

PATENTS ACT 1977

APPLICANT Bank of America Corporation

ISSUE Whether patent application number
GB0918198.3 complies with Section 1(2)

HEARING OFFICER Dr. Stephen Brown

DECISION

Introduction

- 1 This decision concerns the issue of whether the invention claimed in patent application GB0918198.3 relates to non-excluded subject matter as required by section 1(2) of the Act. It is entitled “Financial Account Information Management and Auditing” and was filed via the PCT route with a priority date of 2nd April 2007. The application was republished as GB2460984 on 23rd December 2009.
- 2 The examiner has maintained throughout that the invention claimed in this application is excluded from patentability as a computer program, a mental act and a method of doing business. The matter came before me at a hearing on 9th March 2012 where the applicant was represented by Mr. Robert Jackson of Frank B. Dehn & Company. The examiner Mr. Jake Collins, hearing assistant Mr. Brian Woods and observer Mr. Colin Whitbread were also present.

Compliance period

- 3 The period for putting this application in order expired on 19th April 2012. This was discussed at the hearing and Mr. Jackson was made aware of his options

The Invention

- 4 The claims relate to a method of retrieving financial information stored in a first database by using a second database, which contains data referencing the first database, as a dictionary or index.

5 The most recent set of claims were filed on 22nd August 2011. There are 24 claims, four of which are independent. Claims 1 and 13 relate to methods of data storage and retrieval. Each of these has a corresponding claim to a computer-readable medium storing computer-executable instructions for performing said method (claims 7 and 20, respectively). It is noted that claims 1 and 13 do not explicitly claim a computer implemented method.

6 The wording of each method claim is as follows:

Claim 1: In a financial transaction management system, a method comprising: storing in a first database first data representing a plurality of financial transactions; storing in a second database second data referencing the first data; and retrieving data representing one of the financial transactions from the first database using the second database as a dictionary.

Claim 13: A method, comprising: storing in a first database a plurality of data blocks each representing a different one of a plurality of financial transactions; storing in a second database data representing aspects of the corresponding financial transaction of each of the data blocks, each subset further referencing a location of the corresponding one of the data blocks; receiving a query including a criterion; retrieving data from the second database based on the criterion and representing one of the locations; and retrieving one of the data blocks from the first database found at the one of the locations.

7 For simplicity, the following discussion will deal primarily with claim 1, although it applies *mutatis mutandis* to claim 7. Likewise, though claims 13 and 20 relate to more specific embodiments, they have the same underlying concept and will stand or fall subject to the conclusions reached for claim 1.

The law and its interpretation

8 Section 1(2) of the Patents Act reads:

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:

...

(c) a scheme, rule or method for performing a mental act, playing a game or doing business, or a program for a computer;

...

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

- 9 In addition to the above there is also the case law established in the UK in *Aerotel/Macrossan*¹, and further elaborated in *Symbian*² and *AT&T/CVON*³, which I am bound to follow. In *Aerotel* the Court of Appeal reviewed the case law on the interpretation of section 1(2) and approved a four-step test for the assessment of patentability, namely:
- 1) Properly construe the claim
 - 2) Identify the actual (or alleged) contribution
 - 3) Ask whether it falls solely within the excluded matter
 - 4) Check whether the contribution is actually technical in nature.
- 10 The operation of the test is explained at paragraphs 40-48 of the judgment. Paragraph 43 confirms that identification of the contribution is essentially a matter of determining what it is the inventor has really added to human knowledge, and involves looking at substance, not form. Paragraph 47 adds that a contribution which consists solely of excluded matter will not count as a technical contribution. However, the Court was quite clear (paragraphs 8-15) that this structured approach was never intended to be a new departure in domestic law; that it remained bound by its previous decisions, particularly *Merrill Lynch*⁴. Additionally, in relation to the 'mental act' question, there is the recent case law of *Halliburton*⁵.

Application of the *Aerotel* test

Properly construe the claim

- 11 In construing the claim, I am guided by *Catnic*⁶ and *Kirin-Amgen*⁷ and must seek to interpret the claim in a manner that the person skilled in the art would have understood the patentee to be using the language of the claim to mean. I.e. as Mr. Jackson rightly pointed out during the hearing, a *purposive* construction.
- 12 As mentioned above, neither claim 1 nor 13 explicitly defines the invention as a computer implemented method. However, Mr. Jackson put forward two main arguments that they were indeed so limited. Firstly he argued that in ordinary common usage the word 'database' would be understood to refer to an organised body of data stored on a computer. Further that the words "storing" and "retrieving" also strongly imply computerised data processing, not manual filing.

¹ *Aerotel Ltd v Telco Holdings Ltd (and others) and Macrossan's Application* [2006] EWCA Civ 1371

² *Symbian Limited's Application* [2008] EWCA Civ 1066

³ *AT&T Knowledge Ventures LP and CVON Innovations Limited* [2009] EWHC 343

⁴ *Merrill Lynch's Application* [1989] RPC 561

⁵ *Halliburton Energy Services Inc's Applications* [2011] EWHC 2508 (Pat)

⁶ *Catnic Components Ltd and another v Hill and Smith Ltd* [1982] RPC 183

⁷ *Kirin-Amgen Inc v Hoechst Marion Roussel Ltd* [2005] RPC 9

- 13 I am not entirely convinced by this argument. While Mr. Jackson's interpretation of the word 'database' is a common one, it is not the only one. Modern day students of ICT are taught that a database can be either paper-based or computer based⁸, and the words "storing" and "retrieving" are applicable to both.
- 14 Mr. Jackson then argued that, considering the specification as a whole and thus the language of the claims in context, it is difficult to see how the invention could be carried out on anything other than a computer. The problem the invention is trying to solve is one of fraud investigation/detection on large amounts of data in a period of time that reduces the opportunity for repeat offenses.
- 15 This argument is far more persuasive. The embodiments detailed in the description refer to data regarding financial transactions of the order of hundreds of terabytes or more. Thus the skilled person would understand that in practice a computer must be used. On this basis, I agree that a purposive construction of claim 1 refers to a computer implemented method.
- 16 In summary, I construe claim 1 as a computer implemented method of retrieving financial information stored in a first database by using a second database, which contains data referencing the first database, as a dictionary or index.

Identify the actual contribution

- 17 The examiner's view, as set out in his letter of 6th January 2012, was that the contribution is "*storing in a first database data representing a plurality of financial transactions, storing in a second database data referencing the data in the first database, and retrieving the data from the first database using the data stored in the second database*". The examiner accepted that this "*had the advantage of a quicker and more efficient method of accessing the data in the first database.*" The examiner and Mr. Jackson referred to this as the 'narrow contribution' and I shall do likewise.
- 18 While Mr. Jackson accepted that the claims are explicitly limited to financial transaction data, at the hearing he emphasised that the method had a more general applicability. He argued that it could function as a more efficient method to store and retrieve any information. The fact that the claims chose to mention financial data is immaterial – that is only an arbitrary limitation chosen by the applicants. He argued that the contribution should be construed to relate to a better method of database operation per se.
- 19 The examiner summarised this alleged wider contribution as "storing data in a first database, storing in a second database data referencing the data in the first database and retrieving the data from the first database using the data stored in the second database." Mr. Jackson accepted this definition of the

⁸ <http://www.teach-ict.com/glossary/D/database.htm>

wider contribution, with the proviso that the method is computer implemented, as discussed above.

Ask whether it falls solely within excluded matter

- 20 I will now discuss each category of exclusion raised by the examiner with regards to both the narrow and wider contributions identified above.

Mental Act

- 21 When the examiner applied the mental act exclusion to this case he did so by way of construing the claims to include non-computer implemented databases. As reasoned above I disagree with this construction. The contribution clearly requires a computer for its implementation. As such it falls outside of the narrow interpretation of the mental act exclusion as set out in *Halliburton*⁵. Following that case I am thus bound to conclude that the contribution is not excluded as a mental act.
- 22 This conclusion applies equally to both the narrow and the wider contribution mentioned above. Both require a computer for their implementation therefore neither can be excluded as a mental act.

Program for a computer

- 23 As discussed above, there is no doubt in my mind that both contributions require a computer program for their implementation. However, the mere fact that the invention is effected in software does not of course mean that it is automatically excluded as a program for a computer as such. What matters is whether or not the program provides a technical contribution beyond that of a mere program.
- 24 Also as discussed above, Mr. Jackson's preferred contribution is the wider one. This contribution he argued leads to the more efficient retrieval of information from a system of computer implemented databases. Mr. Jackson asserted that this leads to a better computer system per se, and therefore, following *Symbian*², it should not be excluded.
- 25 I am afraid that I am not wholly convinced by this argument. Paragraphs 54 & 56 of *Symbian*² state that:

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.

and:

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.

26 In my opinion there are number of differences between this case and that in *Symbian*². Firstly, the wider contribution does not appear to solve a technical problem lying with the computing system itself. Rather it addresses the issue of how to efficiently access a very large (first) database. It seems to me that this is a problem with database usage not with the wider computing system as a whole. Also, the wider contribution does not result in a faster or more reliable computing system. What it results in is a better way to access the first database. In short, the computing system itself does not appear better as a matter of practical reality.

27 This conclusion is reinforced when I turn to CVON³. In paragraphs 39-41 of this case Lewison J states:

It seems to me, therefore, that Lord Neuberger's reconciliation of the approach in Aerotel (by which the Court of Appeal in Symbian held itself bound, and by which I am undoubtedly bound) continues to require our courts to exclude as an irrelevant "technical effect" a technical effect that lies solely in excluded matter.

As Lord Neuberger pointed out, it is impossible to define the meaning of "technical effect" in this context, but it seems to me that useful signposts to a relevant technical effect are:

i) whether the claimed technical effect has a technical effect on a process which is carried on outside the computer;

ii) whether the claimed technical effect operates at the level of the architecture of the computer; that is to say whether the effect is produced irrespective of the data being processed or the applications being run;

iii) whether the claimed technical effect results in the computer being made to operate in a new way;

iv) whether there is an increase in the speed or reliability of the computer;

v) whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented.

And, if there is a technical effect in this sense, it is still necessary to consider whether the claimed technical effect lies solely in excluded matter.

- 28 In respect of the first signpost, Mr. Jackson agreed that the effect in this case is the retrieval of information within the databases, and that as such the effect lies wholly within the confines of the computer. He pointed out to me though that the invention in *Symbian*² does not have a direct effect external to the computer and yet it was still considered to be patentable. I am happy to agree with Mr. Jackson on these points – it is not necessary for the contribution to meet all of the signposts to be allowable, any one will do. As was the case in *Symbian*² the first signpost is arguably irrelevant in this case.
- 29 However, Mr. Jackson also pointed out (in a supplement to his skeleton argument), that the judge in *Symbian*² had suggested that there may be possible “indirect” external effects beyond the computer. Mr. Jackson argued that there could indeed be such indirect external effects from this invention depending upon the eventual use of the data retrieved. However, this argument is reliant on a broad observation from the *Symbian*² decision. In the absence of an identifiable external effect I remain unconvinced with regards to the first signpost.
- 30 In respect of the second signpost, Mr. Jackson argued that the meaning of the term ‘architecture’ should be defined by the phrases immediately following it in Lewison J’s decision. I.e. that the judge had intended the term ‘architecture’ to relate to *any* effects that were produced irrespective of the data being processed or the applications being run. I think this an unduly restrictive interpretation of the use of legal precedent. The term ‘architecture’ has a well know meaning in relation to computer technology, one I am sure Lewison J was well aware of when he wrote his decision. To depart from the common definition of such a well know term in the art seems unnecessary and perverse and I will thus not do so.
- 31 Mr. Jackson then went on to argue that the relevant technical effect was a quicker and more efficient retrieval of data. Further he argued that this effect occurred independent of the content of the data in the first database. At least for the sake of argument I am content to accept Mr. Jackson’s argument on this point.
- 32 However, this effect does not operate irrespective of the *applications* being run – it only occurs when a user wishes to access data from the first database. As Mr. Jackson rightly pointed out at the hearing, the crux of *Symbian*² was that it related to a program which made a computer operate on other programs faster - in essence a generic program. That is not the case here - there is nothing to suggest that the computer architecture is anything other than conventional. In short, the effect is not operating at the level of the architecture of the computer. Rather, it is at the level of the databases.
- 33 In respect of the third signpost, it seems to me that what the computer is actually doing is manipulating and comparing data, and using such operations to effect the quicker and more efficient retrieval of data. This may result in

better database usage but I am not convinced that the computer itself is operating in any new way.

- 34 In respect of the fourth signpost, any increase in speed is at the level of database interrogation, there is no evidence that the computer itself is operating faster or with greater reliability. In the case of *Symbiar*² it was accepted that an overall improvement in reliability was achieved. The contribution in this case does not seem to operate with anything like the same level of generality.
- 35 Finally, in respect of the fifth signpost, it would seem that the problem has been circumvented by the creation of a second database which is used as a dictionary. To my mind, the improvement in quicker and more efficient retrieval of data is achieved by reducing the amount of data to be processed, by the use of the dictionary, rather than by increasing the performance of the computer itself. If any problem is indeed overcome, it is a problem lying in the area of accessing very large databases not with the computer itself.
- 36 To summarise: the wider contribution is a better way of retrieving data from a database. I can see no technical effect outside the computer. Neither is the computer operating in a new way. The wider contribution does not, in my opinion, create a better computer, rather it creates a better method of accessing high level databases. I am therefore forced to conclude that the wider contribution is excluded as a program for a computer as such.
- 37 As defined above, the narrow contribution is differentiated from the wider contribution by being limited to financial transaction data. This additional detail, that the data is purely business related, clearly cannot provide the necessary technical contribution to place the invention beyond the computer program exclusion. The narrow contribution is thus also excluded as a program for a computer as such.

Method for doing business

- 38 At the hearing, Mr. Jackson argued that the invention is not a method of doing business, but rather that it is a “tool for use in business”. He made the analogy that it is akin to a better cash register. Cash registers are technical items that are used solely for doing business. He argued that the searching of financial data is not necessarily a method of doing business, since it depends on how the searching is done. Further, he argued that the wider contribution was a data processing system and thus not limited to a method of doing business at all.
- 39 Once again we must return to the ‘narrow contribution’ and the ‘wider contribution’ of the claimed invention. If I accept the wider contribution, as Mr. Jackson urges me to do, then the contribution is a better method of operating computer databases. Even if this is not a method of doing business, and I am not wholly convinced it is not, it is excluded as a program for a computer as such as reasoned above. I thus will not consider it any further here.

- 40 However, I am reminded by Lord Hoffmann in paragraph 34 of *Kirin-Amgen*⁷ that “the specification is a unilateral document in words of the patentee's own choosing”, and such words “will usually have been chosen upon skilled advice”. Therefore, if it were the applicants’ desire to claim an invention for the storage and retrieval of data, then no doubt they would have done so. The applicants instead chose to claim an invention limited to financial transactions, placing the invention squarely in the arena of business methods. In light of this I am forced to conclude that the narrow contribution is the correct one to use and I will now assess *that* against the business method exclusion.
- 41 The narrow contribution is but one facet of modern-day business associated with financial transactions, which may encompass not only the transactions per se, but also peripheral activities such as invoice/billing, record keeping, data mining, fraud prevention and data security, to name but a few. However, these are all examples of business activities undertaken for business reasons. While the narrow contribution allows financial data to be accessed more efficiently I cannot see that it solves any wider technical problem. Neither can I see any effect or other thing that falls outside the business method exclusion. I am thus forced to conclude that the narrow contribution is excluded as a method of doing business as such.

Check whether the contribution is actually technical in nature

- 42 As reasoned above, neither the wider nor the narrow contribution has a relevant technical effect. The application thus fails the fourth Aerotel step.

Auxiliary request

- 43 At the hearing Mr. Jackson requested that if I were minded to refuse the application in its current form that the applicants be allowed to amend along the lines of the claims in their equivalent application US8099345. Claim 1 of this US equivalent is broadly similar to claim 13 of the current application with the additional details that the data blocks in the first database are compressed to generate ‘third’ data blocks which are then stored with different offsets.
- 44 Revisiting the reasoning laid out in paragraphs 23-37 above, I still cannot see any technical effect outside the computer itself. Neither does the computer operate in a new way. The addition of compressing and offsetting data still only results in a better method of accessing high level databases. I thus conclude that even if the claims were amended to mirror those in the US application, they would remain excluded at least as a program for a computer as such.

Decision

- 45 I have found that the contribution made by the invention defined in the independent claims falls solely in subject matter excluded under section 1(2) as

both a program for a computer and a method for doing business as such. I have read the specification carefully and I can see nothing that could be reasonably expected to form the basis of a valid claim. I therefore refuse this application under section 18(3).

Appeal

46 Under the Practice Direction to Part 52 of the Civil Procedure Rules, any appeal must be lodged within 28 days.

Dr. Stephen Brown

Deputy Director, acting for the Comptroller