are excluded for policy reasons all the same, by Article 52(4).

²¹ G5/83 *Second Medical Use* (a decision of the Enlarged Board of the EPO).

²² Decisions T385/86, T400/87, and T530/93 (use of NMR machine for scanning patient).

²³ *Fishburn's Application* 57 RPC 245 (a decision under the 1949 Act).

Business Methods

41. Now let us consider business methods. What is the policy reason that lies behind the exclusion of those? It is because, historically, patents for business methods were never granted yet business innovation went on very well without the benefit of that protection and without the red tape. Businessmen have been every bit as inventive as engineers. It was probably business administrators (and not poets or priests) who made the greatest “invention” of all time: phonetic writing. Consider as further examples: the invention of money; of double-entry bookkeeping; of negotiable bills of exchange; of joint-stock companies; of insurance policies; of clearance banking; of business name franchising; of the supermarket; and so on. None of these needed patent protection to get started. A patent system is always a burden on trade, commerce and industry: if only because of the “red tape” effect. The only question is whether the benefits outweigh the burdens. That has to be demonstrated by those who assert it is so, and in any case the decision is for the legislature. In this country and in Europe the legislature has not yet been persuaded.
42. The point often comes up when the alleged invention has to do with carrying out a business using a computer system. Is the applicant trying to patent a method of doing business? That is not allowed. Or is he trying to patent computer technology? That may be allowed (it depends). But how do you tell the difference? In one sense, a computer that is programmed so as to implement a novel business technique *is* a new technological artefact. It is a machine with millions of switches arranged as never before. If you say, “Yes, but it is not the sort of switch-arrangement that ought to be allowed to count”, you must explain why. It is not always as easy as it might sound.

IV. UK PATENT OFFICE vs. THE EPO

43. So much so, that, as already mentioned, the UK Patent Office does not use the same reasoning as the European Patent Office, even though they are working under what is essentially the same legislation.
44. Let me first outline the practice of the UK Patent Office. They look at the applicant’s claim, and ask themselves: what is his “technical contribution”? If there is none – as in my tax-planning example – they reject the application.

They hold that is not an 'invention'. If there is some "technical contribution", they still have to decide whether to reject it for being old, or obvious. It is an 'invention', but it may be an old invention, or an obvious one.

45. Now let me outline the practice of the European Patent Office. They look at the applicant's claim, and ask themselves: does it have any "technical features"? If there are no "technical features" at all they reject the application, for not being an 'invention'. But they consider it is an invention if there is any "technical feature" at all. They take it very far. Even paper, or ink, can count as a technical feature²⁴. I suppose a detective story, written on paper with ink, would pass that part of their test. What they then go on to do is to ask themselves, "Yes, but is it old, or obvious?" And in deciding if it is old or obvious, they *ignore* anything that is not a "technical feature".
46. In short, the difference between the two approaches is that the EPO filters out excluded subject-matter at the stage of considering obviousness – at the last stage – while the UK Patent Office does so at the first stage (when considering excluded subject-matter). Or to put it a little more precisely, what the UK Patent Office does is to consider the exclusion under the description 'novelty', but the EPO does so under the description 'inventive step'.

Does It Matter?

47. Do both approaches lead to the same end-result in practice? I asked counsel if they could come up with a clear concrete example, real or imaginary, where it made all the difference, but they were not able to think of one. Not a convincing one, anyway.
48. So why is it that the difference may matter all the same? It is because, as Renan and Lord Hoffmann said in other contexts, *la vérité est dans une nuance*. Even if the two approaches are the same functionally they may, conceivably, produce different results when it comes to matters of evaluation. That is because cases have to be decided by human beings; but the human mind is affected by the context in which a question is posed. And technological invention cannot reliably be divorced from business context.

²⁴ T258/03 *Hitachi*: see §4.6.

49. As Sedley LJ said in *Dyson Appliances Ltd v. Hoover Ltd* [2001] EWCA Civ 1440, “the perceived limits of technical practicability are a matter of *mindset*, and that mindset is characteristically affected by awareness of need, of which commercial potential is both a function and an index.” He added:

If then the intellectual horizon of practical research and innovation is in part set by the economic milieu, commercial realities cannot necessarily be divorced from the kinds of practical outcome which might occur to the law’s skilled addressee as potentially worthwhile. It is one thing to accept that this technologically skilled but wholly unimaginative person is a lawyer’s construct – a ventriloquist’s dummy, Mr Hobbs calls him – who thinks only of how things work or could be made to work. It is another to expel him altogether from the real world, where ideas do not occur to people in (so to speak) a vacuum.

The present case ... is a very good illustration. The vacuum-cleaner industry was functionally deaf and blind to any technology which did not involve a replaceable bag. The fact that the handicap was entirely economically determined made it if anything more entrenched. The industrial perception of need was consequently, in the judge’s happy coinage, bagridden. It is entirely in accordance with what we know about innovation that this commercial mindset will have played a part in setting the notional skilled addressee’s mental horizon, making a true inventor of the individual who was able to lift his eyes above the horizon and see a bag-free machine.

See also per Mance LJ in *Panduit Corporation v Band-It Company Ltd* [2002] EWCA Civ 465 §§50-51 (“That the market might be satisfied with lesser technical performance, in particular the risk of galvanic reaction and corrosion and of coldness to touch in freezing conditions, was only demonstrated by Panduit’s invention.”)

50. Technological invention may shade off into business innovation, making for difficult cases in between. Let me offer a practical illustration. I shall choose the old case of *Thermos Ltd v. Isola* (1910) 27 RPC 388 because its facts are beautifully simple but it might be decided differently nowadays following *Dyson*. In 1892 Sir James Dewar invented the vacuum flask for storing liquid air in laboratories by keeping it cold. It could also be used for keeping liquids hot. However, it was a delicate scientific instrument. Then in 1904 the Thermos

company hit upon the idea that a very useful article for travellers could be provided for keeping hot coffee, soup, etc based on Dewar's principle. For that purpose they took Dewar's fragile flask and gave it a strong outer casing so that it could withstand abuse. They gave us the Thermos flask we know. Millions have been sold.

51. Now, was that an invention, and was it obvious? From one point of view it was a clever business idea but not a mechanical invention, and that is what Neville J held. The technical problem – how do I make a Dewar vessel that is robust enough to be taken to picnics and race-meetings – was easily solved. But from another point of view it was an invention, and it was not obvious (which is perhaps why the public had to wait for years before Thermos flasks became available). For it was necessary to identify the problem before coming up with the solution. And in order to do that you had to make the necessary mental leap. You had to think beyond the customary mental horizon imposed by the walls of the scientific laboratory. And in order to do that, you had to overcome the unconscious prejudice that Dewar vessels, being fragile instruments, had no place in the outside world. Making the mental leap may have required thinking along commercial lines, but *Dyson* shows that is not necessarily irrelevant.
52. It is true that the Thermos flask was not a new business method: it was a new artefact. But, formally speaking, so is a computer when programmed to carry out a new business method.
53. I hope I have said enough to illustrate that it is not always easy to segregate “business” ideas from “technical” ideas. By censoring out the business aspect you may destroy the context in which the technical idea is conceived.

V. THE CASE LAW

The Significance of the Case Law

54. Decisions of the Court of Appeal are binding upon themselves and the High Court. You ascertain the *ratio decidendi*, then apply it to the facts of your case. However, when it comes to the patentability of inventions there is a slight complication. The ultimate lodestar is Article 52 of the European Patent Convention (see below). But Article 52 is also interpreted and applied by the European Patent Office. And our courts have stressed that it is most desirable to

have a uniform interpretation, paying great attention to the EPO²⁵. Unfortunately the jurisprudence of the EPO is not constant. Like the declination of the compass, it can shift over time. Therefore, cases decided by our courts a few years ago may not be saying quite the same thing as the EPO is saying now. That is particularly true of the topic of patents and business methods. Our courts have followed decisions of the EPO which the EPO itself no longer applies.

55. That does not mean that I must ignore the latest EPO decisions and regard myself as rigidly bound by former decisions of our courts. For if that were the rule, applicants for patents would have to keep going to the Court of Appeal, nay the House of Lords, to bring our law back into step. In any case I would be paying mere lip service to the forms of the doctrine of *stare decisis* and neglecting its substance. For the reasoning of the case law of our courts anyway recognises that a certain measure of flexibility is in order, precisely because it is not good that the law should be applied differently in London and Munich.
56. That said, the EPO, beyond having certain limited powers to revoke patents it granted itself, has no jurisdiction over the patent law of the U.K. The EPO is not the European Court of Justice, and Parliament has not seen fit to confer such powers upon it. On matters of patent law the role of the EPO is persuasive, not prescriptive²⁶. The EPO is not equipped with a staff of expert economists who are competent to decide if the patenting of business methods, or computer programs, would be good for our country and even if it was it would still be for our Parliament to decide. So, although we should pay careful attention to EPO decisions, and the decisions of other Convention courts, we are not bound to follow them blindly.
57. On the present topic (the patentability of what are said to be business methods) we are confronted with modes of reasoning which, although different, would, in my judgment, usually produce identical results on the same set of facts if properly applied. Now, when our courts follow the EPO they do so for reasons that are essentially practical. If both modes of reasoning should yield identical

²⁵ *Gale's Application* [1991] RPC 305, 323, C.A.; *Fujitsu Limited's Application* [1997] EWCA Civ 1174, [1997] RPC 610, 611, C.A.

results there is no pressing motive why the one should have to give way to the other.

58. But I have written that both systems should produce identical results *if properly applied*. So it remains to discover whether one should be preferred to the other because it is easier to apply or, to put it another way, is less likely to lead to errors of evaluation in practice. For all human beings can make errors of evaluation from time to time and there may be something to be said for the system that is easier to apply.

Case Law

59. Counsel helpfully cited the following cases:
- (a) T208/84 *Vicom* (EPO board of appeal, 15 July 1986).
 - (b) *Genentech Inc's Patent* [1987] RPC 553; on appeal [1989] RCP 147, C.A.
 - (c) *Merrill Lynch's Application* [1988] RPC 1; on appeal [1989] RPC 561, C.A.
 - (d) *Gale's Application* [1991] RPC 305, C.A.
 - (e) *Fujitsu Limited's Application* [1997] EWCA Civ 1174, [1997] RPC 608, C.A.
 - (f) T931/95 *Pension Benefit System Partnership* (EPO board of appeal, 8 September 2000)
 - (g) T258/03 *Hitachi* (EPO board of appeal, 21 April 2004).
60. Boards of Appeal are not at the top level of hierarchy of the EPO and their decisions are not binding on one another²⁷. Their decisions may establish a consensus or practice, however. Even so, it may change over time, as I have already observed.

Vicom

61. The significance of this case is that part of its reasoning was adopted by the above-mentioned Court of Appeal decisions and these have continued to govern

²⁶ *Merrill Dow Pharmaceuticals Ltd v. H.N. Norton & Co Ltd* [1996] RPC 76, 82, H.L.; *Genentech Inc's Patent* [1989] RPC 147, 266 per Mustill LJ.

²⁷ See e.g. Paterson *The European Patent System* 2nd Ed para 4-26a and b [pp146-7].

the practice of our Patent Office up to the present time, but is no longer applied by the EPO itself.

62. To understand the case we need a little background knowledge, but it is easy. We all know that it may be possible to take a blurred photograph and make it nice and sharp by some process of computer-enhancement. In *Vicom* the invention concerned the digital processing of images. This is a technology that is closely associated with branches of applied mathematics. The use of mathematics to model signal-processing devices is commonplace. (For example, it is conventional to specify a filter in terms of mathematical operators and a person skilled in that art knows how to build a circuit to match.) In short, mathematics can be regarded as a language in which signal-processing devices are described, instead of using words or diagrams. It has the advantage that it lends itself to further mathematical manipulation so that new and useful devices may be designed with less trouble. In these arts, then, solving a practical problem may depend on solving a problem in applied mathematics. And I have noticed that experts in these arts may be professors of applied mathematics.
63. It was objected that the invention was not patentable because it was a mathematical method. The Board of Appeal disagreed. It held that “even if the idea underlying an invention may be considered to reside in a mathematical method a claim directed to a technical process in which the method is used does not seek protection for the mathematical method as such” (paragraph 6).
64. You will have noticed that the Board was treating ‘mathematical methods’ as a “soft” exclusion, like the analogous case of a discovery. They did not allow the applicants to monopolise the mathematical method for all conceivable purposes, but they did allow it for the image-enhancing process. I believe that that aspect of the Board’s reasoning holds good today. However, it is not directly relevant for present purposes.
65. It was further objected that the method was to be carried out on a computer and so it was really no more than ‘a computer program ... as such’. The Board disagreed with that too. But notice this in passing. We have now passed from the realm of ‘mathematical methods’ into a different realm where the policy underlying the exclusion may be, and in my opinion is, different.

66. The Board held that “a claim directed to a technical process which process is carried out under the control of a program (be this implemented in hardware or software), cannot be regarded as relating to a computer program as such within the meaning of Article 52(3) EPC, as it is the application of the program for determining the sequence of steps in the process for which in effect protection is sought” (paragraph 12). The same reasoning was applied to the analogous claim to an apparatus: a computer set up to operate in accordance with a program for controlling or carrying out a technical process (paragraph 15).
67. Again that ought to be uncontroversial, provided we can all agree about what ‘technical’ means. In the cited case that was not a problem. Most people would agree that automatic image-enhancement is a branch of technology.
68. However, in arriving at its decision the Board said something extra. It is the “extra” that has been taken up by the English courts, but is no longer followed by the EPO itself.
69. The Board said:
- Generally speaking, an invention which would be patentable in accordance with conventional patentability criteria should not be excluded from protection by the mere fact that for its implementation modern technical means in the form of a computer program are used. *Decisive is what **technical contribution** the invention as defined in the claim when considered as a whole makes to the known art.*
70. What did they mean by ‘technical contribution’? Well, any invention that is patentable must add something to the existing stock of human knowledge. If it does not, it is not new. So they were writing about what the invention, as claimed by the applicant, added to the existing stock. They were saying: identify what that is, then ask “Is it ‘technical’?”. If yes, or in part so, it is, in principle, patentable. It might still fail for being obvious. (As it happened, the Board of Appeal in *Vicom* did not go on to decide whether it was obvious. That was for certain procedural reasons. They sent it back to the Examining Division for them to consider it.)

Merrill Lynch

71. In that case someone tried to patent a data processing system for making a trading market in securities. Put shortly, it was remarkably like a conventional securities market except that it was implemented on a computer. The application was rejected by the Patent Office, by the Patents Court and by the Court of Appeal. The only interest in the case is the reasoning they used.
72. The Merrill Lynch company argued that they were entitled to a patent because they were claiming a machine, and not a computer program or business method 'as such'. According to them, those words meant that a patent could not be refused unless the claim was directed to excluded subject-matter and nothing but excluded subject-matter. Of course, if that had been upheld it would have driven a four-lane motorway through the 'computer program' exclusion. Everybody who wanted to get a patent monopoly for a new computer program would have done it by the simple expedient of claiming a computer when operating under the instructions of their new program.
73. In the Patents Court Falconer J held that something cannot be patented if the only inventive step "resides in the contribution of [the] excluded matter alone" (see page 12). If the only clever part is excluded subject-matter, no patent. That reasoning would have been correct if confined to the subject-matter that was actually before him i.e. a method of doing business. Unfortunately his reasoning was not thus confined. It went to excluded subject-matter of all sorts, treating all of them as if they were "hard" exclusions. Even a discovery. That could not have been right, for it collided with the well-established principle that you may have a perfectly good, patentable invention where the only non-obvious feature consists of your discovery.
74. The Court of Appeal pointed out his error in another case that was going through the courts at the same time, *Genentech Inc's Patent*. That was a case that did involve a discovery, namely, the DNA sequence of the human gene that is responsible for making the valuable hormone t-PA. However, the Court of Appeal could not agree on a satisfactory and comprehensive formulation of its own (and did not have to, in order to dispose of that case).
75. Nobody seemed to notice at the time that it was possible that discoveries and business methods might have been excluded for different reasons of public

policy and, therefore, could not be treated as substitutable items in one and the same piece of legal reasoning.

76. Going back to *Merrill Lynch*, on appeal to the Court of Appeal Falconer J's actual decision was upheld but his reasoning was not. The Court of Appeal felt bound to reject it because it had been disapproved in *Genentech*. Equally, however, they were not willing to go to the opposite extreme and allow the patenting of business methods or computer programs in disguise. Seeking a way out of the impasse, they seized on the remarks of the Board of Appeal in *Vicom*. At page 569 Fox LJ (whose colleagues agreed) said this:

The position seems to me to be this. *Genentech* decides that the reasoning of Falconer J is wrong. On the other hand, it seems to me to be clear, for the reasons indicated by Dillon LJ [in *Genentech*], that it cannot be permissible to patent an item excluded by section 1(2) [which corresponds to Article 52] under the guise of an article that contains that item – that is to say, in the case of a computer program, the patenting of a conventional computer containing that program. Something further is required. The nature of that addition is, I think, to be found in the *Vicom* case where it is stated: “Decisive is what technical contribution the invention makes to the known art”. There must, I think, be some technical advance on the prior art in the form of a new result (e.g. a substantial increase in speed as in *Vicom*).

Now let it be supposed that claim 1 can be regarded as producing a new result in the form of a technical contribution to the prior art. That result, whatever the technical advance may be, is simply the production of a trading system. It is a data-processing system for doing a specific business, that is to say, making a trading market in securities. The end result, therefore, is simply “a method ... of doing business”, and is excluded by section 1(2)(c) [which corresponds to Article 52(2)(c)]. The fact that the method of doing business may be an improvement on previous methods of doing business does not seem to me to be material. The prohibition in section 1(2)(c) is generic; qualitative considerations do not enter into the matter. The section draws no distinction between the method by which the mode of doing business is achieved. If what is produced in the end is itself an item excluded from patentability by section 1(2), the matter can go no further. Claim 1, after all, is directed to “a data processing system for making a trading market”. That is simply a method of doing business. A data processing system operating to produce a novel technical result would normally be patentable. But it cannot,

it seems to me, be patentable if the result itself is a prohibited item under section 1(2). In the present case it is such a prohibited item.

77. That case, therefore, established the ‘technical contribution’ test that is still employed by our Patent Office, but is no longer employed by the EPO. Let us pause to analyse it. It contains the following logical steps:
- (a) You examine the patent claim and identify what is new.
 - (b) You decide whether what is new includes a ‘technical’ result.
 - (c) If not, there is not a patentable invention.
78. That approach has the merit of avoiding the absurd conclusion that a new and non-obvious discovery cannot be an integral part of a patentable invention, and the equally absurd conclusion that all excluded items can be patented by the mere device of hybridising them with conventional hardware. But it inevitably suffers from the defect – a lesser one, to be sure – that it introduces the inherently uncertain test of what is ‘technical’. In any case it is not a test which the framers of Article 52 saw fit to employ²⁸. It may be a “get out of jail” card. But it does not tell you what to do next.

Gale

79. Mr Gale claimed to have found out a better method of calculating square roots. That is a useful function that most pocket calculators have to have. I believe that Mr Gale’s method was not searched for novelty for it appears that the Patent Office rejected his alleged invention for not being patentable anyway, even if new. Conventional methods of calculating a square root required one number to be divided by another, a process that was cumbersome to perform using the rather old-fashioned chips we had in those days. Therefore, those methods were slow or cumbersome. Mr Gale’s method eschewed division and used multiplication instead, which was easy to achieve on those chips: you did what is called a binary shift. The upshot – always supposing his method really was new – was that the calculation could be done faster or with less cumbersome circuitry.

²⁸ Recognising the force of that objection, some Boards of Appeal have seized on Rule 29 (which requires that the claims of a patent shall define the matter for which protection is sought ‘in terms of the technical features of the invention’). But it is something of a counsel of desperation to use what is little more than a procedural rule in place of major substantive provisions of the Convention.

80. Mr Gale claimed his invention as a ROM chip in which his new method was embedded. A ROM is a circuit that is made in the factory and thereafter cannot be altered. Mr Gale's application was rejected by the Patent Office. They thought it was nothing but a computer program in disguise. Following *Merrill Lynch*, it would not have been patentable if put on a floppy disk, and it made no difference that it was put on a ROM instead. His appeal was allowed by the Patents Court because Aldous J thought that the ROM, unlike a floppy disk or a programmed computer, was a dedicated piece of apparatus. But the Court of Appeal thought that was too formalistic and reversed the decision. They held that there was no 'technical contribution' because what was new was a mathematical method. Hence Mr Gale's patent was refused.
81. The Court of Appeal did not explain why Fox LJ's observation ("There must ... be some technical advance on the prior art ... e.g. *a substantial increase in speed* as in *Vicom* ...") did not apply to Mr Gale's ROM circuit. One answer may be that nowhere does the *Vicom* decision²⁹ refer to an increase in speed or call that a technical advance on the prior art. In 1986 it would have true of nearly all computer programs. They were routinely devised with increased speed in mind. (They still are, though it is not quite so pressing now because current computer hardware is so fast.)

Fujitsu

82. Semiconductor scientists often need to design new crystals. The old way was to make scale models by hand. Fujitsu proposed a way of doing it on a computer. The end-result was a picture of a crystal. But it was up to the operator to effect the design. Aldous LJ said:

[A] computer set up according to the teaching in the patent application provides a new "tool" for modelling crystal structure combinations which avoids labour and error. But those are just the sort of advantages that are obtained by the use of a computer program. Thus the fact that the patent application provides a new tool does not solve the question of whether the application consists of a program for a computer as such or whether it is a program for a computer with a technical contribution.

²⁹ That "the invention ... confers a technical benefit namely a substantial increase in processing speed" formed no part of the Board's decision. It was merely an argument deployed by the applicants in that case.

I believe that the application is for a computer program as such... In *Vicom* the technical contribution was provided by the generation of the enhanced display. In the present case the combined structure is the result of the directions given by the operator and use of the program. The computer is conventional as a display unit. The two displays of crystal structures are produced by the operator. The operator then provides the appropriate way of superposition and the program does the rest. The resulting display is the combined structure shown pictorially that in the past would have been produced as a model. The only advance is the computer program which enables the combined structure to be portrayed quicker.

While it was true that Fujitsu's programmed computer did not generate images wholly automatically, because it required some decisions to be made by the operator, the distinction between that case and *Vicom* as explained by the Court of Appeal is not straightforward. In *Vicom* the enhanced image was generated by a calculation that could have been done by hand, albeit more laboriously. The computer that was used to avoid the labour was itself conventional, as in *Fujitsu*.

Pension Benefit

83. Meanwhile the EPO had started to abandon the "contribution" test of *Vicom* and to adopt a new approach. There were several decisions but we can pick up the story with the *Pension Benefit* case. It was about running a fully funded pension scheme, said to be of a novel character, on a computer. The applicants said that it was not a method of doing business, but a technical tool serving an actuary who was doing his job in business and fund management. There were claims to the new method and claims to computer apparatus used for carrying out the new method.
84. The Board held that the claim to the new method involved no more than economic concepts and ways of doing business and so was not allowable. However (and this was part of the new approach) it held that the claim to the suitably programmed computer could not be rejected for failing to be an 'invention'. It was a physical entity. True, it was a conventional computer. But that, said the Board, went to whether it was new and non-obvious, and not to whether it was an 'invention' in the first place.

85. Having decided that the claim was for an 'invention', the Board went on to examine whether the invention was obvious. And, in deciding that, the Board held that any improvement that lay in the field of economics [i.e. business methods] could not "contribute to the inventive step". In other words, the difference between the old approach, as in *Vicom*, and the new approach, was that the excluded subject-matter (business methods) became relevant at the stage of considering obviousness.

Hitachi

86. This was confirmed in the *Hitachi* case. The alleged invention was an automatic auction carried out on a computer system. A problem that arises when auctions are carried out on-line is that bids get delayed in transmission and so out of synchronisation. According to Hitachi's idea you solve the problem as follows. The auction starts by asking the bidders to transmit two prices down the line, one the "desired price" and one the "maximum price". After this initial phase the auction is automatic and does not require the bidders to follow the auction on-line. They just get the end-result: who won. The result is calculated by the computer by setting a price and successively lowering it (known as a "Dutch auction") until it reaches the level of the highest "desired price", as already sent in by the various bidders, of course. In the event of a tie the computer increases the price until only the bidder having the highest "maximum price" is left. He is the winner.
87. The Board held that the first thing to do is to ask if the invention is excluded by Article 52(2) *without any knowledge of the prior art*. If it can be seen that there are any 'technical' means at all – and those could include even pen and paper – the first stage is successfully passed. You have an 'invention'. For this purpose there is no difference between an apparatus claim and a method claim (to that extent disagreeing with *Pension Benefit*). The "technical contribution" approach, followed by our Court of Appeal in *Merrill Lynch, Gale and Fujitsu*, was expressly rejected.
88. The next stage is to consider whether the invention was new and, if so, was obvious, "by taking account of only those features which contribute to a technical character". In *Hitachi* the Board held that the invention was obvious because the computer-technology features were obvious and the "clever" part (if

any) was the way of doing the auction, which pertained not to what was 'technical' but to a method of doing business.

89. That Hitachi's idea overcame a technical problem that afflicted on-line auctions (lack of synchronicity) was irrelevant, said the Board, because the problem was solved by business not technical means.

Discussion

90. It is fairly obvious that our Patent Office is not very enthusiastic about the prospect of having to track every twist and turn of the EPO's reasoning – some of it rather refined – and I can understand why. It would not be possible anyway because the EPO seldom establishes a new practice in the twinkling of an eye. Furthermore there are aspects of the EPO's current approach which, in my opinion, are not entirely satisfactory. In order to sort this out, let me consider to what extent the EPO may be right.
91. The legislation requires that, in order for something to be patentable, it must *be* an invention, it must be susceptible of industrial application, it must be new, and it must involve an inventive step (i.e. it must not be obvious). Those are four conditions. They are mandatory. None of them can be reasoned out of existence under the guise of interpretation.
92. By "*be* an invention" I mean not be excluded by Article 52(2). If something is an invention in that sense we can call it "technology" for short. I shall revert to that presently.
93. It must also be the law that, for something to count as new and non-obvious, it must do so *under the description* 'invention', in that sense. It is not enough that something is new and not obvious if the sole novelty or inventive step consists of something that is excluded from basic patentability by Article 52 (but it must really be excluded by Article 52: see further below). Tomorrow's newspaper will be a manufactured article; it will certainly be a new article; and at least some of its contents will not be obvious. But the newspaper will not be patentable on mere account of the novel and non-obvious information it presents. For the news itself will not satisfy those conditions under the description 'invention', but only under the description 'excluded matter'. There must be unity under the four conditions. Likewise, if it should turn out that

tomorrow's newspaper is printed with a new but obvious ink, it will satisfy three out of the four conditions, but that will not be enough.

94. To that extent I believe the EPO is right no longer to apply the "technical contribution" test. Properly regarded, that was a two-stage test that identified what was new (not disclosed in the past) and then asked whether it was 'technical' (i.e. not excluded from patentability). But it cannot be right to stop there. The new advance also must not have been obvious to those skilled in the art and that too must be under the description 'technical' (i.e. not excluded from patentability). In practice it may not be useful to consider whether something is an 'invention' without considering whether it is new and non-obvious. Much the same thing was said by the House of Lords in *Biogen Inc v. Medeva plc* [1997] RPC 1, 42.
95. A patentable invention is new and non-obvious information about a thing or process that can be made or used in industry. What is new and not obvious can be ascertained by comparing what the inventor claims his invention to be with what was part of the state of the existing art. So the first step in the exercise should be to identify what it is the advance in the art that is said to be new and non-obvious (and susceptible of industrial application). The second step is to determine whether it is both new and not obvious (and susceptible of industrial application) under the description 'an invention' (in the sense of Article 52). Of course if it is not new the application will fail and there is no need to decide whether it was obvious.
96. In order to identify what is the advance in the art that is said to be new and non-obvious the Patent Office may rely on prior art searches. But in my judgment it is not invariably bound to do so. It will often be possible to take judicial notice of what was already known. Patent Office examiners are appointed because they have a professional scientific or technical training. They are entitled to make use of their specialist knowledge. Of course the letter of objection will state the examiner's understanding of the technical facts in that regard, and thus the applicant will have the opportunity to refute it in case there has been a mistake.

97. Reverting to “under the description ‘an invention’”, it will often be possible to take a short cut by asking “Is this a new and non-obvious advance in technology?” That is because there can often be universal agreement about what is ‘technology’, see paragraph 11 above. But sometimes it will not be possible without running the risk of error, see paragraph 12. If there is any doubt it will then be necessary to have recourse to the terms of Article 52 of the Convention.
98. As to that, Article 52 contains a series of exclusions. It is necessary to bear in mind the *reasons* for those exclusions, and in my judgment they are not uniform and the same. I have discussed them in paragraphs 34 to 41 above.
99. A genuine ‘invention’ is information about something, but so are each and every one of the exclusions. Sometimes it is the policy of the exclusion that the information cannot be foreclosed to the public under patent law. A business method is a good example. At other times it is the policy of the exclusion to prevent foreclosure only to the extent that inventor is not able to describe a new artefact or process that embodies the information and is susceptible of industrial application. A discovery is a good example.
100. Turning to business methods in particular, an alleged invention will not be patentable if it is new and non-obvious merely under the description ‘a rule, scheme or method for doing business’.
101. A new advance in business methods, of itself, cannot supply that element of novelty and non-obviousness that is required to support a patent claim. However, if it is possible that the claim is capable of being supported on other grounds, the business context is not irrelevant. It may well be relevant background on obviousness. As Sedley LJ noted in *Dyson*, people do not make inventions in a vacuum. See paragraphs 48 to 52 above. Thus the commercial background may help to show that a certain technical advance (not itself excluded from patentability) was or was not obvious. The EPO cases on the topic are open to the danger of being interpreted otherwise. They should not be interpreted otherwise.

102. Quite often a “business method” case will overlap with the “computer program” exclusion and that is so in the present case. Some observations on that latter exclusion are in order, accordingly.
103. It was the policy of the “computer program” exclusion that computer programs, as such, could not be foreclosed to the public under patent law. (Copyright law is another matter.) They would be foreclosed if it was possible to patent a computer when running under the instructions of the program, for example, or magnetic disk when storing the program.
104. But the mere fact that a claimed artefact includes a computer program, or that a claimed process uses a computer program, does not establish, in and of itself, that the patent would foreclose the use of a computer program. There are many artefacts that operate under computer control (e.g. the automatic pilot of an aircraft) and there are many industrial processes that operate under computer control (e.g. making canned soup). A better way of doing those things ought, in principle, to be patentable. The question to ask should be: is it (the artefact or process) new and non-obvious merely *because* there is a computer program? Or would it still be new and non-obvious in principle even if the same decisions and commands could somehow be taken and issued by a little man at a control panel, operating under the same rules? For if the answer to the latter question is ‘Yes’ it becomes apparent that the computer program is merely a tool, and the invention is not about computer programming at all. It is about better rules for governing an automatic pilot or better rules for conducting the manufacture of canned soup.
105. Of course, if it were about better rules for running a business the idea would not be patentable.

VI. THE FACTS OF THIS CASE

106. The decision under appeal is neatly summarised as follows on the excellent website that is maintained by the Patent Office.
107. The two applications are concerned with networked interactive wagering on the outcomes of events, with particular emphasis on reducing processing delays to a minimum so that in circumstances where prices are changing continuously, a

client is provided with the most up-to-date information before placing a bet. In refusing the application, the hearing officer found that the invention was concerned merely with providing an improved transactional process over a computer network and therefore fell within the business method exclusion of section 1(2). The hearing officer went on to find that the invention did not provide a technical contribution required to make an otherwise excluded invention patentable, the invention in both applications merely representing non-technical changes to a business method in order to overcome technical problems.

108. I should mention that both patent applications contain the same teachings. They were originally a single application that was divided in two, a proceeding that may occur when the applicant thinks that he has come up with two different inventions and wants to patent each separately. I shall call them 'the parent' and 'the divisional', respectively.
109. The alleged inventions are defined in the respective claims and it will be enough to look at Claim 1 of each. I shall start with the divisional application.

The Divisional Application

110. I take the following account from the skeleton argument of Mr Douglas Campbell. The divisional application relates to real-time interactive wagering on event outcomes (i.e. betting). It explains how current wagering systems are often slow and inefficient, and thus do not offer clients real-time wagering.
111. Claim 1 of the divisional application is as follows, emphasising the integers of particular interest:

A wagering system having a population of wagerable event outcomes, each of said outcomes having a minimum wagering amount, the system comprising a wagering processor, a plurality of client workstations connectable to the wagering processor; and a database storing credit for each client; **wherein in response to a login by the client at a workstation the processor makes available for display on the workstation the credit available for the client and in accordance with the stored credit selects from the population for display on the workstation a list of wagerable event outcomes**

having minimum wagering amounts that do not exceed the credit for the client:

said wagering processor being operable to receive a client selection from a client workstation so as to wager on said wagerable event outcome; and

in response to the client selection, to reduce substantially immediately the stored credit for the client and make available for display on the workstation the client's updated credit and to select from the population an updated list of outcomes having minimum wagering amounts that do not exceed the updated credit.

112. The clever idea here (says Mr Campbell) is the use of what was referred to in argument as “dynamic filtering”, the implementation of this idea via master financial information files which store credit and are updated in real time (both upon wagering and maturing of a wager (claimed as the credit database, updated in real time) and the use of the credit information to select from the population of wagerable event outcomes. Thus at login the client is shown his available credit and only shown those wagers which the value of his credit selects from the totality of wagers – i.e. those wagers that the system determines that he can afford. Upon placing a wager, the value of his credit in the credit database is reduced substantially immediately and an updated (i.e. reduced) list of wagers which are within his revised credit is selected from the population of wagers and is transmitted for display instead. As the dynamic filtering is performed prior to transmission, only the data which is relevant to that particular client/credit combination is transmitted and caused to load into the transmission system
113. There may be a very large number of possible wagers, and transmitting them all to each client would cause an undue load on the communication system as well as being inefficient and time-consuming. The claimed invention addresses the technical issue of improving use of communication resources by reducing the amount of data transmitted – and it does so (says Mr Campbell) by the use of the technical feature of use of a value indicative of credit to select from a population of wagerable event outcomes. It also saves time and cost to the client.

114. The Hearing Officer (says Mr Campbell) wrongly thought that this claim merely circumvented the technical problems, as had been held to be the case in *Hitachi*. This was not correct, for the following reasons.
115. The *Hitachi* claim was for an automatic auction method. However unlike a conventional auction whereby bids and acceptances of bids are continually communicated between the bidders and the auctioneers, the claimed method used information (namely “desired price” and “maximum price in competitive state”) which was transmitted once only from the bidders. The method then determined which bidder was successful based on this information.
116. This method avoided technical problems which arise in Dutch auctions due to lack of synchronisation as a result of different delays within the network used by the bidders, but (says Mr Campbell) only addressed these by changing the underlying business method so as to no longer be a Dutch auction. Thus, as the Board of Appeal noted, steps consisting of modifications to a business scheme and aimed at circumventing a technical problem rather than solving it by technical means cannot contribute to the technical character of the subject-matter claimed.
117. In the present case, by contrast (continues Mr Campbell), there is no alteration to the business scheme. The customer wishing to place a wager will carry out precisely the same steps as would occur if the invention had not been in place but he would not see unallowable wagers. The betting office would receive wagers in exactly the same way as if the invention had not been in place. Furthermore the use in the system of a database holding customer credit information to access a value of credit for a user in combination with a further list of wagerable events as a second database with the accessed entry being used to dynamically select wagerable event outcomes in step with that value of credit, represents a technical solution to the problems referred to above.

Decision

118. I do not find that distinction (even if it were relevant) to be well founded. The “betting office” is indeed altering its business scheme in order to overcome a technical problem. The technical problem is that there is not enough bandwidth (information-handling capacity) to deal with everything within a limited time.

The answer is a business fix. The customer without much credit gets a second-class, censored service. The system eschews transmitting to that customer information about wagers that exceed his credit limit. The customer “sees” only those wagers that are within it. This reduces the demands on the bandwidth. If the customer could “see” all the other wager opportunities, he might choose to increase his credit limit in order to take advantage of them, paying in more money for that purpose. High rollers get to see more wagers and you can promote yourself into their ranks by fronting up with more money.

119. I wonder whether that concept is novel in the world of gaming. But assume all the same that the applicants’ idea is new and is not obvious. Under what description is it new and not obvious? Under the description ‘methods of doing business’. It is not patentable. In my judgment this can be nothing more than an innovation in a method of doing business.
120. Mr Campbell argued that his clients’ innovation pertains to what would be devised by the system administrator, and not by the businessman. That is not the relevant test. In any case it is wrong. In my judgment no business house would leave innovations of that sort to its system administrator.

The Parent Application

121. Mr Campbell draws attention to the following specific passage of the description:

Displayed wager prices are updated in real time as price changes occur. To ensure that displayed pricing information and market data based on existing markets are accurate, the system corroborates displayed data with preferably multiple electronic feeds from at least two sources where possible. Because data from multiple sources are not likely synchronized with respect to time, the system preferably performs such synchronization. If prices from multiple sources do not agree with each other after synchronization, the system may widen the spread, cancel bids/offers, or not accept any further wagering. This feature can advantageously avoid potentially costly errors.

122. The specific technical problem being addressed here (says Mr Campbell) is the need to ensure accurate data. That technical problem is solved by particular technical means, namely using multiple electronic feeds, and (since data from multiple sources is unlikely to date from precisely the same instant)

synchronising the data so obtained. The benefit is manifest: one avoids potentially costly errors, for either party to the transaction.

123. This technical solution (he continues) is reflected in claim 1 of the parent application, which is for:

A wagering system for wagering on event outcomes related to financial markets, the system comprising:
a plurality of client workstations and a remote wagering processor,
wherein the plurality of client workstations are connectable to the remote wagering processor to allow communication therebetween,
wherein each client workstation is operable to allow a respective client to login to the system, and operable to receive a client selection of an event outcome displayed thereon, characterised by:
the client workstation being operable to display information supplied from the processor including pricing information, market data, event outcomes based upon said pricing information and market data, and wager prices for the event outcomes;
a plurality of electronic data feeds connected to the wagering processor and in use supplying data of pricing information and market data from a corresponding plurality of data sources; and
the processor being operable to synchronise unsynchronised data from the feeds, to compare the displayed pricing information and market data with pricing information and market data from the synchronized data of said data feeds in real time and to amend the information supplied to the workstations if data from multiple sources do not agree with each other after synchronization.

124. Mr Campbell says that the problem of data accuracy is not being “circumvented” by this claimed invention. Instead it is solved by the use of synchronised data obtained from multiple sources. He says that the Hearing Officer accepted his clients’ argument in part, in that he accepted that there appeared to be a technical problem at which the claim was addressed. His objection was instead that there was “no detail of any technical solution provided by the application other than an increase in the spread of prices presented to the client”. Mr Campbell says this is wrong and points to page 10 lines 23-26 of the application, which states:

If prices from multiple sources do not agree with each other after synchronisation, the system may widen the spread, *cancel bids/offers, or not accept any further wagering.*

125. In any event (he submits) this reasoning is confused. In particular it is confusing the requirements of sufficiency with those of patentability per se. Provided that the claim makes a “technical contribution” – which it plainly does, since it solves a technical problem by technical means – it follows that there can be no objection under s 1(2)(c).
126. He adds that there is danger in the Hearing Officer’s suggestion that merely automating a process previously done manually would be a matter of conventional programming. First, this is an argument of inventive step, and is not relevant for present purposes. In any event, any consideration of inventive step would have required a specific instance of what was “previously done manually”, analysis of the difference between that and the claim, and a decision as to whether that difference involved an inventive step. With no statement of prior art, the applicant is unable to advance any reasoned counterstatement at all.

Decision

127. In my judgment what is claimed is not a patentable invention. In any market there may exist the problem that the transmission of prices or bids is delayed. (In the Wall Street crash of 1929 one of the terrifying features was that the ticker-tape, which was the mode of transmitting data that was employed in those days, fell behind by two and a half hours.) In the case of the parent application, what is the advance in the art that is said to be new and non-obvious? It is that you get corroboration from multiple sources and correct for any lack of synchronicity, if necessary spreading your prices to reflect the uncertainty, or even refusing to do business at all. I have not the slightest doubt that, supposing that to be new and non-obvious in the first place, it is so under the description ‘business methods’, and nothing else.
128. I appreciate that Claim 1 does not itself state that you spread your prices or, if necessary, refuse to do business at all. It just says that you “amend” the transmitted information if there is a lack of synchronicity. It does not say how.

That does not cause me to classify what is said to be the new and non-obvious development of Claim 1 under the description 'technology', as opposed to 'a method of doing business'. I am entitled to interpret the claim in the light of the description in the rest of the patent application, and so was the Hearing Officer.

129. I am satisfied that neither of the two alleged inventions are patentable. And even if the tests that are currently used by our Patent Office had been applied the result would be the same. So also if the tests currently used by the European Patent Office had been applied.

VII. SOME REMARKS

130. Despite the prohibition on granting patents for computer programs as such, it is said that the EPO has granted more than 40,000 of them. It is said that not a few of these pertain to business methods as well. From the point of view of the applicants in our case, if there is any chance of getting such a patent it may be said to be a rational business choice to try it. If not, their competitors might. I have pointed out that patents that are wrongly granted can be very expensive to challenge, and perhaps beyond the means or inclination of small and medium enterprises. An accumulation of patents of that sort (sometimes known as a "patent thicket") may be a serious barrier to entry.

131. The only safeguard against that wrong – and it is a wrong – is the vigilance of the Patent Office. When I was a Patent Office examiner (though that was many years ago) we knew that we sometimes granted patents that we shouldn't, but did it anyway because we thought the Patents Appeal Tribunal would not support us. I believe that when a Patent Office examiner upholds the law he or she ought to be named and praised. And even if the Patents Court may disagree with the objection on appeal, it is a matter of praise all the same if the objection was reasonable.

132. I understand that the Examiner who objected to these applications was Mr Roland Whaite. The Hearing Officer who, rightly in my judgment, upheld the objection was Mr H Jones.

VIII. CONCLUSION

133. In my judgment the objection was rightly taken, Mr Jones' decision was correct, and the appeal must be dismissed. Submissions about costs and the proposed form of order may be sent to my clerk by email.
134. Although I have no doubt whatever about the result, the case does raise issues of public importance because it affects the future practice of the Patent Office. I would be inclined to say that either party may have permission to appeal, even though it would be a second appeal. If the Patent Office did wish to appeal, they would not be appealing the actual result (for that is in their favour). They would be appealing the reasoning of this judgment as affecting the public administration. Compare *Secretary of State for the Home Department, Ex Parte Salem, R v.* [1999] UKHL 8; [1999] 1 AC 450.