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Case No: A3/2008/0950

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 Patten
CH 2007 APP 0549

Royal Courts of Justice
Strand, London, WC2A 2LL

Date: 08/10/2008

Before :

LORD JUSTICE JACOB
LORD JUSTICE MAURICE KAY
and
LORD NEUBERGER OF ABBOTSBURY

Between :

SYMBIAN LIMITED

- and -
COMPTROLLER GENERAL OF PATENTS

Respondent
/Claimant

Appellant/
Defendant

(Transcript of the Handed Down Judgment of
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Official Shorthand Writers to the Court)

Peter Prescott QC and Ms Charlotte May (instructed by The Treasury Solicitor) for the
Appellant

Daniel Alexander QC and Richard Davis (instructed by Withers and Rogers LLP) for the
Respondent

Hearing date: 16 July 2008

Judgment

Lord Neuberger of Abbotsbury (giving the judgment of the court):

1. This is the judgment of the court to which all members have contributed. It is on an appeal brought, with the permission of the Judge, by the Comptroller General of Patents against a decision of Mr Justice Patten. He allowed an appeal by Symbian Ltd against the Comptroller's decision refusing UK Patent Application No GB 0325145.1 ("the Application"), on the ground that the alleged invention was excluded from patentability by section 1(2) of the Patents Act 1977. The issue raised on this appeal requires us to consider the reach of the exclusion of "programs for computers" from patentable inventions, a topic which is inherently difficult and on which there is apparently inconsistent authority domestically and in the European Patent Office ("EPO").

The Application

2. The Application is entitled "Mapping dynamic link libraries in a computing device". It concerns a method of accessing data in a dynamic link library in a computing device. The alleged invention is pithily explained by Mr Peter Prescott QC and Ms Charlotte May, in their skeleton argument on behalf of the Comptroller, in the following terms:

"Dynamic link libraries (or DLLs) were already known as a means of storing functions common to a number of different applications, so that they were only required to be stored once. The particular function is selected and linked to the application program when it is loaded and run. A function can be selected by its name ('linking by name') or by the numbered address at which it is located ('linking by ordinal'). Linking by name requires a look up table, which links the name of the function to its location in the DLL. It requires more access to memory than linking by ordinal, which is achieved directly. Linking by ordinal is, therefore, the more rapid method of accessing data from a DLL.

Any additional functionality can be added to the DLL. Each new functional module or program is given a numbered address. Allocation is sequential, so that the first 'free' number is taken. However, difficulties can arise when parties add further functionality to the DLL (for example by an upgrade of the operating system and by an additional piece of hardware) independently of each other. Because the functions are added sequentially at the end of the ordinal number range, they are independently both given the same ordinal number and location. This can cause incompatibility in the operation of these new functions.

The purpose of the Application is to overcome this problem. It claims to achieve this by splitting the DLL into two parts. The first part is effectively 'fixed', and contains one or more functions at one or more locations that are linked directly to the program applications. The second part – called the extension part – enables the addition of further functions at further locations. The functions are not linked directly to the program applications, but are only accessed via a further library or interface that holds the ordinal address of the additional functions as located in the extension part of the DLL. The library or interface is a computer program. The effect of the interface is to enable the

location of the functions in the extension part of the DLL to change without altering the location in the interface via which they can be selected or 'called'."

3. Thus, the Application claims that the alleged invention will avoid the difficulties and potential unreliability, and therefore the malfunctioning, of the prior art link-by-ordinal system, (which in principle is faster, and requires less processing power and memory, than the link-by-name system) and yet retain its advantages or most of them. As the Judge said at [7], the claimed invention has "an application to a wide range of electrical devices including any form of computer, various forms of cameras and communication devices such as mobile phones... and other products which combine communications, image recording and computer functionality within a single device." The invention enables such devices to work faster and more reliably.

The Legislation

4. The Hearing Officer considered that the application related to "a program for a computer ... as such" within the meaning of section 1(2)(c) of the 1977 Act, and that accordingly it was excluded from patentability. Sub-sections (1) and (2) of section 1 of the 1977 Act provide as follows:

"1.—(1) A patent may be granted only for an invention in respect of which the following conditions are satisfied, that is to say—

- (a) the invention is new;
- (b) it involves an inventive step;
- (c) it is capable of industrial application;
- (d) the grant of a patent for it is not excluded by subsections (2) and (3) or section 4A below;

and references in this Act to a patentable invention shall be construed accordingly.

(2) It is hereby declared that the following (among other things) are not inventions for the purposes of this Act, that is to say, anything which consists of—

- (a) a discovery, scientific theory or mathematical method;
- (b) a literary, dramatic, musical or artistic work or any other aesthetic creation whatsoever;
- (c) a scheme, rule or method for performing a mental act, playing a game, or doing business, or a program for a computer;
- (d) the presentation of information;

but the foregoing provision shall prevent anything from being treated as an invention for the purposes of this Act only to the extent that a patent or application for a patent relates to that thing as such."

5. These two sub-sections are among the statutory provisions that are specifically mentioned in s.130(7) of the 1977 Act as having been "so framed as to have, as nearly as practicable, the same effects in the United Kingdom as the corresponding provisions of the European Patent Convention...have in the territories to which [that] Convention...appl[ies]". The relevant provision of the European Patent Convention ("EPC") for present purposes is article 52, which provides as follows:

“(1) European patents shall be granted for any inventions, in all fields of technology, provided that they are new, involve an inventive step and are susceptible of industrial application.

(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) Paragraph 2 shall exclude the patentability of the subject-matter or activities referred to therein only to the extent to which a European patent application or European patent relates to such subject-matter or activities as such.”

6. It is clear that, when deciding whether a computer program is patentable or not, precisely the same principles must apply under section 1(2) of the 1977 Act as apply under art 52 of the EPC. Quite apart from what is said in section 130(7) of the 1977 Act, and the “absurdity” (to quote Nicholls LJ in *Gale’s Application* [1991] RPC 305, 323) of a different approach in the United Kingdom Intellectual Property Office (“UKIPO”) from that in the EPO, the distinction between “a program for a computer” as against “programs for computers” is insignificant, and both provisions contain the “as such” limitation.

Article 52: the general approach

7. Where it is contended that a patent application should be rejected on one or more of the grounds contained in art 52(2), the correct approach has been considered in a number of cases by this court and by the EPO Technical Board of Appeal (“the Board”). In the most recent decision of this court, *Aerotel Limited v Telco Limited; Macrossan’s Application* [2007] RPC 7, [40], Jacob LJ, giving the judgment of the court, said that, in such a case, the court should adopt a four stage approach, namely:

“(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 contribution is actually technical in nature.”

8. Nothing further need be said about the first stage. So far as the second stage is concerned, Jacob LJ explained at [43] that this raised the question: “what has the inventor really added to human knowledge”? As to the third stage, this involves asking whether the contribution, identified at the second stage, is one wholly within art 52(2) bearing in mind the qualification in art 52(3) – see [45]. At [46], Jacob LJ explained

that the fourth stage would normally be unnecessary, but that it was effectively mandated by the earlier decision of this court in *Merrill Lynch's Application* [1989] RPC 561. This underscores an important point, namely that the decision in *Aerotel* did not purport to represent a new departure in domestic law, not least because this court was, at least *prima facie*, bound, and indeed it regarded itself as bound, by the approach adopted in three previous decisions of this court, namely *Merrill Lynch*, *Gale*, and *Fujitsu Limited's Application* [1997] RPC 608.

9. The approach of this court in *Aerotel* was considered by the Board in *Duns Licensing Associates* T 0154/04, 15th November 2006. In [5(C)], the Board held that inherent in the concept of “an invention” in the EPC was “any subject matter or activity having technical character” and that a contribution could be patentable “even if it was related to the items listed in [art. 52(2)] since these items were only excluded ‘as such’ – art. 52(3)”. There is a consistent thread throughout the *Duns* decision that, in order to be patentable, a contribution must be “technical”, or at least must have “technical features” or “features which contribute to the technical character of the invention” – see e.g. [5(D) (F) and (G)]. We would refer in particular to [14], where the Board stated that “novelty and inventive step can only be established on the basis of the technical features of the invention.”
10. This Court in *Aerotel* (e.g. in [24] and [25]) suggested that it might be adopting a somewhat different approach from that taken by the Board in some of its decisions. Similarly in *Duns* (e.g. in [12 and 13]) the Board indicated that it was taking a different approach from that adopted by the Court of Appeal. Indeed, each tribunal was rather deprecatory about the approach of the other – see, for instance, [25] of *Aerotel* (where the approach of the Board in different applications was described as “mutually contradictory”) and [12] of *Duns* (where it was suggested that the approach adopted in *Aerotel* was “not consistent with a good-faith interpretation of the [EPC]”).
11. However, at least as a matter of broad principle, it seems to us that the approaches in the two cases and indeed in the great majority of cases in this jurisdiction and in the EPO, are, on a fair analysis, capable of reconciliation. The third stage mandated in *Aerotel*, which we would have thought normally raises the crucial issue, is whether the alleged contribution is excluded by article 52(2), as limited by art 52(3). So far as we can see, there is no reason, at least in principle, why that test should not amount to the same as that identified in *Duns*, namely whether the contribution cannot be characterised as “technical”. In effect, this can be said to involve conflating the third and fourth stages in *Aerotel*, a conflation which is easy to accept bearing in mind that it was said in *Aerotel* that the fourth stage, while required by *Merrill Lynch*, was unlikely to add anything to the third stage (a view supported by Kitchin J in *Astron Clinica Ltd v Comptroller-General* [2008] RPC 14, [49] and by Patten J in this case at [44]).
12. In effect, this Court, while stating how an argument that art 52(2) applied was to be approached in principle, did not (because it did not have to do so) go on to identify the ambit of the exclusion in art 52(2)(c). As is clear from [47] of *Aerotel*, and as Kitchin J said in *Astron Clinica Ltd*, [49], the approach laid down in *Aerotel* “should produce the same result as did the [approach before that decision]”, as this court “was doing no more than applying a re-ordering of the *Merrill Lynch* test, and that it was bound by *Merrill Lynch*, *Gale* and *Fujitsu*”.

13. As for the Board's approach in *Duns*, it appears to us to involve explaining the limitation "as such" in art 52(3) as imposing a requirement that a computer program has a technical effect before it is patentable. Of course, this can be said to beg the question as to what constitutes technical effect, but the point remains that the requirement represents the Board's view of the effect of art 52(2) and art 52(3). Accordingly, at least on the question of the proper approach to an art 52 argument, there is no necessary inconsistency between the two decisions.
14. We are fortified in reaching this view by a more recent decision of the Board given on 29 June 2007, *Gameaccount Ltd* T 1543/06. In that case, at para 2.5, after expressly considering *Aerotel* and *Duns*, and in words reminiscent of those used in both those decisions, the Board said this:

"[A]n invention which as a whole falls outside the exclusion zone of [art 52(2)] (i.e. is technical in character) cannot rely on excluded subject matter alone, even if it is novel and non-obvious (in the colloquial sense ...), for it to be considered to meet the requirement of inventive step. ... [I]t cannot have been the legislator's purpose and intent on the one hand to exclude from patent protection such subject matter, while on the other hand awarding protection to a technical implementation thereof, where the only identifiable contribution of the claimed technical implementation to the state of the art is the excluded subject-matter itself. It is noted that here the term 'contribution' encompasses both means (i.e. tangible features of the implementation) and effects resulting from implementation".
15. In our opinion, that approach is consistent with that of this court in *Aerotel* as well as with that of the Board in *Duns*. It plainly requires one to identify "the contribution" (which equates to stage 2 in *Aerotel*) in order to decide whether that contribution is solely "the excluded subject-matter itself" (equating to stage 3 in *Aerotel*), while emphasising that the contribution must be "technical" (effectively stage 4 in *Aerotel*). The order in which the stages are dealt with is different, but that should affect neither the applicable principles nor the outcome in any particular case.
16. Tribunals not infrequently suggest a specific staged approach to resolve issues in patent cases; obvious examples include the problem/solution approach recommended in the *Guidelines for Examination in the European Patent Office* ("the EPO Guidelines"), and the approaches proposed in *Windsurfing v Tabur Marine* [1985] RPC 59 as updated in *Pozzoli v BDMO* [2007] EWHC Civ 588, [2007] FSR 37 and *Improver v Remington* [1990] FSR 81. While such staged approaches are often very valuable, they should not necessarily be followed blindly in every case. Thus, as Mr Prescott said, the problem/solution approach is scarcely appropriate where at least part of the originality involves appreciating the existence of a problem or the opportunity for an unexpected improvement. In such a case, one can risk creating an artificial problem before going on to consider the solution.
17. In the instant case, the only real issue is, to use the formulation in *Gameaccount*, whether the claimed technical contribution to the state of the art can be said to be the excluded subject-matter itself, or, to invoke the *Aerotel* approach, whether the claim

fails at stage 3 or 4. Whichever way that issue is expressed, it is necessary first to identify the ambit of the exclusion of “programs for computers ... as such” in art 52.

The ambit of the computer program exclusion in art 52: the rival contentions

18. It is not an easy matter to identify the precise ambit of the exclusion of “programs for computers.... as such” in art 52(2)(c) and (3). The difficulty is highlighted by a number of decisions of domestic courts and the Board. As was emphasised in *Aerotel* at [25], this last comment is not intended to convey criticism of either tribunal: the issue is inherently problematic, and inevitably will lead to a degree of inconsistency and uncertainty.
19. In summary terms, the rival contentions of the parties here are:
 - (a) For the Comptroller, Mr Prescott contends that art 52(2)(c), as qualified by art 52(3), has the effect of excluding from patentability any program unless it has a *novel effect outside the computer*. Thus, a program which contains a method for carrying out a new procedure, or representing a better way of carrying out an existing procedure, would be patentable in principle, unless the effect of the procedure is solely within the computer itself. On this basis, a program for an improved system for manufacturing a product, or for performing a new or improved function on any machine would be patentable, unless the function was only performed on the computer itself.
 - (b) For Symbian, Mr Daniel Alexander QC (who appears with Mr Richard Davis) contends that art 52(3) results in art 52(2)(c) having a more limited exclusionary effect: it only excludes programs which do not provide a technical solution to a technical problem. A program which improves the performance of a computer would not be excluded any more than a program which improved the performance of any other machine. But a program which simply embodies a theory would be excluded because it would not make a technical contribution. And a program embodying a mathematical method or a method of doing business would be excluded, as its only contribution would be in respect of matter within art 52(2).
20. Either of these interpretations could be correct in the light of the rather (and perhaps inevitably) imprecise language of art 52. As a matter of policy and practicality, there are also arguments both ways.
21. Symbian argues that its case is assisted by art 27 of TRIPS, which provides that, subject to certain irrelevant exceptions, “patents shall be available for inventions ... *in all fields of technology*” (the emphasised words being incorporated into art 52(1) by amendment in 2000). However, that point begs the question: to what extent is a computer program to be treated as “an invention ... in ... technology” (a view reflected in the reasoning of the Board in *Duns* at [6]).
22. It can also be said in favour of Symbian’s case that it would be somewhat arbitrary and unfair to discriminate against people who invent programs which improve the performance of computers against those who invent programs which improve the performance of other machines. However, as against that, what goes on inside a computer can be said to be closer to a mathematical method (which is, of course, not patentable by virtue of art 52(2)(a)) than what goes on inside other machines.

23. Symbian can also say that the Comptroller's interpretation gives relatively little weight to the limitation contained in art 52(3). If a program is patentable only provided it relates to a process which is carried on outside the computer, in most (albeit we accept not all) cases, the process will be patentable in its own right.
24. Mr Alexander places particular weight on the fact that Symbian's case reflects the view of the EPO, and that domestic courts should not adopt a view which conflict with that of the EPO. It is undoubtedly true that, unlike that of the Comptroller, Symbian's case is consistent with the view of the Board (as para 2.3.6 of the EPO Guidelines demonstrates), but there is no question of the courts of this country being bound by decisions of the Board, any more than the converse. Further, the attitude of the Board has not been entirely consistent on the issue, as we explain in more detail below.
25. On behalf of the Comptroller it is also said that it would be difficult for a third party to search for prior art programs. This is for two reasons. Firstly there is simply not a body of suitable literature about computer programs which can be searched. Secondly much of the prior art will consist of actual computer programs and the outsider will generally find it impossible to understand how these work without the source code – which is normally kept confidential. (The second of these points also means that it may often be impossible for a patentee to discover infringement). We accept that point, but its force is considerably blunted by the fact that it is common ground that a computer program can, in some circumstances, be patentable. Further, a filed patent must, as in this case, contain a comprehensible and implementable description of the invention concerned and one of the purposes of the patent system is to encourage publication of inventions.
26. It is further argued by the Comptroller that, on Symbian's case, the test for patentability is rather imprecise and arbitrary. We agree, but, while the Comptroller's test appears easier to apply, it is also somewhat imprecise and it is arbitrary in its effect. There is, in any event, inherent uncertainty as to what precisely is excluded from patentability by the words "computer programs ... as such", as has been acknowledged in more than one case (most notably perhaps in *Gale* by Nicholls LJ, but also by Aldous LJ in *Fujitsu*).
27. It is also contended by the Comptroller that Symbian's interpretation gives the computer program exclusion a very limited effect. That is true, but, if Symbian is right, the exclusion is far from deprived of any meaning. Thus, it might otherwise be argued that a program which related to a method of doing business, performing mental acts or playing games could be patented, because what was being sought was a patent for a program which was inventive, and the fact that it happened to embody a business method, performing a mental act or a game would not exclude it, because what was sought was not a patent for a business method, a mental act, or a game "as such", but for a program embodying the same.
28. The Comptroller further argues that, following *Aerotel*, UKIPO has adopted the interpretation which is now advanced on his behalf in this case. But we do not consider that *Aerotel* provides any real help on this issue, save to the extent of disagreeing with some more recent decisions of the Board (as discussed below). Further, it does not appear to us that hearing officers have consistently adopted this interpretation (see for instance the decision in *ARM Ltd.* BL O/066/06), although, we of course, accept that the submissions on behalf of the Comptroller reflect the usual view of hearing officers.

29. Finally, the Comptroller makes the point that there is no reference to any “technical” requirement or test in art 52, and, indeed, that the meaning and effect of the term have never been explained by the Board. We see the force of that point. The stipulation of a requirement for a technical contribution can lead to a potentially dangerous exercise of asking whether an application satisfies that stipulation rather than whether it satisfies the statutory requirement itself.
30. The danger is all the greater because the concept of a “technical” contribution is imprecise, and could easily mean different things to different people. But that does not mean that the “technical contribution” test is unhelpful or inappropriate. Given the lack of clarity in the concept of “programs for computers ... as such”, it is understandable, indeed desirable, that tribunals charged with applying that expression give guidance as to its meaning. However, it is essential that such guidance should be clear: otherwise, it has all the disadvantages of the original obscure wording, with the added disadvantage of not even providing the actual legislative test.
31. In this connection, we endorse extra-curial remarks made by Judge Mellulis of the Bundesgerichtshof, at a Symposium of European Patent Judges in September 2006. He said that his court “proceeds from the assumption that the prohibition on the patenting of software ‘as such’ means what the law says” and that, accordingly, “software is not patentable merely by virtue of being used in conjunction with a general-purpose computer”. He also deprecated the use of the word “technical”, not least because “when assessing software as such, the program’s interdependence with the technical device makes the technical content hard to deny”. To the same effect, in CFPH’s Application [2005] EWHC 1589 (Pat), para 14, it was suggested that the use of the description “technical” was “a useful servant but a dangerous master”.
32. In the light of these considerations, and in the light of the difficulty and importance of the issue, it is particularly important to scrutinise the domestic and EPO authorities to see whether a clear and consistent view, or at least a predominant view, as to the scope of the computer program exclusion can be discerned. The last thing that we should do in this case is to add to the uncertainty in this difficult and somewhat controversial field. Before turning to the authorities themselves, it would be as well to examine briefly the extent to which we are bound by them.

The role of precedent

33. As we have mentioned, there are three previous decisions of this court on the effect of section 1(2)(c) of the 1977 Act, and, as we have implied, there are a number of decisions of the Board on art 52(2)(c) of the EPC. In principle, the Court of Appeal is bound by one of its previous decisions unless that previous decision is inconsistent with a subsequent decision of the House of Lords (in which case, the previous decision cannot be followed), is inconsistent with an earlier Court of Appeal decision (in which case the court may choose which previous decision to follow), or can be shown to have been arrived at *per incuriam* (i.e. without reference to a relevant statutory provision or other authority) – see *Young v Bristol Aeroplane Co Ltd* [1944] KB 718.
34. However, in *Actavis UK Ltd v Merck & Co Inc* [2008] EWCA Civ 444, Jacob LJ, giving the judgment of the court, held that this court was also free to depart (but not bound to depart) from one of its previous decisions on a point in the field of patent law if satisfied that the Board have formed a settled view on that point, which differs from

that arrived at in that previous decision. At [48], Jacob LJ made it clear that the right to depart from a previous decision only arose if the “jurisprudence of the EPO” on the point at issue was “settled”, and that, even where that was the case, this court was “not bound to do so”: for instance in “the unlikely event” that it thought the jurisprudence was plainly unsatisfactory.

35. This analysis is reinforced by two observations in the House of Lords, namely *Merrell Dow v Norton* [1996] RPC 76 at 82, and, very recently, *Conor v Angiotech* [2008] UKHL 49, [3] where Lord Hoffmann emphasised the desirability of the English courts adopting the same principles as that of the Board when assessing obviousness.
36. Given that there are decisions of this court and of the Board which relate to the ambit of the computer program exclusion in art 52, the right basis for assessing that ambit in this court should be as follows. If the judgments in the Court of Appeal cases give tolerably clear guidance which would resolve the issue on this appeal, then we should follow that guidance, unless it is inconsistent with clear guidance from the Board, in which case we should follow the latter guidance unless satisfied that it is wrong.

Previous decisions of the Court of Appeal and of the Board

37. The right starting point is the decision of the Board in *Vicom/Computer-related invention* T0208/84, [1987] 2 EPOR 74. At [3], the Board said that:

“a method for obtaining and/or reproducing an image of a physical object or even an image of a simulated object (as in computer-aided design/computer-aided manufacturing ... systems) may be used e.g. in investigating properties of the object or designing an industrial article and is therefore susceptible of industrial application. Similarly a method for enhancing or restoring such an image, without adding to its informational content, has to be considered as susceptible of industrial application” and hence would not be excluded from patentability.

At [12]:

“a claim directed to a technical process which process is carried out under the control of a program (... in hardware or in software) cannot be regarded as relating to a computer program as such ..., as it is the application of the program for determining the sequence of steps in the process for which in effect protection is sought”.

At [15]:

“Generally claims which can be considered as being directed to a computer set up to operate in accordance with a specified program (whether by means of hardware or software) for controlling a technical process cannot be regarded as relating to a computer program as such”

Finally at [16] the Board described “making a distinction between embodiments of the same invention carried out in hardware or in software” as “inappropriate”, as what is “decisive” is the “technical contribution which the invention described in the claim when considered as a whole makes to the known art”.

38. In *IBM Corp./Data processor network* (1988) T06/83, [1990] EPOR 91 a new method of communicating between programs and data files within the computer, so that they operated effectively as a single entity, was held by the Board to be properly “regarded as solving a problem which is essentially technical” and therefore it did not fall foul of art 52(2) – see para 6. In *IBM Corp./Computer-related invention* (1988) T115/85, [1990] EPOR 107, the claim related to a new data structure system embodied in an algorithm, which was faster and required less data storage than the state of the art. The system was concerned with displaying messages, such as the absence of a required disk, to the user on the screen. The Board similarly held the claim was technical in character.
39. In *Merrill Lynch’s Appn.* [1989] RPC 561, Fox LJ treated *Vicom* as representing the law in this jurisdiction, and said at page 569 that, while it was “impermissible to patent an item excluded by section 1(2) under the guise of an article which contains that item”, it would be possible to obtain a patent for a program which contributes “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*).”
40. In *Gale*, Nicholls LJ, after referring to *Vicom*, also adopted this terminology, saying at page 327, that, although instructions on a computer program “are not patentable as such”, they “may represent, for instance, a technical process” because they may record “the means for carrying out a technical process with the aid of a computer”. The program in that case contained an improved way of calculating square roots, which was, of itself, a “mathematical method” within art 52(2). However, as Nicholls LJ said at 327, the attraction in the applicant’s case was that “a computer ... with a square root function, will be a better computer when programmed with Mr Gale’s instructions”. Nonetheless, the patent was refused as “the instructions do not embody a technical process which exists outside the computer”. He went on “Nor ... do the instructions solve a ‘technical’ problem lying with the computer itself” as in *IBM/ Data processor network*. Although Nicholls LJ had “difficulty in identifying clearly the boundary line between what is and what is not a technical problem for this purpose”, he concluded that all Mr Gale had done was “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”.
41. In *Fujitsu’s Appn* [1997] RPC 608, 615 to 616, Aldous LJ also “had difficulty” in identifying the boundary line. In holding the contribution in that case to be excluded, he distinguished *Vicom* on the ground that there the Board held that there was “a technical contribution, namely the generation of the enhanced picture”; in other words, it was not the enhanced image in *Vicom* which brought the case outside art 52(2): it was “the way the enhanced image was produced”. In effect, Aldous LJ went on to hold that the program in *Fujitsu* did not escape the ambit of art 52(2)(c), because it made no technical contribution. The point was made crisply by Roch LJ in his brief judgment at 621, where he said that the applicant had done “no more than to produce, brilliant though it may be, a new computer program”, and, “as it [was] no more than a computer program”, it was not patentable.

42. It is fair to add that we can see a powerful case for saying that, while the test applied by the court in *Fujitsu* was ostensibly consistent with that in *Vicom* and *Gale*, the outcome is a little hard to reconcile with the view taken in those two cases to the question of what constitutes a “technical” contribution. This is, we think, supported by the difficulty Aldous LJ said that he had with the reasoning in *Vicom*. However, even if that is right, the actual decision in *Fujitsu* may well have been justified on the alternative ground tentatively relied on by Aldous LJ, namely that the alleged invention was a “method for performing mental acts”.
43. In a number of more recent decisions, the Board appears to have adopted an analysis which appears substantially more restrictive of the art 52(2)(c) exclusion of computer programs, most notably in *Pension Benefit* (2000) T931/95, *Hitachi/Auction method* (2004) T258/03, and *Microsoft/Data transfer* (2006) T424/03. The effect of those decisions was summarised by Kitchin J in *Astron Clinica*, [39] as being that “any program on a carrier has a technical character and so escapes the prohibition in art 52”. These decisions were fully discussed in [99] to [117] of *Aerotel*. The analysis which those three decisions adopted was effectively rejected by the Court of Appeal as being inconsistent with the previous Board decisions already discussed, and with the three earlier decisions of this court.
44. We do not consider that it would be appropriate to depart from that view, at least in this court. We should follow *Aerotel* in this respect, unless one of the grounds in *Young*, as extended by *Actavis*, is present. None of the three grounds identified in *Young* apply. Further, despite a request to the then President of the EPO from this court to do so in *Aerotel*, there has so far been no reference of this question to the Enlarged Board (a position maintained by the Board in *Duns*). Quite apart from this, there is a degree of inconsistency between the three recent Board decisions referred to in the previous paragraph (an inconsistency discussed in [111] and [114] of *Aerotel*). Further, the actual decision in *Microsoft* that a patent should be granted may well be consistent with the previous views of the Board, as expressed in *Vicom* and the two *IBM Corp.* decisions, and *Pension Benefit* and *Hitachi* involved a patent being refused, albeit on the ground of obviousness.
45. Having said this, it is only right to add that that, following *Aerotel*, there have been a number subsequent decisions of the Board on this issue. For example, apart from *Duns* and *Gameaccount*, there are *Sharp T1188/04* and *File search method/Fujitsu T1351/04*, which contained the bald statement, “The claimed method requires the use of a computer. It is therefore technical in character and constitutes an invention within the meaning of art 52...”, citing *Hitachi* in support (contrast the views of the Bundespatentsgericht already referred to). Of those four decisions, three pretty clearly follow the new analysis adopted by the Board in *Pension Benefit* and *Hitachi* disapproved in *Aerotel*, and one, *Gameaccount*, appears to us to be much more in line with the previous decisions, *Vicom* and the two *IBM Corp.* cases.
46. The fact that there are now three such decisions of the Board subsequent to *Aerotel* which appear to support the approach disapproved in *Aerotel* might suggest that this court should now adopt that approach. We do not agree. First, there is no decision of the Enlarged Board. Not only does that mean that the view of the Board is not as authoritative as it could be; it also suggests that the Board does not consider that the time has arrived for the point to be conclusively determined. Secondly, the approaches in the four decisions since *Aerotel* are not identical: in particular, one of them appears

more consistent with the view preferred in *Aerotel*. Thirdly, we are concerned that, particularly if the passage quoted from *File search method/Fujitsu* represents the Board's view, the computer program exclusion may have lost all meaning. Fourthly, it is not as if the English courts are alone in their concern about the approach of the Board, as the observations from the German judiciary quoted in para 30, and referred to in paras [129] to [131] of *Aerotel*, demonstrate. Fifthly, if this court is seen to depart too readily from its previous, carefully considered, approach, it would risk throwing the law into disarray.

47. We were referred to a number of first instance judgments in this jurisdiction since *Aerotel*, including those of Pumfrey J in *Cappellini's/Bloomberg's Appn* [2007] FSR 26, Kitchin J in *Raytheon's Appn*. [2008] RPC 3 and *Astron Clinica* [2008] RPC 14, Lewison J in *Autonomy's Appn*, [2008] RPC 16, and Floyd J in *Research in Motion v Visto* [2008] EWHC 335 (Pat) and *Kapur's Appn*. [2008] EWHC 649 (Pat). All these decisions are closely reasoned, and serve to demonstrate the difficulties thrown up by the computer program exclusion. Given that they are all first instance judgments applying the principles as laid down by the Board in *Vicom* and the two *IBM Corp.* decisions, and by this court in *Merrill Lynch, Gale*, and *Fujitsu*, to specific facts, it would represent a significant and unjustifiable extension of this already lengthy judgment if we did more than acknowledge their quality and the assistance we have derived from them.

Application of the principles in this case

48. We turn to address the issue whether the Application in this case was excluded from registration on the ground that it was a "program for a computer ... as such". The mere fact that what is sought to be registered is a computer program is plainly not determinative. Given that the Application seeks to register a computer program, the issue has to be resolved by answering the question whether it reveals a "technical" contribution to the state of the art. Despite Mr Prescott's sustained and elegant, and not unjustified, attack on the vagueness and arbitrariness of the term "technical", that question embodies the consistent jurisprudence of the Board (even though the precise meaning given to the term has not been consistent), and it has been applied by this court in *Merrill Lynch, Gale*, and (arguably with an inconsistent result) *Fujitsu*; indeed, it was accepted, through stage 4, in *Aerotel*.
49. In deciding whether the Application reveals a "technical" contribution, it seems to us that the most reliable guidance is to be found in the Board's analysis in *Vicom* and the two *IBM Corp.* decisions, and in what this court said in *Merrill Lynch* and *Gale*. Those cases involve a consistent analysis, which should therefore be followed unless there is a very strong reason not to do so. As explained above, although they use the same language, some of the subsequent decisions of the Board suggest a rather different analysis but they are mutually inconsistent and have been doubted in *Aerotel*. Of the subsequent decisions of this court, *Fujitsu* suggests the same analysis on the face of it, but, in truth, it may represent a departure in the opposite direction to the subsequent decisions of the Board, and *Aerotel* itself is not in point on this central issue.
50. The fact that "the boundary line between what is and what is not a technical [contribution]" is imprecise (as Nicholls LJ said in *Gale*, and as was echoed by Aldous LJ in *Fujitsu*) may be attributable to three causes, which are not mutually exclusive. First, national tribunals and the Board may still be at an intermediate stage

of working out and identifying the precise location of that line; secondly, the problem may be inherent and never wholly satisfactorily soluble; thirdly, there are competing views based on different philosophies (the “open source movement represents one extreme, that of companies such as the present applicant, the other). The uncertainty is well demonstrated by the elusiveness of the meaning of “technical”, the change of attitude manifested in the more recent decisions of the Board, the contrasting outcomes in *Vicom* and *Fujitsu*, and indeed the possible reconsideration of the correct view of computer program patents in the United States (see Professor John Duffy: *Death of Google's Patents?* Patently-O Patent Law Blog, July 21st, 2008).

51. These considerations reinforce our view that, at least in this court at this stage, we should try to follow previous authority, we should seek to steer a relatively unadventurous and uncontroversial course, and we should be particularly concerned to minimise complexity and uncertainty. These aims are not necessarily mutually consistent, but, on this occasion, we believe they are achievable, namely by following the analysis adopted by the Board in *Vicom* and the two *IBM Corp.* cases, and of the Court of Appeal in *Merrill Lynch and Gale*.
52. These considerations also manifest the difficulty of formulating a precise test for deciding whether a computer program is excluded from patentability, and suggest that it could be inappropriate to accept either of the rival simple propositions (summarised at [17] above) advanced by the parties here. Bearing in mind the multifarious features of computer programs and the unpredictable developments which will no doubt occur in the IT field, we believe that it would also be dangerous to suggest that there is a clear rule available to determine whether or not a program is excluded by art 52(2)(c). Each case must be determined by reference to its particular facts and features, bearing in mind the guidance given in the decisions mentioned in the previous paragraph.
53. Based on these principles, we consider that Patten J was right and that the claimed invention does make a technical contribution, and is not therefore precluded from registration by art 52(2)(c). To start with a defensive point, the program in this case does not embody any of the items specifically excluded by the other categories in art 52; thus, it is not a method of doing business (as in *Merrill Lynch*), or a mathematical method (as in *Gale*), or a method for performing mental acts (as was probably the case in *Fujitsu*).
54. More positively, not only will a computer containing the instructions in question “be a better computer”, as in *Gale*, but, unlike in that case, it can also be said that the instructions “solve a ‘technical’ problem lying with the computer itself”. Indeed, the effect of the instant alleged invention is not merely within the computer programmed with the relevant instructions. The beneficial consequences of those instructions will feed into the cameras and other devices and products, which, as mentioned at [3] above, include such computer systems. Further, the fact that the improvement may be to software programmed into the computer rather than hardware forming part of the computer cannot make a difference – see *Vicom*; indeed the point was also made by Fox LJ in *Merrill Lynch*.
55. As Patten J said at [63], there is support in for this conclusion, albeit in an *obiter dictum*, in [92] of the judgment of this court *Aerotel*. Jacob LJ said that in *Gale* it was decided that, in order to avoid the reach of the art 52(2)(c) exclusion, “[m]ore is needed” than “a code as embodied on a physical medium which causes the computer

to operate in accordance with that code”, and then gave as an example “for instance, a change in the speed with which the computer works”. The effect of the alleged invention in the present case improves the speed and the reliability of the functioning of the computer.

56. Putting it another way, a computer with this program operates better than a similar prior art computer. To say “oh but that is only because it is a better program – the computer itself is unchanged” gives no credit to the practical reality of what is achieved by the program. As a matter of such reality there is more than just a “better program”, there is a faster and more reliable computer.
57. We also have some difficulty in seeing a logical or principled basis for holding that the contribution in the present case should not be treated as technical given the contribution in the two claimed inventions in the *IBM Corp.* decisions of the Board which were held to be technical. In particular, in *IBM Corp./Data processor network*, the “technical” contribution identified by the Board was, as explained in [88] of *Aerotel*, “the removal of limitations of prior art systems with the result that the data processing system was more flexible and had ... ‘improved communication systems between programs and files’...”.
58. Indeed, it appears to us that upholding the conclusion of the Comptroller in this case, would involve the English courts departing from all the decisions of the Board to which we have referred. In particular, despite Mr Prescott’s contention to the contrary, we consider that it would be inconsistent with the reasoning of the Board in *Gameaccount*, if we allowed this appeal. In [2.7], the Board said that there must be “further technical advantages or effects associated with specific features of implementation over and above the effects and advantages inherent in the excluded subject-matter”. That cannot mean that any technical advantage attributable to a computer program is excluded, as it would make a nonsense of art 52(3) and of all the previous Board decisions. Therefore, it must mean, consistently with *Vicom* and the two *IBM Corp.* cases, that a technical innovation, whether within (as in the last-mentioned cases) or outside the computer will normally suffice to ensure patentability (subject of course to the claimed invention not falling foul of the other exclusions in art 52(2)).
59. Next, it is appropriate to consider our conclusion in accordance with the guidance given at [40] in *Aerotel*. Stage 1 is not in issue. As to the stages 2 to 4:

Stage 2 Identify the contribution:

A program which makes a computer operate on other programs faster than prior art operating programs enabled it to do by virtue of the claimed features.

Stage 3 Is that solely excluded matter?

No, because it has the knock-on effect of the computer working better as a matter of practical reality.

Stage 4 Is it technical?

Yes, on any view as to the meaning of the word “technical”.

60. Finally, there is the fact that the EPO Examining Division has indicated that a European patent is to be granted for the alleged invention: there is no question of an art 52(2) problem so far as the EPO is concerned.
61. It is, of course, inevitable that there will be cases where the EPO will grant patents in this field when UKIPO should not, at least so long as the view in *Pension Benefit* and *Hitachi* is applied by the Board and is not applied here. The fact that the two offices and their supervisory courts have their own responsibilities means that discrepancies, even in approach or principle, are occasionally inevitable. However, the fact that such discrepancies have been characterised as “absurd” by Nicholls LJ, and the reasoning in [3] of *Conor* emphasise the strong desirability of the approaches and principles in the two offices marching together as far as possible. This means that there is a need for a two-way dialogue between national tribunals and the EPO, coupled with a degree of mutual compromise. More directly relevant to the present appeal, it means that, where there may be a difference of approach or of principle, one must try to minimise the consequent differences in terms of the outcome in particular patent cases.

Conclusion

62. For these reasons, we would dismiss this appeal.