



Neutral Citation Number: [2006] EWCA Civ 1371

Case No: A3/2006/1007 and A3/2006/1067

IN THE SUPREME COURT OF JUDICATURE
COURT OF APPEAL (CIVIL DIVISION)
ON APPEAL FROM THE HIGH COURT OF JUSTICE
CHANCERY DIVISION (PATENTS COURT)

The Hon Mr Justice Lewison

HC 06C00360

The Hon Mr Justice Mann

CH 2005 APP 0248

Royal Courts of Justice
Strand, London, WC2A 2LL

Date: 27/10/2006

Before :

THE RT HON LORD JUSTICE CHADWICK
THE RT HON LORD JUSTICE JACOB
and
THE RT HON LORD JUSTICE NEUBERGER

Between :

Aerotel Ltd
(a company incorporated under the laws of Israel)

- and -

- (1) Telco Holdings Ltd**
(2) Telco Global Distribution Ltd
(3) Telco Global Ltd

**Claimant/
Appellant**

**Defendants/
Respond-
ents**

And In the Matter of:
The Patents Act 1977

And in the Matter of:
Patent Application GB 0314464.9
In the name of Neal William Macrossan

Simon Thorley QC (instructed by Bristows) appeared on behalf of Aerotel
Daniel Alexander QC (instructed by Linklaters) appeared on behalf of Telco
Colin Birss (instructed by the Treasury Solicitor) appeared on behalf of the
Comptroller General of Patents

Mr Neal William Macrossan was not present, and was not represented,
but made written submissions

Hearing dates : 3rd and 4th August 2006

Approved Judgment

Lord Justice Jacob (giving the Judgment of the Court):

1. These two appeals are about some of the categories declared by Art. 52(2) and (3) of the European Patent Convention (“EPC”) not to be “inventions” and so unpatentable. The “Aerotel appeal” is in what was a patent action between Aerotel and Telco. Sued for infringement, Telco counterclaimed for revocation of Aerotel’s Patent No. 2,171,877. The action started, inappropriately having regard to its complexity and the amount of money at stake, in the Patents County Court as long ago as February 2005. HHJ Fysh QC quite rightly transferred it to the High Court in November that year. Comparatively late in the day, in February 2006, Telco applied for summary judgment on its counterclaim, basing the application on the exclusion to patentability. The application succeeded before Lewison J who ordered revocation of the patent on 3rd May 2006 [2006] EWHC 997 (Pat). No point is now taken about the lateness of the application.
2. Just before these appeals came on, Aerotel settled with Telco. There is still a pending infringement action on the patent however, for Aerotel have also sued a company called Wavecrest. So Aerotel have a live commercial interest in getting their patent back. It is not normally appropriate for the Court of Appeal by consent or without examining the merits to reverse a first instance decision revoking a patent, *Halliburton v Smith International* [2006] EWCA Civ 185, [2006] RPC 653.
3. The other appeal (the “Macrossan appeal”) arrives here by a different route. Mr Macrossan is the applicant for a UK patent, No GB0314464.9. The Office took the view that the subject-matter was unpatentable. There followed a hearing before Mrs S.E. Chalmers, the hearing officer, at which Mr Macrossan was represented by an experienced patent agent, Mr Michael Butler. Mrs Chalmers, by a decision of 22nd March 2005, upheld the objection. Mr Macrossan appealed to Mann J who, by a decision of 3rd April 2006 [2006] EWHC 705 (Ch) dismissed his appeal. With permission granted by me, Mr Macrossan appeals. He lives in Australia and indicated prior to the hearing that he was content to have the appeal heard on paper. He submitted a “Full Argument” shortly before the hearing. He also received the transcript of the hearing, provided some short written observations after the first day and subsequently provided written submissions following the closing of oral argument. His submissions in the main were backed by diligent research and have been very helpful.
4. Mr Simon Thorley QC appeared for Aerotel. Mr Daniel Alexander QC was to have argued Telco’s case and had submitted a skeleton argument which we have taken into account. He appeared when the case was called on to confirm his clients no longer had any interest in it and then departed. Mr Birss, in addition to appearing in the Macrossan appeal, then took on the job of acting as an *amicus curae* in the Aerotel appeal, moving from a neutral position prior to the settlement to take on the burden of defending the judgment below in accordance with the procedure indicated in *Halliburton*. As would be expected of counsel for the Comptroller, Mr Birss presented matters objectively and in a non-partisan manner. The Comptroller, particularly in an appeal from the Office is essentially seeking the guidance of the court rather than defending the decision of his hearing officer. After all, the Comptroller’s job is to reject patents that should not be granted and grant patents that should. He is trying to get it right, not to win for the sake of winning.

5. In that connection we should record also that we accept Mr Birss' submission that any pure question of law involved should be decided during prosecution. It is not enough to get a patent past the application stage to show that as a matter of law it merely arguably covers patentable subject-matter. The position is different from that under the old law. Then the rule was that patents should be refused only where on no reasonable view could the subject-matter be patentable, see *Swift's Appn.* [1962] RPC 37 at p.46. Despite that being the rule, in the years that followed *Swift*, in practice a decision of the Office or on appeal to the Appeal Tribunal was taken to decide the matter once-and-for all. That itself shows there is no point doing other than deciding the question. Moreover that is what the European Patent Office ("EPO") does and there is no warrant in the EPC for the "arguable" approach. Of course if a debatable question of pure fact is or may be involved at the application stage, things are different – one cannot then say that the decision at that point must be the last word on the subject. Then the applicant must be given the benefit of any reasonable doubt.

The Approach to the Legislation

6. As we have said these appeals turn on the application of Art.52(2) and 52(3) of the EPC. The provision was implemented in UK law by s.1(2) of the Patents Act 1977. Although s.1(2) pointlessly uses somewhat different wording from that of the EPC no-one suggests that it has any different meaning. So we, like the parties before us, work directly from the source. That has several advantages:
 - i) The difference in wording has at least the potential to lead to an erroneous construction of a provision which is intended to have the same meaning as that of the EPC (which is the effect of s.130(7) of the Act). Working using the EPC text obviates that risk;
 - ii) Decisions of the EPO Boards of Appeal on the exclusions are based on the provisions of the EPC. It makes sense to consider similar problems here by exactly the same language and Article number rather than a differently numbered variant which is supposed to have the same meaning;
 - iii) This is particularly important having regard to the fact that decisions of the Boards of Appeal on provisions of the UK Act intended to implement corresponding provisions of the EPC have "great persuasive authority" per Lord Hoffmann in *Merrell Dow v Norton* [1996] RPC 76 at p.82. Similar views have been expressed in other cases too, for instance by Nicholls LJ (with whom the other members of the court agreed) in *Gale's Appn.* [1991] RPC 305 at p.323, and by Lord Oliver in *Asahi's Appn.* [1991] RPC 485 at p.540.
 - iv) Moreover by using the text of the Convention the decisions of this court (and other UK courts) are more readily intelligible to those in other European countries who will be unfamiliar with the idiosyncratic ways of the UK Parliamentary draftsman. That is important: European patent judges ought, so far as they can, try to be consistent with one another, particularly in relation to the interpretation of national laws implementing provisions of the EPC. Decisions of important national courts on such provisions are also of persuasive authority within the EPO Boards of Appeal itself – see, for an

example, *Eisai* G 5/83 [1985] OJ 064 where the Enlarged Board had regard to a decision of the Bundesgerichtshof (the “BGH”), the Supreme Court of Germany.

Article 52: General considerations

7. Article 52 reads:

“(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.”

8. The provisions about what are not to be “regarded as inventions” are not easy. Over the years there has been and continues to be much debate about them and about decisions on them given by national courts and the Boards of Appeal of the EPO. They form the basis of a distinct industry of conferences and are the foundation of a plethora of academic theses and publications. There has also been much political debate too: some urging removal or reduction of the categories, others their retention or enlargement. With the political debate we have no concern – it is our job to interpret them as they stand.

9. As the decisions show this is not an easy task. There are several reasons for this:

- i) In the first place there is no evident underlying purpose lying behind the provisions as a group – a purpose to guide the construction. The categories are there, but there is nothing to tell you one way or the other whether they should be read widely or narrowly.
- ii) One cannot form an overall approach to the categories. They form a disparate group – no common, overarching concept, for example, links rules for playing games with computer programs or either of these with methods for doing business or aesthetic creations.

- iii) Some categories are given protection by other intellectual property laws. Most importantly, of course, aesthetic creations and computer programs have protection under the law of copyright. So the legislator may well have formed the view that additional protection by way of patentability was unnecessary or less appropriate.
- iv) Further, some categories are so abstract that they are unnecessary or meaningless. For instance a scientific theory as such is excluded. But how could a scientific theory ever be the subject of a patent claim in the first place? Einstein's special theory of relativity was new and non-obvious but it was inherently incapable of being patented. A patent after all is to a legal monopoly over some commercial activity carried out by human beings such as making or dealing in goods or carrying out a process. A scientific theory is not activity at all. It simply is not the sort of thing which could be made the subject of a legal monopoly.

Nor can the presence of the exclusion be explained on the narrower basis that it was intended to exclude woolly and general claims such as "Any application of $E=mc^2$ ". For such a claim would be bad for the more conventional reason that it does not disclose the invention "in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art"(Arts. 83 and 100(b));

- v) There is or may be overlap between some of the exclusions themselves and between them the overall requirement that an invention be "susceptible of industrial application." The overall requirement is, perhaps surprisingly, hardly ever mentioned in the debate about the categories of "non-invention" (no-one relied upon it before us) but it is clearly a factor lying behind some of the debate.
10. The principles of treaty interpretation contained in Arts 31-3 of the Vienna Convention on the Law of Treaties (1969 but only in force from 27th January 1980) are merely a codification of principles settled well before that Treaty. So they apply to the EPC even though it was a 1973 Treaty. Recourse may be had to supplementary means of interpretation "including the preparatory work of the treaty and the circumstances of its conclusion" in order to determine the meaning where the general rules of interpretation leave the meaning ambiguous or obscure.
11. So, one asks, what help can be had from the *travaux preparatoires* to the EPC? The answer is not a lot. The debates amongst the framers of the Convention which lead to the excluded categories were the subject of two fascinating and valuable articles in 2005 by Dr. Justine Pila of the Oxford University Intellectual Property Research Centre (*Dispute over the Meaning of "Invention" in Art.52(2) EPC – The Patentability of Computer-Implemented Inventions in Europe* 36 IIC 173; *Art.52(2) of the Convention on the Grant of European Patents: What did the Framers Intend?* 36 IIC 755). She shows that the *travaux* provide no direct assistance to any of the categories we have to consider. "Only a bull's-eye counts" (*per* Lord Steyn in *Effort Shipping v Linden Management* [1988] AC 605 at 625) and there are no bulls-eyes in the *travaux* for present purposes. What does emerge is that the various categories are the result of various compromises and distinct discussions about each of them. So one can at least find confirmation that no overarching

principle was intended. What was done was to formulate the language of each of the categories independently of one another, add the “as such” rider to all of them and leave it to the EPO and European patent judges to work out the detail.

12. Perhaps one other thing emerges - by its absence. There is no indication of any intention as to how the categories should be construed – either restrictively or widely. In EU law exceptions to a general principle are generally interpreted restrictively, see e.g. *per La Pergola* A-G at [8] in *Amengual Far v Amengual Far* Case C-12/98 [2002] STC 382 (a VAT case): “This criterion has been consistently followed in the case law of this court”. The EPO Boards of Appeal have applied that principle to the interpretation of Art. 53 see e.g. *Harvard Oncomouse* (1990) T 0019/90 [1990] OJ 376, *Plant Genetic Systems/Glutamine Synthetase Inhibitors* (1995) T 356/93. But Art. 53 is not the same as Art.52(2). It is expressly entitled “Exceptions to patentability.” The exceptions are clearly specified as such and the exception principle of construction can and does apply to them. But Art.52(2), by contrast, is not expressed as an exception to patentability – it sets out positive categories of things which are not to be regarded as inventions.

The position outside Europe

13. The position is different in Europe from that in the USA. Not only is there no equivalent of Art.52(2) in the US Statute but the courts have positively held that the types of patentable invention should be given “wide scope”. The general approach is that found in the Supreme Court case of *Diamond v Chakrabarty*, (1980) 447 U.S. 303, 100 S. Ct. 2204. The actual decision in *Chakrabarty*, that new and non-obvious microorganisms could be patented, is not that remarkable to European eyes for microorganisms are patentable as such under the EPC (only plants and animals are excepted by Art. 53(b)). But the expansive approach of the majority opinion (given by Burger CJ) in the Supreme Court goes wider:

“In choosing such expansive terms [in §101 the US Patent Act 35 USC] as ‘manufacture’ and ‘composition of matter’ modified by the comprehensive ‘any,’ Congress plainly contemplated that the patent laws would be given wide scope.

The relevant legislative history also supports a broad construction. The Patent Act of 1793, authored by Thomas Jefferson, defined statutory subject matter as “any new and useful art, machine, manufacture, or composition of matter, or any new or useful improvement [thereof].” Act of Feb. 21, 1793, § 1, 1 Stat. 319. The Act embodied Jefferson’s philosophy that “ingenuity should receive a liberal encouragement.” Writings of Thomas Jefferson 75-76 (Washington ed. 1871). See *Graham v. John Deere Co.*, 383 U.S. 1, 7-10 (1966). Subsequent patent statutes in 1836, 1870, and 1874 employed this same broad language. In 1952, when the patent laws were recodified, Congress replaced the word “art” with “process,” but otherwise left Jefferson’s language intact. The Committee Reports accompanying the 1952 Act inform us that Congress intended statutory subject matter to “include anything under the sun that is made by man.” S. Rep.

No. 1979, 82d Cong., 2d Sess., 5 (1952); H.R. Rep. No. 1923, 82d Cong., 2d Sess., 6 (1952).

This same language was employed by P. J. Federico, a principal draftsman of the 1952 recodification, in his testimony regarding that legislation: “[Under] section 101 a person may have invented a machine or a manufacture, which may include anything under the sun that is made by man ...” Hearings on H. R. 3760 before Subcommittee No. 3 of the House Committee on the Judiciary, 82d Cong., 1st Sess., 37 (1951).

This is not to suggest that § 101 has no limits or that it embraces every discovery. The laws of nature, physical phenomena, and abstract ideas have been held not patentable. [citations follow] Thus, a new mineral discovered in the earth or a new plant found in the wild is not patentable subject matter. Likewise, Einstein could not patent his celebrated law that $E=mc^2$ nor could Newton have patented the law of gravity. Such discoveries are “manifestations of ... nature, free to all men and reserved exclusively to none.”

14. The endorsement of the “anything under the sun that is made by man” approach led to further expansion of what is patentable in the US. In 1994 the Court of Appeals for the Federal Circuit decided that computer programs were patentable, *Re Alappat*, (1994) 33 F.3d 1526, 31 USPQ2d 1545. Then, in 1998, it decided in *State Street Bank v Signature Financial Group*, (1998) 149 F.3d 1368, 47 U.S.P.Q.2D (BNA) 1596 that business methods as such were too:

“Today, we hold that the transformation of data, representing discrete dollar amounts by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces “a useful, concrete and tangible result” – a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades.”

“As we pointed out in *Alappat*, at 1557, application of the test could be misleading, because a process, machine, manufacture, or composition of matter employing a law of nature, natural phenomenon, or abstract idea is patentable subject matter even though a law of nature, natural phenomenon, or abstract idea would not, by itself, be entitled to such protection.”

15. The “exceptions” referred to in the US cases, e.g laws of nature, have some equivalents in Art.52(2). But that is really, as we have pointed out, because they are by their very nature incapable of being the subject of a legal monopoly. The fact that there are some parallels between what is declared by the judges to be unpatentable in the US and what is declared by Art.52(2) to be an excluded category of invention is no guide as to the interpretation of Art. 52.

Other considerations

16. Before moving on we would add three things. First there has been some political pressure on Europe to remove or reduce the categories of non-inventions. Part of that has come, Mr Birss told us, from the fact that TRIPS (the *Agreement on Trade Related Intellectual Property Rights*, (1994), Annex IC to the *Marrakesh Agreement Establishing the World Trade Organisation*) does not have the same explicit categories of non-invention as the EPC. It says (Art.27(1)):

“Subject to the provisions of paragraphs 2 and 3 [which roughly correspond to the Art.53 exceptions] patents shall be available for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application. patents shall be available and patent rights enjoyable without discrimination as to ... the field of technology”

Some of the Art.52(2) excluded categories are not fairly within the description “field of technology” and so not within TRIPS (e.g. aesthetic creations) but others seem to be within it – the paradigm example being computer programs. Hence the pressure. Whether “methods for doing business” are a “field of technology” within the meaning of TRIPS is perhaps debatable. The point does not arise here.

17. Secondly there is pressure from would-be patentees on patent offices. People are applying for what are, or arguably are, business method and computer program patents in significant numbers. This is evidenced, for example, by the fact that whereas a few years ago the Comptroller only had one or two hearings a year concerned with these topics, he now has about four a week – a number are awaiting on the outcome of these appeals.
18. This pressure in part stems from the fact that, following *State Street* (business methods) and *Alappat* (computer programs) people have been getting patents for these subject-matters in the USA. Since they can get them there, they must as a commercial necessity apply for them everywhere. If your competitors are getting or trying to get the weapons of business method or computer program patents you must too. An arms race in which the weapons are patents has set in. The race has naturally spread worldwide (for a recent Australian instance see *Grant v Commissioner of Patents* [2006] FCAFC 120m July 17th 2006 where the Federal Court of Appeal refused a patent for a method of protecting assets from bankruptcy involving the setting up of a trust, a gift to the trust, and a loan back with the trustee taking a charge on the loan). The Australian legislation is different from that of Europe so the decision itself is of no relevance here – as is the fact that Mr Macrossan has been granted an Australian patent for his invention.
19. Thirdly it by no means follows that because of pressure from applicants, the grant of patents for excluded categories should be allowed or that the excluded categories (particularly business methods and computer programs) should be construed narrowly. Just as with arms, merely because people want them is not sufficient reason for giving them.

20. Fourthly despite the fact that such patents have been granted for some time in the US, it is far from certain that they have been what Sellars and Yeatman would have called a “Good Thing.” The patent system is there to provide a research and investment incentive but it has a price. That price (what economists call “transaction costs”) is paid in a host of ways: the costs of patenting, the impediment to competition, the compliance cost of ensuring non-infringement, the cost of uncertainty, litigation costs and so on. There is, so far as we know, no really hard empirical data showing that the liberalisation of what is patentable in the USA has resulted in a greater rate of innovation or investment in the excluded categories. Innovation in computer programs, for instance, proceeded at an immense speed for years before anyone thought of granting patents for them as such. There is evidence, in the shape of the mass of US litigation about the excluded categories, that they have produced much uncertainty. If the encouragement of patenting and of patent litigation as industries in themselves were a purpose of the patent system, then the case for construing the categories narrowly (and indeed for removing them) is made out. But not otherwise.
21. In our opinion, therefore, the court must approach the categories without bias in favour of or against exclusion. All that is clear is that there was a positive intention and policy to exclude the categories concerned from being regarded as patentable inventions. We must simply try to make sense of them using the language of the Convention.
22. It was suggested to us that Pumfrey J was of the view that the court should incline towards patentability in the case of computer programs when he said in *Research in Motion v Inpro* [2006] EWHC 70 (Pat) at [187]:

“I am anxious that these exclusions are not given too wide a scope. All modern industry depends upon programmed computers, and one must be astute not to defeat patents on the ground that the subject matter is excluded under Art.52 unless the invention lies in excluded subject matter as such.”

We do not so read him. He was just sensibly warning against saying “well the claim involves the use of a computer program so it must be excluded”.

The Case Law

23. The EPC came into force in 1978 but the case-law on the excluded categories really started only about 10 years later. We have to examine a mix of UK and EPO case-law, for there is much interplay between them. We must also consider some decisions of national courts in other European countries. There is now a large body of case law. Rather than burden the flow of our main judgment with the detail, we have set out our review in an Appendix.
24. It is clear that a whole range of approaches have been adopted over the years both by the EPO and national courts. Often they lead or would lead to the same result, but the reasoning varies. One is tempted to say that an Art.52(2) exclusion is like an elephant: you know it when you see it, but you can’t describe it in words. Actually we do not think that is right – there are likely to be real differences

depending on what the right approach is. Billions (euros, pounds or dollars) turn on it.

25. The decisions of the EPO Boards of Appeal are mutually contradictory. To say that is not to criticise anyone. On the contrary the Boards of Appeal have each done what they think is right in law – as befits tribunals exercising a judicial function. But surely the time has come for matters to be clarified by an Enlarged Board of Appeal. Under Art.112(1)(b) of the EPC the President of the EPO has the power to refer a point of law to an Enlarged Board where two Boards of Appeal have given different decisions on that question. That is now clearly the position. There are indeed at least four differing points of view. We have no power to refer any question and must reach our decision now independently of what any Enlarged Board might decide if and when there is a reference. Nonetheless we have ventured to formulate questions which might be asked of an Enlarged Board in the hope of encouraging a reference. We add that the Comptroller supports us in this course.
26. Our summary of the various approaches which have been adopted is as follows:

(1) The contribution approach

Ask whether the inventive step resides only in the contribution of excluded matter – if yes, Art.52(2) applies.

This approach was supported by Falconer J in *Merrill Lynch* but expressly rejected by this Court.

(2) The technical effect approach

Ask whether the invention as defined in the claim makes a technical contribution to the known art - if no, Art.52(2) applies. A possible clarification (at least by way of exclusion) of this approach is to add the rider that novel or inventive purely excluded matter does not count as a “technical contribution”.

This is the approach (with the rider) adopted by this Court in *Merrill Lynch*. It has been followed in the subsequent decisions of this Court, *Gale* and *Fujitsu*. The approach (without the rider as an express caution) was that first adopted by the EPO Boards of Appeal, see *Vicom*, *IBM/Text processing* and *IBM/Data processor network*.

(3) The “any hardware” approach

Ask whether the claim involves the use of or is to a piece of physical hardware, however mundane (whether a computer or a pencil and paper). If yes, Art.52(2) does not apply. This approach was adopted in three cases, *Pension Benefits*, *Hitachi* and *Microsoft/Data transfer* (the “trio”). It was specifically rejected by this Court in *Gale*.

However there are variants of the “any hardware” approach:

(3)(i) Where a claim is to a method which consists of an excluded category, it is excluded by Art.52(2) even if hardware is used to carry out the method. But a claim to the apparatus itself, being “concrete” is not so excluded. The apparatus claim is

nonetheless bad for obviousness because the notional skilled man must be taken to know about the improved, excluded, method.

This is the *Pension Benefits* approach.

(3)(ii) *A claim to hardware necessarily is not caught by Art.52(2). A claim to a method of using that hardware is likewise not excluded even if that method as such is excluded matter. Either type of claim is nonetheless bad for obviousness for the same reason as above.*

This is *Hitachi*, expressly disagreeing with *Pensions Benefits* about method claims.

(3)(iii) *Simply ask whether there is a claim to something “concrete” e.g. an apparatus. If yes, Art.52(2) does not apply. Then examine for patentability on conventional grounds – do not treat the notional skilled man as knowing about any improved excluded method.*

This is *Microsoft/Data Transfer*.

Discussion

27. We begin with the last approach, that a claim to hardware is enough, an approach shared by the trio. Some examples outside the context of computer programs and methods of doing business show why it must be wrong. Consider for instance the following:

- i) a claim to a book, e.g. to a book containing a new story the key elements of which are set out in the claim;
- ii) a claim to a standard CD player or iPod loaded with a new piece of music.

Everyone would agree that the claims must be bad – yet in each case as a whole they are novel, non-obvious and enabling. To deem the new music or story part of the prior art (the device of *Pension Benefits* and *Hitachi*) is simply not intellectually honest. And, so far as we see, the *Microsoft* approach, which discards that device, would actually lead to patentability.

28. There is moreover a clear conflict between the variants. Mr Birss described the first two as “The Lord Giveth, the Lord Taketh away.” The giving is the passing of Art.52(2), the taking away being the device of treating the excluded matter as known. Mr Macrossan rightly pointed out that this was not so with the third variant – as he put it “the Lord Giveth but the Lord Doth not Always Taketh away.”

29. We are conscious of the need to place great weight on decisions of the Boards of Appeal, but, given the present state of conflict between the old (*Vicom* etc.) and the new (*Hitachi* etc.) approaches, quite apart from the fact that there are three distinct new approaches each to some extent in conflict with the other two, it would be premature to do so. If and when an Enlarged Board rules on the question, this Court may have to re-consider its approach. If such a ruling were to differ from what this court had previously decided a question would arise as to what should be done: should this court (and first instance courts) follow the previous rulings in our courts, leaving it to the House of Lords (or the future Supreme Court) to decide

what to do or should the new ruling of the Enlarged Board be followed? It may be that the better course then would be for a decision of the first instance court to be “leapfrogged” to the House of Lords or Supreme Court. For the present we do not have to decide this. All we decide now is that we do not follow any of the trio. The fact that the BGH has already declined to follow *Hitachi* reinforces this view – doing so will not lead to European consistency.

30. An element of the reasoning in the trio is that the various categories of Art.52(2) must have something in common: that they are all limited to something abstract or intangible. We think this is a mistaken assumption. We have already observed that the categories are disparate with differing policies behind each. There is no reason to suppose there is some common factor (particularly abstractness) linking them. The *travaux préparatoires* at least confirm this.
31. One thing does need to be said. Before you get to the “as such” qualification, you must make up your mind as to the meaning of the category which is excluded. Computer programs call for particular consideration here. There are, in principle, two views about what is meant by “computer program” in Art.52. A narrow view is that it means just the set of instructions as an abstract thing albeit they could be written down on a piece of paper. A wider view is that the term covers also the instructions on some form of media (floppy disk, CD or hard drive for instance) which causes a computer to execute the program – a program which works. This court and the earlier Board of Appeal decisions clearly take the latter view, as for instance in *Gale* and *Vicom*. The trio take the narrow view, working on the premise that all the exclusions are limited to the abstract. We are bound to say that we consider that wrong: so to limit the meaning of “computer program” would be to render the exclusion without real content. We think the framers of the EPC really meant to exclude computer programs in a practical and operable form. They meant to exclude real computer programs, not just an abstract series of instructions.
32. What then of the first, the “contribution” approach? Were the question open for free decision now, we think there is a lot to be said for it. Patents are essentially about information as to what to make or do. If all the patentee has taught new is something about an excluded category, then it makes sense for the exclusion to apply. If he has taught more, then it does not. We are not ourselves convinced that the two objections to this approach are valid.
33. The first objection is that it involves an inquiry as to what is old, whereas you ought to be able to determine whether an exclusion applies just by considering what is claimed – is this the sort of thing excluded? If one thinks about this however, particularly with the aid of examples, one can see that the inquiry may inevitably involve a question of discerning what is old so that it can be excluded. Take for instance a claim to a hard drive loaded with a piece of music. If it is an old hard drive, all that has been added is an excluded item. And this would be so even if the claim went to the trouble of spelling out element by element all the features of the old hard drive. But suppose the hard drive specified were itself new and inventive? Then a claim to such a drive loaded with a piece of music would be allowable. It would not be the individual piece of music (even if new) which caused the claim to escape Art.52(2) but the newness of the kind of hard drive on which the music was loaded. Of course in practice an inquiry as to what is old may not be difficult – indeed it will generally be self-evident. Claims to a piece of music or a computer

program loaded onto a known form of medium, or a claim to a particular system of conducting business over the internet using standard hardware are good examples. No detailed examination of the prior art is necessary there.

34. The second objection to the contribution approach is that accepted by this court in *Merrill Lynch* – a *reductio ad absurdum* argument. An example of it runs thus: suppose the “discovery” of the genetic (nucleotide) sequence which encodes for a particular valuable protein and a claim to a novel cloning vector incorporating that sequence. If you “strip out” the discovery all you have is a known sort of cloning vector. So all that has been added is the discovery – since that is unpatentable the claim is unpatentable too. That cannot be right – it would exclude many valuable inventions. Hence the contribution approach is wrong.
35. We are not ourselves convinced by this, though we are bound by the reasoning: the new cloning vector is more than a mere discovery, just as Whitford J’s compass is more than the discovery that a magnetised iron bar points north. You cannot “strip out” the “discovery”. The EPO Boards of Appeal are of the same opinion, see *Salk/Multimeric Receptors* (2002) T 0338/00.
36. In this regard the position is different from that of computer programs. A physical embodiment such as a cloning vector employing knowledge of the discovery of a DNA sequence is not the discovery as such, but a computer program loaded on to chip or hard drive is a computer program as such within the meaning of Art.52(2) and (3) – because “computer program” includes a working computer program on a medium.
37. We would add that we are not sure that the determination of the precise sequence of a piece of DNA is fairly to be regarded as a mere “discovery” in any event. Columbus “discovered” America, but those who in due course mapped it would not normally be said to have “discovered” the detail they put on their maps. We do not examine the fairly metaphysical question of whether there is a difference between a “discovery” and elucidation of detail such as a gene sequence further. It is not necessary to do so and the waters are deep enough already.
38. The fact is that this court is bound by its own precedent: that decided in *Merrill Lynch, Gale* and *Fujitsu* – the technical effect approach with the rider. We think we must apply it as we understand it, namely as set out above. That we will proceed to do.
39. However before doing so we must consider the approach which the Comptroller, through Mr Birss, urges upon us. We must in particular consider whether it is consistent with that which has already been decided.
40. The approach is in 4 steps:
 - “(1) properly construe the claim
 - (2) identify the actual contribution;
 - (3) ask whether it falls solely within the excluded subject matter;

(4) check whether the actual or alleged contribution is actually technical in nature”.

41. The Comptroller submits that this approach is structured and thus helpful to the public and examiner alike and is consistent with the principles enunciated in *Merrill Lynch*. He further submits:

“A structured approach needs to be workable across the whole field of Section 1(2). This is important because although the policy behind different exclusions is not uniform, the structure of the legislation requires that they ought to work the same way. A structured approach will also allow the examiners and hearing officers applying this area of law to follow a consistent scheme and will allow the public to see how a decision has been arrived at. A problem the Comptroller is often confronted with is reliance by applicants on broad observations from earlier decisions which work well in the particular circumstances in which they were made but break down when applied elsewhere”. (Mr Birss’ skeleton argument).

We think this structured approach is indeed consistent with what has been decided by this court. It is a re-formulation in a different order of the *Merrill Lynch* test.

42. No-one could quarrel with the first step – construction. You first have to decide what the monopoly is before going on the question of whether it is excluded. Any test must involve this first step.
43. The second step – identify the contribution - is said to be more problematical. How do you assess the contribution? Mr Birss submits the test is workable – it is an exercise in judgment probably involving the problem said to be solved, how the invention works, what its advantages are. What has the inventor really added to human knowledge perhaps best sums up the exercise. The formulation involves looking at substance not form – which is surely what the legislator intended.
44. Mr Birss added the words “or alleged contribution” in his formulation of the second step. That will do at the application stage – where the Office must generally perform accept what the inventor says is his contribution. It cannot actually be conclusive, however. If an inventor claims a computer when programmed with his new program, it will not assist him if he alleges wrongly that he has invented the computer itself, even if he specifies all the detailed elements of a computer in his claim. In the end the test must be what contribution has actually been made, not what the inventor says he has made.
45. The third step – is the contribution solely of excluded matter? – is merely an expression of the “as such” qualification of Art.52(3). During the course of argument Mr Birss accepted a re-formulation of the third step: Ask whether the contribution thus identified consists of excluded subject matter as such? We think either formulation will do – they mean the same thing.

46. The fourth step – check whether the contribution is “technical” – may not be necessary because the third step should have covered that. It is a necessary check however if one is to follow *Merrill Lynch* as we must.
47. As we have said this test is a re-formulation of the approach adopted by this court in *Fujitsu*: it asks the same questions but in a different order. *Fujitsu* asks first whether there is a technical contribution (which involves two questions: what is the contribution? is it technical?) and then added the rider that a contribution which consists solely of excluded matter will not count as a technical contribution.
48. Mr Thorley criticised the Comptroller’s approach on the basis it was a re-writing of the statutory test: it either meant the same thing in which case it was unnecessary or it meant something different in which case it was wrong (cf. the apocryphal words of Caliph Umar about the destruction of the library of Alexandria and the Word of God). We do not accept that. It is, we think, a structured and more helpful way of re-formulating the statutory test. What Mr Thorley was unable to do was to pinpoint any specific way in which the test differed from the statutory test as interpreted by this Court.
49. Accordingly we propose to apply the Comptroller’s structured approach to both cases under appeal. To these we now turn.

The Aerotel Appeal

50. The patent has two sets of claims, method claims (1-8) and system claims (9-23). It is only necessary to set out claims 1 and 9:

“1. A method of making a telephone call from any available telephone, comprising: obtaining a special code by making a prepayment; inserting the prepayment in a memory in a special exchange and being allocated to the special code in the memory for use in verifying a calling party call; dialling the special exchange when a telephone call connection is desired; inputting the special code for verification; inputting the number of called party; verifying at the special exchange by checking the special code and comparing the prepayment less any deductions for previous calls in the memory with the minimum cost of a call to the called party station; connecting the called and calling parties’ stations in response to said verification; monitoring the remaining prepayment less deductions for the running cost of the call; and disconnecting the call when the remaining prepayment has been spent by the running cost of the call.

9. A telephone system for facilitating a telephone call from any available telephone station, comprising:

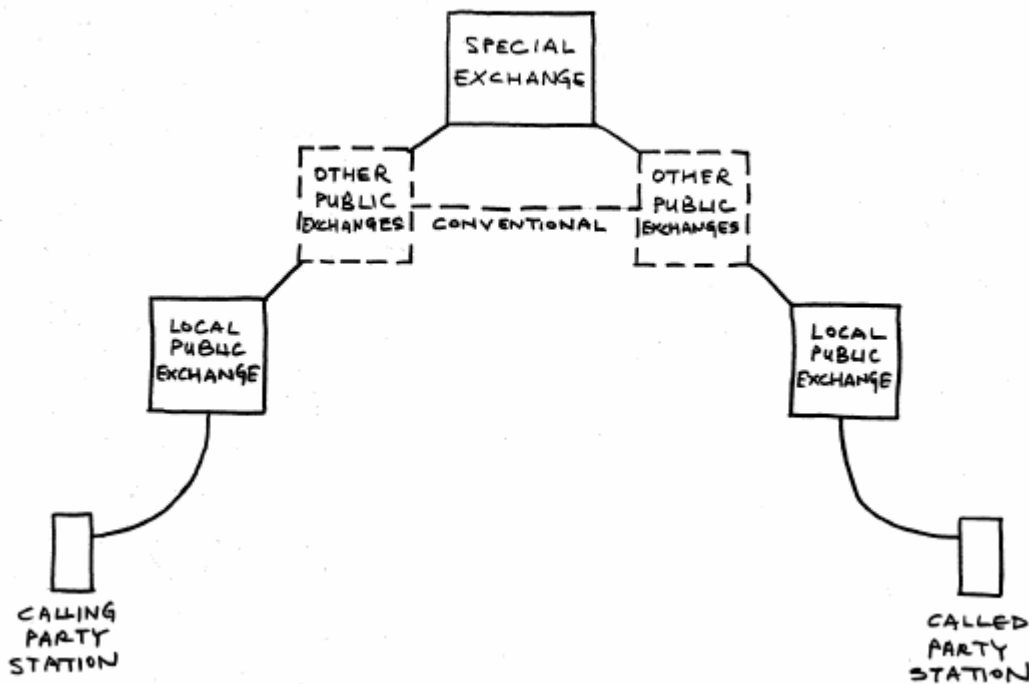
means for coupling a calling party station to a special exchange;

memory means in the special exchange for storing customer special codes and prepayment information individual to each customer;

means for verifying the calling party responsive to a code transmitted from the calling party station to the special exchange so as to verify that the code matches the special customer code in the memory means and the calling party has unused credit; and

means for connecting said calling party station to a called station responsive to the verification.”

- 51. We concentrate on the system claim first. Although called a “system” it is actually a claim to a physical device consisting of various components. Mr Thorley helpfully provided a simplified diagram of it:



- 52. A conventional method of making a phone call involves the caller dialling the callee’s number. The call goes through a number of public exchanges with an ultimate connection to the callee. The conventional route is shown in dotted lines. A system of measuring call duration applied to appropriate rates computes the cost. If the caller has no account running from his station (e.g. is in a call box) he will have to pre-pay. The patentee’s idea is to have an extra piece of equipment which he calls a “special exchange”. The caller has an account with the owner of that and deposits a credit with him. The caller has a code. To make a call he calls the number of the special exchange and inputs his code and then the callee’s number. If the code is verified and there is enough credit he is put through: the call will be terminated if his credit runs out.

53. The important point to note is that the system as a whole is new. And it is new in itself, not merely because it is to be used for the business of selling phone calls. So, moving on to step two, the contribution is a new system. It is true that it could be implemented using conventional computers, but the key to it is a new physical combination of hardware. It seems to us clear that there is here more than just a method of doing business as such. That answers the third step. Finally the system is clearly technical in nature. We see no Art.52(2) objection to the claim.
54. Turning to the method claims, they are essentially to the use of the new system. Given that that is free of a s.52(2) objection, then the narrower claim to its use must be too. Again the contribution is not just a method of doing business but the use of a new apparatus for such a method. So there is more than just a business method. And the method involves the use of apparatus and so is technical.
55. The Judge held otherwise. He considered solely the method claim. What persuaded him that it was a method of doing business as such was, we think, a misunderstanding of the evidence. He said:

“[19] ... It is clear that none of the equipment which is used in the method is new equipment. If that were not clear from the patent itself, it is made clear by the evidence of Mr. Hart, who is the expert called on behalf of Aerotel itself. Although he says that the system described in the patent has revolutionised the way in which telephone calls can be made and the way in which charges can be processed, he, none the less, is clear that the method would have been implemented using an electronic control exchange of a kind that had been available in the UK from the 1970s. Nothing else in the patent of a technical nature, in the sense of equipment, is said to be new and none of that technical equipment is described except in the most general terms.”

And later:

“[20] ... the question is, as it seems to me, how is that known equipment used? If it is used in a way that amounts to no more than a method of conducting business, then it still falls outside the area in which a patent can be granted.”

56. What Mr Hart actually said was:

“The Patent provides a new method and system for facilitating telephone calls. A skilled reader of the Patent in 1985 would have been able to implement the described special exchange using an electronic control exchange of the kind that was available in the UK and elsewhere at that time”

That is not saying that the equipment used in the method is not new. Still less is it saying the system is not new. It is merely saying that the system could have been implemented at the time using known components. So we think the Judge misassessed the contribution of the inventor – he was not saying “use existing

apparatus for my new method” he was saying “create a new overall combination of apparatus using known types of apparatus – and use that combination for my method.”

57. We therefore allow the appeal. If it were not plain already we would add that we do this not on the basis of *Hitachi* which was argued as a first point by Mr Thorley.

The Macrossan Appeal

58. We borrow the description of Mr Macrossan’s application from Mann J and the hearing officer:

“The application claims a patent for an automated method of acquiring the documents necessary to incorporate a company. It involves a user sitting at a computer and communicating with a remote server, answering questions. Thereafter, in the words of the Decision:

‘The essence of the invention is that by means of posing questions to a user in a number of stages, enough information is gleaned from the user's answers to produce the required documents. Questions posed in the second and subsequent stages are determined from previous answers provided and the user's answers are stored in a database structure. This process is repeated until the user has provided enough information to allow the documents legally required to create the corporate entity to be generated. A number of document templates are also stored and the data processor is configured to merge at least one of these templates with the user's answers to generate the required legal documents. The documents may then be sent in an electronic form to the user for the user to print out and submit, mailed to the user, or submitted to the appropriate registration authority on behalf of the user’”.

59. Claim 1 (set out with Mr Birss’ helpful layout and emphasis) of the proposed patent is as follows:

A method for producing documents for use in the formation of a corporate entity using a data processing system,

the system comprising

a corporate entity creation service provider data processing apparatus including a data processor and data storage means associated with the processor;

remote client data processing apparatus;

and interactive communication means in communication with the data processor and the client data processing apparatus;

wherein the system

assists in the formation of a corporate entity in at least one answering session in which

the interactive communication means is configured to allow the data processor, configured in accordance with an application program

running on the data processor, to communicate sets of one or more questions to the client data processing apparatus for presentation to a user attempting to form a corporate entity,

and *allows* the data processor to receive from the client data processing apparatus the user's answers to the questions and to store the answers in the data storage means;

the data processor, configured in accordance with the application program and using the interactive communication means, is arranged

to successively *select and communicate* a further set of one or more questions to the client data processing apparatus for presentation to the user,

to *receive* the user's answers thereto

and to *store* the answers in the data storage means,

and to *repeat* said selection and communication of further sets of one or more questions

until the data processor, configured in accordance with the application program, *has received and stored enough answers* to allow the data processor to determine the documents that are legally required for the formation of the corporate entity;

wherein the selection of at least some of said further sets of questions by the data processor *is based on the received user's answers* to one or more previous questions;

wherein the data processor, configured in accordance with the application program,

determines the documents that are legally required for the formation of the corporate entity

and *generates* said legally required document in an electronic form using at least some of the user's answers that have been stored in the data storage means

and wherein the data storage means includes a database structure having a plurality of user answer fields in which at least a selected one of the user's answers are stored;

and wherein a store of document templates is accessible by the data processor, and the data processor is configured by the application program to *merge* at least one selected document template corresponding to said legally required documents, with at least a subset of the stored user's answers to generate said legally required documents."

60. The method is clearly intended in practice to be one carried out by a user accessing an internet site, though, as Mr Macrossan points out, that is not necessarily so. His PCT application from which the British Application is derived specifically mentions the internet as a possible interactive communications device for his method.
61. The principal points before Mann J were concerned with excluded matters. Mann J held that the application was;

- a) for a method of performing a mental act as such;
 - b) not for a method of doing business;
 - c) for a computer program as such.
62. Before us, as we have said in the Appendix, the Comptroller does not support Mann J’s decision as to a mental act: we are doubtful as to whether the exclusion extends to electronic means of doing what could otherwise have been done mentally. But it is unnecessary to decide the point, for we are firmly of the opinion that the patent is both for a method of doing business as such and for a computer program as such.
63. We turn to a method of doing business as such. Step 1 of the structured approach (construe the claim) causes no difficulty. Step 2 calls for an assessment of the inventor’s contribution. That again poses little difficulty. Mr Macrossan does not suggest he has invented any new kind of hardware. What he has thought of is an interactive system which will do the job which otherwise would have been done by a solicitor or company formation agent. Questions are asked, the answers incorporated in the draft, and depending on some particular answers, further questions are asked and the answers incorporated. That is his contribution.
64. Step 3 – is that contribution solely excluded matter? That depends on the meaning of “a scheme rule or method of doing business as such”. The hearing officer held that the claim was indeed just for that. She said:
- “To my mind, the production of legally compliant documents is just the sort of activity that falls within the business method exclusion. It is something that solicitors are paid to do. Thus, I find the present invention to fall potentially within the “business method” exclusion”.
65. Her reference to “potentially” was because she had not yet reached the stage of considering whether there was anything technical in character about the claim, as required by *Merrill Lynch*. She then went on to find none and thus concluded that the claim was indeed to a method of doing business as such.
66. Mann J disagreed. He said:
- “[30] The activity involved in the invention is a business service, or end product, for which the customer is prepared to pay and for which the customer contracts. That may entitle the invention to the title “a method of providing business services”, but that is not what the exclusion in the Act is aimed at, in my view. The exclusion is aimed more at the underlying abstraction of business method – the market making technique in *Merrill Lynch*; or the way of doing the auction in *Hitachi*. In *CFPH* Mr Prescott identified joint-stock companies themselves as being methods of carrying out business – see paragraph 41 of his judgment. That has the necessary level of abstraction or method (business method). The invention in the current application does not. It is merely a facility which might

be used in a business; or, to put it another way, a tool. That cannot be said of the inventions in *Merrill Lynch* and *Hitachi*. In those cases the inventions were more than a tool – they were ways of conducting the entire business in question. Again, in *Pensions Benefit* Board of Appeal held that the operation of a pensions scheme on a computer amounted to a method of doing business. In doing so it said that:

‘All the features of this claim are steps of processing and producing information having purely administrative, actuarial and/or financial character. Processing and producing such information are typical steps of business and economic methods.’

While that does not claim to be, and should not be treated as, a definition of a “method of doing business” it still, to my mind, captures something of the essence of the point. It does not get particularly close to describing the invention in this case.”

67. We do not agree. Implicit in this reasoning are two things, first that there must be something abstract about a method before the exclusion can apply and second that the exclusion only applies where what is claimed involves the completion of a business transaction – the cash register must ring or at least a debt become due.
68. As to the first point, we have already observed that there is no overarching principle that the exclusions are limited to abstract matters. There is no reason so to limit the business method exclusion. Besides, how is one to tell whether an idea is sufficiently abstract to come within the exclusion? Whether as an abstract or generalised activity or as a very specific activity, if it is a method of doing business as such it is excluded.
69. Nor do we see any requirement that the exclusion be limited to a completed transaction. Double entry bookkeeping was a good idea, but it was just a method of doing business, even though there was no completed transaction involved. So also the idea of having three trays: “in”, “out” and “too difficult”. They are all ways of conducting a business and no more.
70. Confirmation that the exclusion is not limited to completed business transactions is provided by both the French and German versions of the EPC, which have equal weight with that of the English version. These versions read:

“les plans, principes, et méthodes ... dans le domaine des activités économiques” [“in the domain of economic activities”]

“Pläne, Regeln, unter Verfahren ... für geschäftliche Tätigkeiten” [“business activities”]
71. The judge described Mr Macrossan’s idea as “a tool”, the notion being that it was akin to any other tool used in a business such as a telephone or a machine which makes nails. But as Aldous LJ pointed out in *Fujitsu* at p.618 in the context of the

computer program exclusion, the fact that a new tool is provided does not solve the question. Moreover the analogy is not apt: each of those devices are free-standing. Mr Macrossan's method is for the very business itself, the business of advising upon and creating appropriate company formation documents.

72. The final step is to ask whether there is anything technical about the contribution – there obviously is none beyond the mere fact of the running of a computer program.
73. We turn to the “computer program as such” objection. Here Mann J and the hearing officer were unanimous in saying the exclusion applied and we agree. Applying the structured test, again there is no difficulty over step 1. Step 2 – what is the contribution? – is again straightforward. It is to provide a computer program (in practice probably an interactive website) which can be used to carry out the method. The hardware used is standard and is not part of the contribution. Step 3 – is the contribution solely of excluded matter? – is again easy. The contribution is just the devised program up and running. Step 4 – is that contribution technical? – is again easy. No. So the exclusion applies.
74. Accordingly we hold that Mr Macrossan's idea is excluded from patentability. He did raise one further matter before us with which we must deal briefly. It relates to the proceedings before the Comptroller. He suggests they were flawed for apparent bias – because there was an undisclosed examiner's report to the Hearing Officer and because of something said on the Patent Office website saying the Office has a strong tradition of rejecting patent applications for software. There is nothing in either of them for the reasons given by Mann J. We add that we see no point in the objection either. It does not apply to the hearing before Mann J or us. What Mr Macrossan seeks is remittal to the Office for further consideration. But that would serve no useful purpose. He suggests he might put in further evidence, but nothing relevant is suggested – and in any event it could have nothing to do with the alleged flaw in the first hearing. It would just be an excuse for a second bite.

Proposed Questions for an Enlarged Board

75. It is formally no business of ours to define questions to be asked of an Enlarged Board of Appeal. What we say now is only put forward in case the President of the EPO finds it helpful. If he thinks it pointless or arrogant of us to go this far, he is of course entirely free to ignore all we say. Nonetheless in the hope that there is a spirit of co-operation between national courts and the EPO we ventured to ask the parties what questions might be posed by the President of an Enlarged Board pursuant to Art.112. As we have said the British Comptroller of Patents has encouraged us in this course.
76. The Comptroller and Mr Thorley provided a joint suggestion and Mr Macrossan helpfully his. Having considered the drafts, the questions which we think might be put are as follows:
- (1) What is the correct approach to adopt in determining whether an invention relates to subject matter that is excluded under Article 52?

(2) How should those elements of a claim that relate to excluded subject matter be treated when assessing whether an invention is novel and inventive under Articles 54 and 56?

(3) And specifically:

(a) Is an operative computer program loaded onto a medium such as a chip or hard drive of a computer excluded by Art.52(2) unless it produces a technical effect, if so what is meant by ‘technical effect’?

(b) What are the key characteristics of the method of doing business exclusion?

77. Accordingly we allow the Aerotel appeal and dismiss the Macrossan appeal.

Appendix – Analysis of the Case Law

78. We start with the decision of this court in *Merrill Lynch’s Appn.* (1989) [1989] RPC 561, upholding the decision of Falconer J [1988] RPC 1 but on different grounds. Claim 1 was to a “data processing system for making a trading market in at least one security in which the system proprietor is acting as principal.” The details of the claim set out functions to be performed by the system, which could be operated on a standard computer. Falconer J held the subject-matter unpatentable. His reason was, p.12:

“ In my judgment, where an invention for which a patent is sought involves any of the matters specified in paragraphs (a) (b), (c) and (d) ("an excluded matter"), on its proper construction the qualification in section 1(2) does require of the Patent Office an initial enquiry and assessment as to whether the inventive step resides in the contribution of that excluded matter alone - if only that contribution of the excluded matter is the inventive step, the invention is not patentable by virtue of section 1(2). I endorse, therefore, the view of the principal examiner that in the determination of whether or not an application relates to an excluded thing it is necessary to take into account whether the *non-excluded* features are already known or obvious.”

79. This approach – sometimes called the “contribution approach” though the word “contribution” is not always used in this debate with precisely the same meaning - requires one to ask: what has been added to what is old? If all that has been added is an excluded category (in that case a computer program) then the claim is to the excluded matter as such. Inherent in the approach is an inquiry as to what actually is old. Sometimes the inquiry is so obvious that one hardly notices it is being made – for instance in *Merrill Lynch* it was self-evident that the system involved the use of a known computer.

80. Before *Merrill Lynch* reached this court, it had decided *Genentech’s Patent* [1989] RPC 147. Although the case was essentially about the obviousness of the gene sequence for an important protein called tissue plasminogen activator, this court

considered the categories of exclusion in the context of what was said to be a discovery – namely the gene sequence which caused Tpa to be expressed. Falconer J's decision in *Merrill Lynch* and the EPO Board of Appeal decision in *Vicom* (1986) T208/84, [1987] OJ 14 were examined. The Court of Appeal (particularly Purchas LJ at pp.204-208 and Dillon LJ at pp.239-240) discerned that there was a difference in approach and preferred the reasoning of the EPO in *Vicom*.

81. This reasoning was in the context of claims to a method of digitally processing images and to an apparatus (which could be a standard computer or a specially hard-wired apparatus) for carrying out the method. The Board held that the claims were not to a computer program as such. The Board said:

"[16] 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".

The “technical contribution” in *Vicom* (beyond the mere fact that the program ran on a computer) is perhaps a little elusive. Essentially however it was that the patent was for a new method of and apparatus for manipulating images.

82. What made the Court of Appeal in *Genentech* prefer that approach was what it thought the result would be if you applied Falconer J's reasoning to a case of a discovery. Dillon LJ summarised this at p.239:

"Such a conclusion, when applied to a discovery, would seem to mean that the application of the discovery is only patentable if the application is itself novel and not obvious, altogether apart from the novelty of the discovery. That would have a very drastic effect on the patenting of new drugs and medicinal or microbiological processes".

The reasoning of Whitford J in *Genentech* at first instance was preferred. He had explained it in a homely way thus:

“It is trite law that you cannot patent a discovery, but if on the basis of that discovery you can tell people how it can be usefully employed, then a patentable invention may result. This in my view would be the case, even though once you have made the discovery, the way in which it can be usefully employed is obvious enough. Let me take an example: you discover that a length of iron treated in a certain way will always point to the north. The way in which you can use this discovery to make a direction finding instrument may well be obvious art [sic – perhaps “but”], based on your discovery you could get a patent for it.”

83. Given what was said in *Genentech*, it is hardly surprising that when *Merrill Lynch* reached the Court of Appeal, the reasoning of *Vicom* was preferred. The “technical advance” or “technical contribution” test of *Vicom* was adopted. Fox LJ (with whom the other members of the court agreed) said, p.569:

“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, that it cannot be permissible to patent an item excluded by s.1(2) under the guise of an article which 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 necessary. 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 processing speed as in *Vicom*).”

84. Thus it was that this Court adopted the EPO’s “technical contribution approach.” But that was not the complete story. For the approach to make sense one has to know what a technical contribution is. The next paragraph of Fox LJ’s judgment in effect says that a novel and non-obvious improvement to an excluded category does not count as a technical improvement. He said:

“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 s.1(2). 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 s.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 s.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 s.1(2). In the present case it is such a prohibited item.”

85. So the “technical contribution” theory was adopted by this court but with the important rider that inventive excluded matter could not count as a technical contribution. It was not without some questioning. Mr Birss told us that at first instance Aldous J was apt to say: "Well, that is very interesting, Mr. Birss, but

what does 'technical' mean?" Later, as Aldous LJ, he pointed to difficulties with the concept of "technical contribution" as we shall in due course recount.

86. Before coming to the next UK case, *Gale's Appn.* [1991] RPC 191, we should mention three other EPO cases, consistent with *Vicom* but in which the "technical effect" is more readily discernable. One is from 1987 and the other two from 1988. In *Koch and Sterzel/X-ray method for optimum exposure* (1987) T 26/86 the Board held that a mix of technical and non-technical features was enough to pass Art.52(2).
87. *IBM/Text processing* (1988) T 115/85 was about a text processing program which caused a computer to give automatic visual indications about conditions within the computer. The Board held this was a technical effect and so not within Art.52(2). It said:

"7. Generally the Board takes the view that giving visual indications automatically about conditions prevailing in an apparatus or system is basically a technical problem.

8. The application proposes a solution to a specific problem of this kind namely providing a visual indication about events occurring in the input/output device of a text processor. The solution includes the use of a computer program and certain tables stored in a memory to build up the phrases to be displayed.

9. Even if the basic idea underlying the present invention might be considered to reside in that computer program and the way the tables are structured, a claim directed to its use in the solution of a technical problem cannot be regarded in the Board's opinion as seeking protection for the program as such within the meaning of Article 52(2)(c) and (3) EPC.

10. As stated by this Board already in its decision in case T 208/84 (OJ EPO 1987, 14-23) 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. However, in this context it appears useful to the present Board to observe that it does not follow from this statement that conversely a computer program can under all circumstances be considered as constituting a technical means."

So not all computer programs were "technical means". You have to decide whether a technical problem is being solved.

88. The third case is *IBM/Data processor network* (1988) T6/83. The Board of Appeal said:

“6. The Board holds the view that an invention relating to the coordination and control of the internal communication between programs and data files held at different processors in a data processing system having a plurality of interconnected data processors in a telecommunication network, and the features of which are not concerned with the nature of the data and the way in which a particular application program operates on them, is to be regarded as solving a problem which is essentially technical.”

In short the “technical feature” was the removal of limitations of prior art systems with the result that the data processing system was more flexible and had:

“improved communication facilities between programs and files held at different processors within the known network”

89. Turning back to this country and *Gale*, the applicant had devised a new and better algorithm for finding square roots. Could he patent a read-only-memory chip containing only the instructions to a computer to perform the algorithm? The patent office said “no”, Aldous J said “yes” and this Court held “no”. It is worth recounting what Aldous J said at pp.116-7:

“I have come to the conclusion that the ROM claimed cannot be considered as a claim to an invention which is no more than an invention relating to disqualified matter defined in section 1(2) of the Act. The ROM is an article which can be manufactured. It has one dedicated function. It is an article whose structure has been altered during manufacture so as to perform the function of this method or program defined by the claim. A claim in a patent to such an article cannot to my mind be called a claim relating to a mathematical method or a method for performing a mental act, nor a program for a computer. There is a difference between a claim which relates to a disc containing a program and a ROM with particular circuitry. In the former the disc carries the program and therefore can be considered as in effect a claim relating to the program; where as in the latter the program or method is used as the basis for altering the structure of the ROM which then becomes a dedicated piece of apparatus, which can be used to carry out the program or method.

That difference also applies to the combination of an ordinary computer when programmed, which was referred to by Dillon L.J. in the *Genentech* case. Such a computer even when programmed remains an ordinary computer: the only difference being the fact that it is programmed and therefore in reality what is being claimed is the use of the program. However, in the case where a computer is constructed so as to operate in a particular way by insertion of a ROM the result is a technical change resulting in a different computer. Thus a claim to a computer containing a ROM as defined in Mr. Gale's claim

would in my view be more than a claim to a program. No doubt the claim would cover use of the program, but only when a particular ROM was used. What appears to me to be important is that such a claim relates to a new technical product namely a computer constructed in a particular way.

I believe that the principal examiner was wrong in equating the claimed ROM with a disc carrying a program. A disc serves as a carrier for a program, as no doubt can a ROM. However a ROM is more than a carrier, it is a manufactured article having circuit connections which enables the program to be operated. A claim to a ROM with particular circuitry, albeit defined by functional steps, cannot to my mind be said to relate to the program or the functional steps as such.”

90. We have underlined the key parts of this reasoning – reasoning held wrong by this Court. It shows that a mere “new hardware” test is not enough, if the newness consists of a computer program on a known medium. In the leading judgment by Nicholls LJ it was first held that the application was not to a mathematical method as such:

“ In the present case Mr. Gale claims to have discovered an algorithm. Clearly that, as such, is not patentable. It is an intellectual discovery which, for good measure, falls squarely within one of the items, mathematical method, listed in s.1(2). But the nature of this discovery is such that it has a practical application, in that it enables instruction to be written for conventional computers in a way which will, so it is claimed, expedite one of the calculations frequently made with the aid of a computer. In my view the application of Mr. Gale's mathematical formulae for the purpose of writing computer instruction is sufficient to dispose of the contention that he is claiming a mathematical method *as such*.”

91. But he went on to hold that the claim was to a computer program as such:

“That still leaves the difficulty that those instructions when written, and without more, are not patentable, because they constitute a computer program. Is there something more? In the end I have come to the conclusion that there is not. The attraction of Mr. Gale's case lies in the simple approach that, as claimed, he has found an improved means of carrying out an everyday function of computers. To that extent, and in that respect, his program makes a more efficient use of a computer's resources. A computer, including a pocket calculator with a square root function, will be a better computer when programmed with Mr. Gale's instructions. So it may. But the instructions do not embody a technical process which exists outside the computer. Nor, as I understand the case as presented to us, do the instructions solve a "technical" problem lying within the computer, as happened with patent applications such

T115/85) [1990] E.P.O.R. 107 and *IBM Corp./Data processor network* T06/83), [1990] E.P.O.R. 91. 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 technical field. But, as I understand it, in the present case Mr. Gale has devised an improvement in programming. What his instructions do, but it is all they do, is to prescribe for the cpu in a conventional computer a different set of calculations from those normally prescribed when the user wants a square root. I do not think that makes a claim to those instructions other than a claim to the instructions as such. The instructions do not define a new way of operating the computer in a technical sense, to adopt the expression used in *IBM Corp./Document abstracting and receiving* T22/85, [1990] E.P.O.R. 98, 105.

In short, therefore, the claim is in substance a claim to a computer program, being the particular instructions embodied in a conventional type of ROM circuitry, and those instructions do not represent a technical process outside the computer or a solution to a technical problem within the computer.”

Both the other members of the court expressly agreed with Nicholls LJ as well as giving their own judgments. For present purposes it is not necessary examine them – though there is an inconsistency in the judgment of Sir Nicholas Browne-Wilkinson V-C in that he also held the subject-matter to be excluded on the grounds that it was a mathematical method.

92. So what *Gale* decided is that the computer program exclusion extends not merely to the code constituting a program, but that code as embodied on a physical medium which causes a computer to operate in accordance with that code. More is needed before one is outside the exclusion – as for instance a change in the speed with which the computer works. A technical effect which is no more than the running of the program is not a relevant technical effect. And *Gale* clearly decides that merely putting a new program on a known memory device is not enough to escape Art.52(2).
93. The last of the cases in this court was *Fujitsu* [1997] RPC 608. It is here that Aldous LJ re-voiced his concern about the “technical contribution” test. He said (p.616):

“I, like Nicholls LJ [in *Gale*], have difficulty in identifying clearly the boundary line between what is and what is not a technical contribution. In *Vicom* it seems that the Board concluded that the enhancement of the images produced amounted to a technical contribution. Each case has to be decided upon its own facts.”
94. The application was for a method and apparatus for modelling a synthetic crystal structure. It was to a computer when programmed. The user could select certain

criteria (atom, lattice vector and crystal face). The Office and Laddie J held that it was in substance a method of performing a mental act since the result depended on the personal skill and assessment of the user. That view was considered by this Court but only a provisional view was given because it was held that the application was for a computer program as such. Having so held, Aldous LJ (giving the main judgment with which the other members of the court agreed) said it was unnecessary to decide the mental act issue. He gave his provisional view however which was (p.621):

“Methods of performing mental acts, which means methods of the type performed mentally, are unpatentable, unless some concept of technical contribution is present.”

95. This gives the notion of “mental act” a wide meaning. Mr Birss said the Comptroller was unhappy about such a wide construction. He accepted that that wide meaning had been applied at first instance in two cases, *Raytheon* (1993) [1993] RPC 427 (ship recognition where an image of the ship was compared, in a computer, with digital images of known ships) and *Wang* (1990) [1991] RPC 463 (computer based expert system whereby information was stored in a particular way so it could be accessed).
96. One of the reasons Mann J gave for refusing Mr Macrossan’s application was that it was to a method of performing a mental act. Mr Birss said the Comptroller supported Mr Macrossan on the question of mental act, if we got that far. However the question only arose if we were in favour of Mr Macrossan on the issues of computer program and business method and we ought to rule against him on at least one of these grounds.
97. The Comptroller’s reasons for objecting to the wide meaning of “mental act” (which so far as we can see he once espoused) are that it goes too wide and would cover cases not caught by the computer program as such exclusion. For ultimately every computer program could be said to be the sort of thing that could have been done by a notional mental act.
98. We are not sure this submission is right, or that if it is, it has any consequence other than that the mental act exclusion also covers the computer program exclusion. However, since we reject Mr Macrossan’s appeal on the other grounds it is unnecessary to go into this further other than to say that we are by no means convinced that Aldous LJ’s provisional view is correct. There is no particular reason to suppose that “mental act” was intended to exclude things wider than, for instance, methods of doing mental arithmetic (every now and then someone comes up with a trick for this, for instance Trachtenberg’s system) or remembering things (e.g., in its day, Pelmanism).
99. We return to the main theme. Following *Fujitsu* things went relatively quiet. The EPO was applying the technical contribution test laid down in *Vicom* and the other cases and the same course was followed here. But then the EPO took a different course or courses, a course or courses relied upon by both appellants here. A trilogy of cases of particular importance fall for discussion, *Pension Benefits* (2000), *Hitachi/Auction method* (2004) and *Microsoft/Data Transfer* (2006). They represent the most important of the latest decisions of the Boards in this field. So it

is not necessary to discuss in detail other cases to which we were referred: *Pitney Bowes/Apparatus for and Method of Mail Sorting* (2002) T 767/99 (the method was held not be a business method as such); *Pettersson/System for determining queue sequence for serving customers at a plurality of service points* (1994) T1002/92 (held not be a patent for a business method as such because apparatus was involved); *Walker/Text processor* (2005) T 49/04 (method and device claims using a computer to enhance text readability on a screen, essentially by presenting it in grammatically logical segments – held patentable); and *Geodynamik/Method and device for measuring the compaction degree of a surface* (2002) T1001/99 (method and device for determining degree of compaction of cooling asphalt or the like held patentable because entire claim must be considered, not by reference to whether the contribution of the claimed subject-matter adds to the known art). These other cases also demonstrate the departure from the “technical contribution” approach of *Vicom*.

100. We start with *Pension Benefits* (2000) T0931/95. Claim 1 was to a method of controlling a pension benefits system (“program” in American English). It read:

“1. A method of controlling a pension benefits program by administering at least one subscriber employer account on behalf of each subscriber employer's enrolled employees each of whom is to receive periodic benefits payments, said method comprising:

providing to a data processing means information from each said subscriber employer defining the number, earnings and ages of all enrolled employees of the said subscriber employer;

determining the average age of all enrolled employees by average age computing means;

determining the periodic cost of life insurance for all enrolled employees of said subscriber employer by life insurance cost computing means; and

estimating all administrative, legal, trustee, and government premium yearly expenses for said subscriber employer by administrative cost computing means;

the method producing, in use, information defining each subscriber employer's periodic monetary contribution to a master trust, the face amount of a life insurance policy on each enrolled employee's life to be purchased from a life insurer and assigned to the master trust and to be maintained in full force and effect until the death of the said employee, and periodic benefits to be received by each enrolled employee upon death, disability or retirement.”

There was also an apparatus claim – essentially to an apparatus for performing the method – in practice a computer suitably programmed.

101. What the Board did was to refuse the method claim as one being to a method of doing business as such. It also refused the apparatus claim, but not on the grounds that it was to a computer program as such. We go to the reasoning about the method claim first. The Board began by acknowledging the established “technical effect” test, saying:

“2. According to the case law of the boards of appeal the use of the term "invention" in Article 52(1) EPC in conjunction with the so-called "exclusion provisions" of Article 52(2) and (3) EPC, which mention subject-matter that "in particular shall not be regarded as inventions within the meaning of paragraph 1", is understood as implying a "requirement of technical character" or "technicality" which is to be fulfilled by an invention as claimed in order to be patentable. Thus an invention may be an invention within the meaning of Article 52(1) if for example a technical effect is achieved by the invention or if technical considerations are required to carry out the invention (Case Law of the Boards of Appeal of the European Patent Office, 3rd edition, 1998, chapter I.A.1; Guidelines for Examination C-IV, 2.2).

102. It went on to apply that to the method claim in an essentially conventional way, saying:

“Claim 1 of the main request is, apart from various computing means mentioned in that claim, directed to a "method for controlling a pension benefits program by administering at least one subscriber employer account". All the features of this claim are steps of processing and producing information having purely administrative, actuarial and/or financial character. Processing and producing such information are typical steps of business and economic methods.

Thus the invention as claimed does not go beyond a method of doing business as such and, therefore, is excluded from patentability under Article 52(2)(c) in combination with Article 52(3) EPC; the claim does not define an invention within the meaning of Article 52(1) EPC.

The Board specifically rejected the argument that because the method used a data processing means it had a technical character:

“The feature of using technical means for a purely non-technical purpose and/or for processing purely non-technical information does not necessarily confer technical character to any such individual steps of use or to the method as a whole: in fact, any activity in the non-technical branches of human culture involves physical entities and uses, to a greater or lesser extent, technical means.”

103. The final conclusion on the method claim was:

“Methods only involving economic concepts and practices of doing business are not inventions within the meaning of Article 52(1) EPC.

A feature of a method which concerns the use of technical means for a purely non-technical purpose and/or for processing purely non-technical information does not necessarily confer a technical character to such a method.”

104. Thus far there is nothing remarkable about *Pension Benefits*. It is the reasoning in relation to the apparatus claim which represented a substantial departure from previous case-law:

“In the board's view a computer system suitably programmed for use in a particular field, even if that is the field of business and economy, has the character of a concrete apparatus in the sense of a physical entity, man-made for a utilitarian purpose and is thus an invention within the meaning of Article 52(1) EPC.

This distinction with regard to patentability between a method for doing business and an apparatus suited to perform such a method is justified in the light of the wording of Article 52(2)(c) EPC, according to which "schemes, rules and methods" are nonpatentable categories in the field of economy and business, but the category of "apparatus" in the sense of "physical entity" or "product" is not mentioned in Article 52(2) EPC.

This means that, if a claim is directed to such an entity, the formal category of such a claim does in fact imply physical features of the claimed subject-matter which may qualify as technical features of the invention concerned and thus be relevant for its patentability.

Therefore the board concludes that an apparatus constituting a physical entity or concrete product suitable for performing or supporting an economic activity, is an invention within the meaning of Article 52(1) EPC.”

105. In short, therefore, the Board held that a computer programmed to carry out the unpatentable method was not within the categories of Art.52(2) – the fact that it was a physical thing (“concrete”) was enough to take the case out of Art.52(2).
106. One might have thought at that point that the apparatus claim would have been allowed. But not so. It was refused on the grounds of obviousness under Art.56. This finding was not on the conventional basis of a known piece of prior art, or the common general knowledge. Rather it was on the basis that the skilled man must be taken to know about the method. The method was in effect deemed to form part of the prior art. Here is the reasoning:

“Indeed, the improvement envisaged by the invention according to the application is an essentially economic one, i.e. lies in the field of economy, which, therefore, cannot contribute to inventive step. The regime of patentable subject-matter is only entered with programming of a computer system for carrying out the invention. The assessment of inventive step has thus to be carried out from the point of view of a software developer or application programmer, as the appropriate person skilled in the art, having the knowledge of the concept and structure of the improved pension benefits system and of the underlying schemes of information processing as set out for example in the present method claims.”

107. We turn to *Hitachi* (2004) T258/03. Claim 1 was to “an automatic auction method executed in a server computer”. The method comprised a series of steps which in essence are a Dutch auction, i.e. one in which the auctioneer starts high and lowers the price until a bid is received. If only one bid comes in, the bidder gets the item. If more than one is received, the auction then proceeds upwards in the conventional way until there is a single highest bidder. A layman might be forgiven for thinking this was a method of doing business using a computer. However the Board reasoned otherwise. It started with the apparatus claim:

“3.2 The idea behind the so-called contribution approach applied by earlier jurisprudence of the boards of appeal was that the EPC only permitted patenting "*in those cases in which the invention involves some contribution to the art in a field not excluded from patentability*" (T 38/86, OJ EPO 1990,384, headnote II). In other words, for assessing the first requirement, i.e. the presence of an invention within the meaning of Article 52(1) EPC, a criterion was established which relied on meeting further requirements mentioned in that article, in particular novelty and/or inventive step. Thus, some prior art was taken into account when determining whether subject-matter was excluded under Article 52(2) and (3) EPC:

‘In the above considerations concerning the question whether the claimed invention makes a technical contribution to the art, or involves technical considerations for its implementation which may be regarded as resulting in a technical contribution to the art, any specific prior art (other than general computer art, see point 3.4), for instance D1, has not been taken into account. If this is done, however, nothing in the above considerations will effectively be changed." (T 769/92, OJ EPO 1995, 525, point 3.8).

3.3 However, in more recent decisions of the boards any comparison with the prior art was found to be inappropriate for examining the presence of an invention.”

108. The Board then quoted from *Computer program product/IBM* T 1173/97 and *Pensions Benefits* in a passage we have not yet quoted but do so now:

"Determining the technical contribution an invention achieves with respect to the prior art is therefore more appropriate for the purpose of examining novelty and inventive step than for deciding on possible exclusion under Article 52(2) and (3)" (*IBM* point 8);

"There is no basis in the EPC for distinguishing between 'new features' of an invention and features of that invention which are known from the prior art when examining whether the invention concerned may be considered to be an invention within the meaning of Article 52(1) EPC. Thus there is no basis in the EPC for applying this so-called contribution approach for this purpose" *Pension Benefit* (Headnote and para. 6).

109. The *Hitachi* Board expressly agreed with these statements. It went on to say:

"3.5 Therefore, taking into account both that a mix of technical and non-technical features may be regarded as an invention within the meaning of Article 52(1) EPC and that prior art should not be considered when deciding whether claimed subject-matter is such an invention, a compelling reason for not refusing under Article 52(2) EPC subject-matter consisting of technical and non-technical features is simply that the technical features may in themselves turn out to fulfil all requirements of Article 52(1) EPC."

110. So it went on to hold that the apparatus claim was not excluded by Art.52(2);

"since it comprises clearly technical features such as a 'server computer,' 'client computers' and 'a network.'"

This most dramatically articulates the departure from earlier reasoning – a computer when programmed to conduct a business method is not excluded by Art.52(2). It is neither a computer program or business method "as such." No further "technical contribution" is necessary.

111. The *Hitachi* Board went on to consider the method claim – and expressly differed from *Pensions Benefits* in holding this too was not excluded by Art.52(2):

"4.1 The reasoning above (point 3.5) is independent of the category of the claim. Thus, in the present case, also the method of claim 1 is not excluded from patentability under Article 52(2) EPC."

4.2 This conclusion is not in agreement with headnote II of decision T 931/95 (*Pensions Benefits*) which states that: "A feature of a method which concerns the use of technical means for a purely non-technical purpose and/or for processing purely non-technical information does not necessarily confer a technical character to such a method" (cf also Guidelines C-IV, 2.3.6, penultimate paragraph, second sentence).

4.3 However, in order to be consistent with the finding that the so-called "contribution approach", which involves assessing different patentability requirements such as novelty or inventive step, is inappropriate for judging whether claimed subject-matter is an invention within the meaning of Article 52(1) EPC, there should be no need to further qualify the relevance of technical aspects of a method claim in order to determine the technical character of the method. In fact, it appears to the Board that an assessment of the technical character of a method based on the degree of banality of the technical features of the claim would involve remnants of the contribution approach by implying an evaluation in the light of the available prior art or common general knowledge.

4.4 From a practical point of view, this inconsistency becomes fully apparent when considering the question of whether technical character is conferred to a method using technical means for a purely non-technical purpose. In this case, following the approach taken in T 931/95 [*Pension Benefit*], the mere presence of such means would not necessarily be sufficient to lend the method technical character. In the Board's opinion, any practical answer to this question would have to rely on some weighting of the importance of the features to determine the "core" of the invention, necessarily including considerations on their technical relevance, in particular possible novel or inventive contributions, with respect to the prior art. The Board would like to add that such weighting has already been rejected in early case law of the boards of appeal (see decision T 26/86, OJ EPO 1988,19; headnote II).

4.5 Finally, the Board in its present composition is not convinced that the wording of Article 52(2)(c) EPC, according to which "schemes, rules and methods for performing mental acts, playing games or doing business" shall not be regarded as inventions within the meaning of Article 52(1) EPC, imposes a different treatment of claims directed to activities and claims directed to entities for carrying out these activities. What matters having regard to the concept of "invention" within the meaning of Article 52(1) EPC is the presence of technical character which may be implied by the physical features of an entity or the nature of an activity, or may be conferred to a non-technical activity by the use of technical means. In particular, the Board holds that the latter cannot be considered to be a non-invention "as such" within the meaning of Article 52(2) and (3) EPC. Hence, in the Board's view, activities falling within the notion of a non-invention "as such" would typically represent purely abstract concepts devoid of any technical implications.

4.6 The Board is aware that its comparatively broad interpretation of the term "invention" in Article 52(1) EPC will

include activities which are so familiar that their technical character tends to be overlooked, such as the act of writing using pen and paper. Needless to say, however, this does not imply that all methods involving the use of technical means are patentable. They still have to be new, represent a non-obvious technical solution to a technical problem, and be susceptible of industrial application.

4.7 It is therefore concluded that, in general, a method involving technical means is an invention within the meaning of Article 52(1) EPC.

112. Returning to *Hitachi*, as in *Pension Benefits*, the reader who got this far would think that Hitachi were going to get their patent. But the Board then used the same “device” as in *Pensions Benefits* to refuse the patent on the ground of obviousness:

“5.3 In accordance with the principles set out in decision T 641/00 (OJ EPO 2003,352; cf headnote I), the invention will be assessed with respect to the requirement of inventive step by taking account of only those features which contribute to a technical character. The features that make a technical contribution therefore need to be determined.

5.4 The overall aim of the claimed method is to identify the successful bidder for a product offered for sale at an auction. This aim is not regarded as having technical character, nor has the appellant argued that it has.

On the other hand, features concerned with data transmission and storage, in particular features (a) to (c) of the claim, are technical as such. They are however clearly standard and known for example from D6.

Features (d) to (l) are conditions using the stored information to arrive at the successful bidder. The conditions concern only prices and have, except possibly for feature (h) (cf point 5.8 below), no technical character. It is true that they are performed in a computer and that the overall state of the computer will change for each instruction performed. This is however not regarded as a technical effect but rather as a mere manifestation of the information contained in the prices and conditions. Although the kind of manifestation may be regarded as technical, it is well known in the art of data processing.

5.5 The appellant has argued that the technical effect resides in overcoming the problem in the prior art of delays in propagation of information between the bidders and the server. If the auction is performed online, as proposed in D6 or D2, these delays will influence the outcome of the auction.

5.6 The solution to this problem consists of adapting the known auction method such that it can be performed automatically. In this way, any data transmission delays become irrelevant.

5.7 In the Board's view, however, this solution does not contribute to a technical character and cannot therefore be taken into account for assessing inventive step since it concerns the rules of the auction, i.e. it is not a technical solution to the delay problem described (and solved by technical means) in documents D2 and D6, but a solution entirely based on modifications to the auction method. Method 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.

Furthermore, as acknowledged by the appellant, a prominent feature of the invention is that when more than one bidder offers a certain "desired price" the auction price is increased to sort out the lower bids. This requires certain bid information - a "desired price" and a "maximum price" - and tests of certain conditions. But the feature is fundamentally independent of the computer arrangement for performing the auction. It could just as well be used for conducting a Dutch auction without computer support, for example by collecting bids in writing in a call for tenders procedure, in order to allow the participants not to be present at the auction. The result of such a hypothetical auction would be the same.

The invention can therefore be regarded as a mere automation of the non-technical activity of performing a Dutch auction in the absence of bidders. Any ingeniousness required to develop the rules for the hypothetical auction cannot be considered for inventive step in accordance with the principles outlined in decision T 641/00. The technical part of the invention is thus essentially limited to instructing the server computer to apply the given conditions and perform any necessary calculations.

5.8 Nevertheless, if a step of a method has been designed in such a way as to be particularly suitable for being performed on a computer, it has arguably a technical character. Suggesting such a step might require technical considerations (cf T 769/92, headnote I), namely of the working principles of a computer. This view was also expressed in T 52/85 (not published in the OJ EPO), where a method for displaying a list of expressions semantically related to another linguistic expression was found non-technical exactly because no such technical considerations were necessary: the method was "nothing else but what a human being searching for semantically related words would do" (see point 5.8 of the decision).

The invention under examination may contain such a feature which does not correspond to what a human being would do if performing the auction without computer support. This is the step of raising the auction price successively in order to determine the highest maximum price offered by bidders having proposed the same desired price (step (h)). An auctioneer would presumably do this simply by looking at the bids. Still, the Board is convinced that this way of ranking the bids is a routine programming measure well within the reach of the skilled person. Thus, this feature, even if possibly constituting a technical solution to a problem, would have been obvious to the person skilled in the art of data processing.”

113. We should also refer to the latest EPO Board reasoning on the subject, that contained in *Microsoft/Data transfer with expanded clipboard formats* (2006) T 0424/03. This clearly holds that a claim to a programmed computer is not a “computer program” “as such.” The Board said:

“5.1 Moreover, the Board would like to emphasise that a method implemented in a computer system represents a sequence of steps actually performed and achieving an effect, and not a sequence of computer-executable instructions (i.e. a computer program) which just have the potential of achieving such an effect when loaded into, and run on, a computer. Thus, the Board holds that the claim category of a computer-implemented method is distinguished from that of a computer program. Even though a method, in particular a method of operating a computer, may be put into practice with the help of a computer program, a claim relating to such a method does not claim a computer program in the category of a computer program.”

It also said:

“5.3 Claim 5 is directed to a computer-readable medium having computer-executable instructions (i.e. a computer program) on it to cause the computer system to perform the claimed method. The subject-matter of claim 5 has technical character since it relates to a computer-readable medium, i.e. a technical product involving a carrier (see decision T 258/03 – *Auction method/Hitachi* cited above). Moreover, the computer executable instructions have the potential of achieving the above-mentioned further technical effect of enhancing the internal operation of the computer, which goes beyond the elementary interaction of any hardware and software of data processing (see T 1173/97 - *Computer program product/IBM*; OJ EPO 1999, 609). The computer program recorded on the medium is therefore not considered to be a computer program as such, and thus also contributes to the technical character of the claimed subject-matter.”

So a CD or floppy disk containing a computer program is not a “computer program” as such because in addition to containing the program it will cause a computer to execute the program. The reasoning was bolstered by a finding of “technical character” of enhancing the internal operation of the computer, but is essentially independent of that finding.

114. The Board went on to examine patentability over the nearest prior art (Windows 3.1) and held the invention new and non-obvious. It did not do what was done in *Pension Benefits*, namely to treat the unpatentable computer program as such as part of the prior art. No trace of that reasoning appears.

115. This is inconsistent with *Gale* in this Court and earlier Board decisions such as *Vicom*. It would seem to open the way in practice to the patentability in principle of any computer program. The reasoning takes a narrow view of what is meant by “computer program” – it is just the abstract set of instructions, not a physical artefact which not only embodies the instructions but also actually causes the instructions to be implemented – such as the memory in a computer on which the program is stored.

116. The EPO itself does not appear to regard the lines of thinking in *Pension Benefit*, *Hitachi* and *Microsoft/Data Transfer* as settling the position. We were shown the June 2005 version of the Guidelines for Examination in the EPO, Chapter IV (Patentability). Paragraph 2.3.6 contains two inconsistent passages, one reflecting the pre- and the other the post- *Pension Benefits* positions.

117. The first of these reads:

“While ‘programs for computers’ are included among the items listed in Art. 52(2), if the claimed subject-matter has a technical character, it is not excluded from patentability by the provisions of Art.52(2) and (3). However, a data-processing operation controlled by a computer program can equally, in theory, be implemented by means of special circuits, and the execution of a program always involves physical effects, e.g. electrical currents. According to T 1173/97 [*IBM/computer program*], such normal physical effects are not in themselves sufficient to lend a computer program technical character. But if a computer program is capable of bringing about, when running on a computer, a further technical effect going beyond these normal physical effects, it is not excluded from patentability, irrespective of whether it is claimed by itself or as a record on a carrier”

And the second:

“A computer system suitably programmed for use in a particular field, even if that is, for example, the field of business and economy, has the character of a concrete

apparatus within the meaning of Art. 52(1) (see *Pension Benefit*)”

The Guidelines do not refer to *Hitachi* or *Microsoft* which may have been decided too late for inclusion (*Microsoft* certainly was). Their Editor would now have an impossible task if he were to try to write something consistent with all the cases.

118. We return to the first instance jurisprudence of this country. In *Halliburton v Smith* [2005] EWHC 1623 (Pat) Pumfrey J held that claims to a method of designing a drill bit were to methods of performing a mental act even though they could be carried out by computer program. They were curable by amendment to a process of manufacturing a bit using the design process. As we have said we have doubts as to whether the mental act exclusion is that wide. The case as such is of no real assistance here since it was not directly concerned with either the computer program or business method exclusion. However Pumfrey J’s discussion of the position in regard to these at [215] – [217] provides a valuable insight. He repeated what he said there almost verbatim but with a little more explanation in *shoppalotto.com’s appn.* [2005] EWHC 2416 (Pat); [2006] RPC 293. We take the quotation from there:

[6] A moment's thought will show that it is not possible to provide an exhaustive definition of "invention". The Convention does not attempt to interpret the word but provides a list of things which are excluded, whether or not they would be regarded as inventions.

[7] This is not merely of theoretical interest. The importance of the programmed computer in modern industry, and the recent expansion in attempts to patent business methods, have ensured a substantial body of cases in the Technical Boards of Appeal of the EPO relating to these two exclusions. Discoveries and scientific theories have never given any difficulty, I suppose because it is difficult to work out how to draft a claim to either, but the scope and meaning of the other provisions are not straightforward.

[8] Before any attempt is undertaken to reconcile the various decisions on these topics (a task which, in my view, is unlikely to be crowned with success) I think that the would-be analyst needs to consider whether the excluded matters have anything in common. In my view, they do not. They are a heterogeneous collection, some of which (aesthetic creations) have their own form of protection, others of which (discoveries, mathematical methods and scientific theories) have never been accepted as suitable subjects for monopolies in themselves, on obvious but different policy grounds. The problems are really caused by (c) and (d), which, by reason of their exclusion only to the extent that the patent relates to the subject-matter as such, are remarkably difficult to assess in cases lying near the boundary, particularly as it is difficult to discern any underlying policy. To take a straightforward example, do we only exclude

computer programs as such because computer programs are protected by copyright, like aesthetic creations which can likewise be used industrially? Or is there a practical objection, in that this is an area which is exceptionally difficult to search? Or is there some other reason? Whatever the reason, it may possibly be that it is not the same as the reason for excluding methods of doing business.

[9] There has been a tendency, especially in the earlier decisions of the Technical Boards of Appeal, to consider that the exclusions have in common a lack of 'technical effect'. While this may be true of many members of the list, it is not necessarily the case. A programmed computer provides an obvious example. Suppose a program written for a computer that enables an existing computer to process data in a new way and so produce a beneficial effect, such as increased speed, or more rapid display of information, or a new type of display of information. It is difficult to say that these are not technical effects, and, indeed, that the programmed computer, itself a machine that *ex hypothesi* has never existed before, is itself a technical article and so in principle the subject of patent protection. The real question is whether this is a *relevant* technical effect, or, more crudely, whether there is enough technical effect: is there a technical effect over and above that to be expected from the mere loading of a program into a computer? From this sort of consideration there has developed an approach that I consider to be well established on the authorities, which is to take the claimed programmed computer, and ask what it contributes to the art over and above the fact that it covers a programmed computer. If there is a contribution outside the list of excluded matter, then the invention is patentable, but if the only contribution to the art lies in excluded subject matter, it is not patentable.

[10] The majority of the English decisions (in particular, *Merrill Lynch* [1989] RPC 561 (CA), *Fujitsu* [1996] RPC 511 (Laddie J) and [1997] RPC 608 (CA), *Gale* [1991] RPC 305), along with EPO decisions such as T208/84 *Vicom/Computer-related Invention* [1987] OJEPO 14, [1987] 2 EPOR 74, support this approach. The analysis has two stages. First, determine what the inventor has contributed to the art over and above a computer operating in a new way as a matter of substance and, second, determine whether this contribution lies in excluded matter or, on the contrary, whether it consists in a technical contribution or effect. The contribution must be considered as a matter of substance so as (for example) to prevent patents being granted for such things as novel computer programs on a carrier such as a compact disc.

[11] An invention may be viewed as a solution to a concrete technical problem. Merely to program a computer so that it operates in a new way is not a solution to any technical problem, although the result may be considered to be a new machine. It follows that an inventive contribution cannot reside in excluded subject matter. I consider that this is a correct statement of the principle, although the learning in the EPO on this issue is not entirely consistent. Decision T0935/97 *IBM/Computer Program II* is a case in which a claim to a program on a carrier was allowed, although the material technical effect was found only in the computer once programmed with the claimed software, but I think that the contribution approach is the one that I should take in the light of the decided English authorities, and having regard to what I believe to be the preponderance of the views expressed in the EPO.

[12] The questions may be answered notwithstanding the fact that there has been no novelty search in relation to the invention. I entirely acknowledge the force of the objection made by Mr Davis on behalf of the Applicant that the scope of a contribution to the art can scarcely be ascertained until a prior art search has been done, but one should not confuse the scope of the contribution on the one hand with the area in which the contribution is made on the other. Moreover, there comes a point where the relevant matters are so notorious that a formal search is neither necessary nor desirable and the Comptroller is entitled to use common sense and experience (see *Laguerre's Patent* [1971] RPC 384 at 398 line 24). Thus, in the present case, the physical underpinnings of the claim are a general purpose computer programmed to provide a web server and the Internet, matters which at the priority date were so notorious that it would be absurd in a technical context to feign ignorance of their existence, purpose and (so far as relevant) manner of operation. Indeed, without such knowledge it is not possible to understand the specification at all.

119. As Mr Thorley pointed out Pumfrey J's use of the expression "contribution approach" is rather different from that used in the earlier cases – it being an epithet for the view held by Falconer J in *Merrill Lynch* which was held to be wrong by this court.
120. The claim in *shoppalotto* was to a computer configured to run a lottery game playable over the internet. Pumfrey J held that there was no contribution to the art and that the only contribution was a method of doing business – the patent was rejected.
121. A long judgment (which the Comptroller commended and has been following since it was delivered) on the subject of the exclusions was given by Mr Peter Prescott QC sitting as a Deputy Judge in *CFPH's Appns* [2005] EWHC 1589 (Pat); [2006] RPC 359. The case was also about gambling. There were two applications for

patents concerned with interactive networked betting on events. One (the divisional) was concerned with a wagering system in which the punter was shown only those bets within his credit limit and if he placed a bet immediately to update the credit limit and show him bets available within his updated credit limit. This “dynamic filtering” as the applicant called it reduced the amount of data which had to be transmitted.

122. The other application (the parent) was for a wagering system designed to cope with the fact that different sources of data about the same thing (e.g. a price) might differ – for instance because of market delays. The idea was to provide a processor “to synchronise” the data if different sources differed. Claim 1 did not actually say what “synchronise” meant – but at least in some embodiments the idea was to spread the results if different sources provided different data for the same thing (e.g. a price).
123. Both applications were refused as being for methods of doing business. Mr Prescott analysed the changing views of the EPO Boards of Appeal – the shift from the “technical contribution” test of *Vicom* to the new approaches of *Pension Benefits* and *Hitachi*. He noted that it was difficult to think of a concrete case where the approaches would lead to a different result, but also that they could. *Microsoft/data transfer* – which clearly does produce a different result - had not been decided by then.
124. Mr Prescott particularly noted that the “technical contribution” test had an inherent vagueness. He said, after citing the passage we have quoted from Nicholls LJ in *Gale*:

“[13] For example, in *Gale's Application* [1991] RPC 305, 328 Nicholls LJ said that Mr Gale's 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."

125. Mr Prescott held that the policy against the patenting of computer programs as such must extend to precluding patenting a computer when running under the instructions of a new program. Otherwise the exclusion is pointless. The test was whether the claimed subject-matter was new and non-obvious *merely* because there was a computer program. If on the other hand the computer program was merely a tool for doing something in a better way it was not caught by the exclusion unless that "something" was itself excluded, e.g. as being a business method.

"[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.

126. Kitchin J has also had a case on the topic of the exclusions *Crawford's Appn.* [2005] EWHC 2417 (Pat); [2006] RPC 345. The claim was in effect to a method of telling bus passengers by indicators whether the bus was in boarding or exit mode. It was rejected as being merely for the presentation of information and a method of doing business. Kitchin J thought that the *CFPH* approach was consistent with *Halliburton* and *Fujitsu*. He said:

“[11] At the heart of all these decisions is the consistent principle that an inventor must make a contribution to the art (that is to say the invention must be new and no obvious) and that contribution must be of a technical nature (susceptible of industrial application and not within one of the areas excluded by Art.52(2).”

127. Finally in this review we turn to what other national courts have made of all this. Necessarily we can have only a sketchy idea of the position – depending as we do on the parties' researches and (in some cases) rather poor or no translations.
128. Only one French case was brought to our attention, *Informa v Catalina Marketing* 21st June 2002 (3rd Chamber of the Cour Civile de Paris) at first instance and 28th April 2004 (4th Chamber of the Cour d'Appel de Paris). The patent claim was to an apparatus consisting of a conventional supermarket bar code reader and a printer arranged so that if a particular product was subject to a special offer by way of a discount coupon for later purchases, a coupon would be printed out. It was held

that because there was hardware, the claim was not to a business method as such. Art.52(2) does not appear to have been considered by the Cour de Cassation.

129. Two cases of the German BGH were brought to our attention. The first was *Sprachanalyseeinrichtung* (language analysing device) 11th May 220 X ZB 15/86 GRUR 200 1007, 454 OJ EPO 8-9/2002. The headnote accurately states the holding:
- “(a) An apparatus (computer) which is programmed in a specific way has technical character. The applies even if texts are edited on the computer.
 - (b) For the purpose of assessing the technical character of such an apparatus it is not relevant whether the apparatus produces a (further) technical effect, whether technology is enriched by it or whether it makes a contribution to the state of the art.”
130. For reasons we confess we do not fully understand the BGH considered that the case was not concerned with the computer program as such exclusion. It therefore did not find it necessary to consider the EPO case law on the point.
131. Significantly, in the more recent case of *Jesco Schwarzer* 28th September 2004 17 W (pat) 31/03, the BGH appears to have some reservations about *Sprachanalyseeinrichtung*, refusing to extend it to the image processing system of the claim because it was basically a claim to mathematical method as such even though it would implemented by a computer. Most significantly, however, the BGH declined to follow *Hitachi* (see para 3.2.2.).

End of Appendix