



PATENTS ACT 1977

APPLICANT Websense UK Limited

ISSUE Whether patent application number
GB 0420024.2 complies with section 1(2)

HEARING OFFICER S. Brown

DECISION

Introduction

- 1 This decision concerns the issue of whether the invention claimed in UK patent application GB 0420024.2 relates to non-excluded subject matter as required by section 1(2) of the Act.
- 2 The application is entitled “system, method and apparatus for use in monitoring or controlling internet access”. It was filed on 9th September 2004 and was published as GB 2 418 999 A.
- 3 During the examination process, the examiner reported that the invention defined in the claims was excluded as a program for a computer. Despite a number of rounds of amendment and re-examination the applicants and the examiner were unable to resolve this issue and a hearing was held on 6th March 2009. The applicants were represented by Mr. Ian Robinson of Appleyard Lees. The examiner, Mr. Jake Collins, also attended.

The Application

- 4 The claims I was asked to consider at the hearing were filed on 3rd September 2007. There are 40 claims in total comprising 5 independent claims (claims 1, 7, 10, 23 and 32) which relate respectively to a system, a device, two methods and a cache structure, all for controlling or monitoring internet access by categorizing URLs. While there are minor differences between the independent claims, claim 23 is typical and reads:

A method for use in controlling or monitoring Internet access at a client device by categorising Uniform Resource Locators (URLs), comprising the steps of:

receiving a specified URL;

searching a category cache held at the client device using the specified URL as a search key by hashing at least part of the specified URL to reference an index element (811) for a hash array (810) within the category cache, using the index element as a pointer to a combined host tree and age list comprising one or more tree nodes (821), wherein each tree node comprises URL data representing a URL and one or more corresponding category codes, and each tree node further comprises an age list next pointer (827) referring to an adjacent older tree node and an age list previous pointer (828) referring to an adjacent newer tree node, and searching the combined host tree and age list for a tree node containing URL data which matches the specified URL;

returning a category code associated with the specified URL when a match is found for the specified URL; and

generating a request message to request a category code for the specified URL, when a match is not found for the specified URL.

5 Figure 9 of the application gives a good overview of the cache structure:

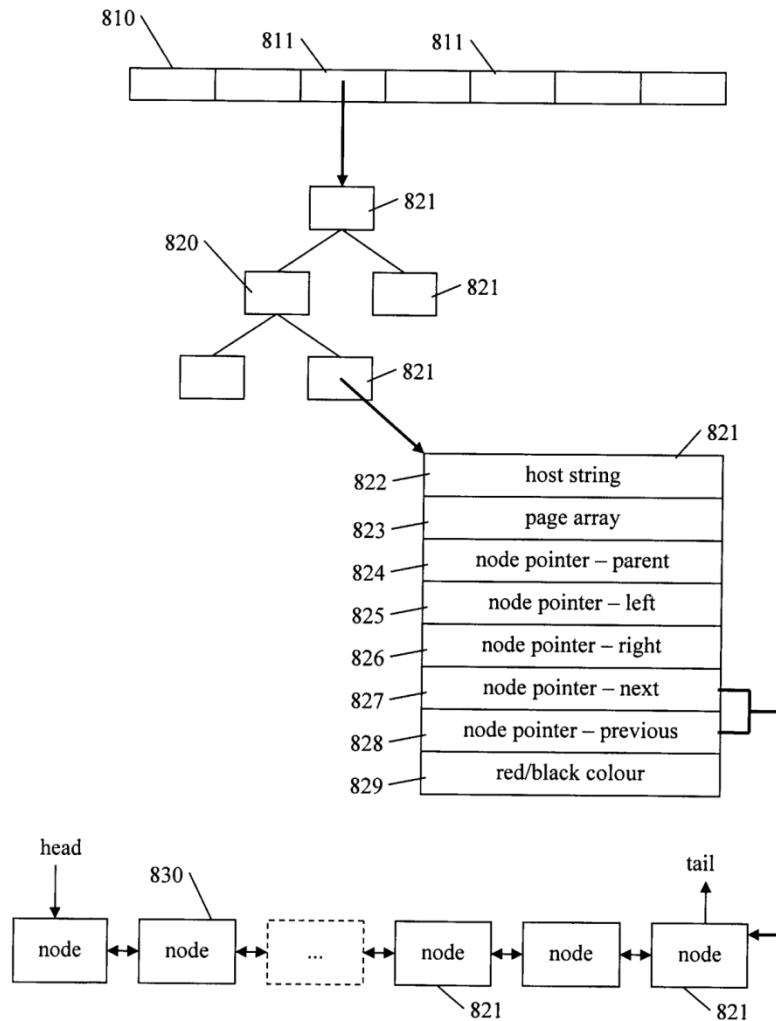


Fig. 9

The law and its interpretation

6 Section 1(2) 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:

- (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.

7 It is not disputed that the assessment of patentability under section 1(2) is governed by the judgment of the Court of Appeal in *Aerotel Ltd v Telco Holdings Ltd* and *Macrossan's Application* [2006] EWCA Civ 1371, [2007] RPC 7 ("*Aerotel*"). In this case the court 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.

8 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 46 of *Aerotel* explains that the fourth step may not be necessary because the third step should have covered the point. Paragraph 47 then goes on to add that a contribution which consists solely of excluded matter will not count as a technical contribution.

Application of the *Aerotel* test

Properly construe the claim

- 9 I do not think that any problems arise over the construction of the claims. The letter from Mr. Robinson of 4th of March 2009 states that the invention concerns 'a client computer device which has a local "category cache" of URLs and category codes. The category cache comprises a hash array of tree nodes which are linked with next/previous pointers to form an age list which defines the relative age of each node.' I am happy to accept this as the purposive construction of the claims and am grateful to Mr. Robinson for providing it.

Identify the contribution

- 10 In paragraph 43 of the Aerotel Court of Appeal judgment Jacob LJ states:

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.

- 11 Mr. Robinson argued that what has been added to human knowledge in this case is twofold. Firstly, it is the use of a hash of a URL to index elements in a hash array within the category cache. Mr. Robinson acknowledged that it was known to store lists of full URLs and their associated categories and thereby allow or deny access to web pages. Mr. Robinson argued that the use of the hash 'approach' lead both to faster access speeds when retrieving items from the cache and to a smaller cache, allowing the invention to be used in devices with limited memories, such as set-top boxes and PDAs, which previously could not employ web filtering. Mr. Robinson did accept that as a general technique hashing is well know but argued that it was not known to use it with this kind of data in these kinds of devices.

- 12 Secondly, the provision of next/previous pointers to form an age list made the computer more reliable as it could robustly add new items to the cache and remove old items from it. Also the cache could be easily limited to a particular memory size by pruning out older nodes when required. Again this allowed the invention to be used in devices with much smaller memories than had previously been the case.

- 13 I am happy to accept Mr. Robinson's arguments above. So to summarise the contribution is a URL category cache comprising a hash array with an integral age list. This results in a potentially smaller cache with faster access speeds.

Ask whether it falls solely within the excluded matter

- 14 From both the claims and the description the skilled man would appreciate that the contribution is enacted by software in the memory of some sort of computing device. Mr. Robinson acknowledged this and that the hardware in question was

standard hardware. Furthermore, the hashing algorithm and at least some aspects of the cache structure could be considered to be mathematical methods, albeit ones enacted by software. Here Mr. Robinson disagreed and argued that the operation of a memory and the cache structure in this case were not mathematical at all. However, as there is no new hardware or arrangement of hardware one question that must be answered is “is this just a program for a computer and/or a mathematical method as such?”

- 15 Mr. Robinson reminded me that the invention in Symbian did not change any hardware. He argued that the invention in this case was analogous to the one in Symbian in that here the storing and access of data results in ‘the machine’ working faster and requiring less memory. In the judgment of the Court of Appeal in *Symbian Ltd v Comptroller General of Patents* [2008] EWCA Civ 1066 (‘Symbian’) paragraph 59 states:

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".

- 16 Mr. Robinson argued that in this case, as in Symbian, the new way of storing and accessing data led to the computer working better and thus the invention was not excluded and was technical.

- 17 However, I am not convinced by this reasoning. Paragraph 54 of Symbian states 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.

- 18 In this case I am not so sure that the invention solves a technical problem lying with the computer itself. Mr. Robinson made it very clear that the problem overcome was that prior art URL category caches were too big and too slow. Thus this is a problem relating solely to the operation of high level software constructs. To my mind this distinguishes the current case from Symbian. Another possible distinction turns on whether the contribution in this case results in a better computer (as in Symbian) or just a better internet access application sat on an otherwise unaltered computer.
- 19 Naturally, Mr. Robinson argued the former, pointing out to me that the technology of the current case would work with any web browser accessing any URL. It sat below the level of application and could be used whenever the internet was accessed. In short the technology had a broad generic use and a user would just experience better web access.
- 20 Again, I am not wholly convinced by this reasoning. In *AT&T Knowledge ventures LP & Cvon Innovations Ltd v Comptroller General of Patents* [2009] EWHC 343(pat) ('Cvon') Lewison J states (at paragraph 34):

In Symbian itself, the invention was patentable because it resulted in a faster and more reliable computer. The increase in speed and reliability was not, as I understand the invention, dependent of the type of data being processed or the particular application being used to do the processing. The invention operated at a much higher level of generality within the computer.

- 21 Despite Mr. Robinson's arguments I am not convinced that the contribution in this case operates at the same level of generality as that in Symbian. Further, in paragraphs 39-41 of Cvon, Lewison J went on to say:

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.

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.

22 Taking these signposts one at a time:

- i. While the system as a whole effects the access of web pages the *technical* effect of the contribution identified above does not extend this far. It is merely a better URL category cache which results in potentially faster memory access when using a web browser and may require less memory to operate. The structure and operation of the cache exert no *technical* effect outside of the computer – the requesting and return of web information is standard;
- ii. The technical effect clearly operates further away from the level of the architecture of the computer than that in Symbian. Despite Mr. Robinson's arguments about how it can operate with any web browser and any URL that is clearly not the same level of generality as Symbian achieved. In this case the effect is not produced irrespective of the data being processed or the applications being run. Indeed the contribution sits just below the level of an application and thus at a very high level within the hierarchy of a computer's software;
- iii. In this case the computer is not operating in a new way. Only a high level URL category cache is;
- iv. While the URL category cache may operate faster, more reliably, and require less memory, the computer itself appears unaltered;
- v. The prior art problem of URL category caches being too big and too slow is overcome but this is a problem relating solely to the operation of a high level software construct.

23 From the above analysis, the key question in this case is that posed by signpost (ii) of Cvon – i.e. is the contribution made at a low enough level to avoid exclusion? Specifically, is the contribution in this case closer to that of Symbian, which the courts have decided is not excluded, or to the theoretical 'program for a computer as such', which is?

24 To recap: The problem solved in this case lies entirely within the construction and operation of a cache memory. More importantly, the contribution resides just below the level of an application and only operates when a web browser accesses URL data. Unlike the contribution in Symbian it does not operate at a

high level of generality within the computer. In light of all of this I am forced to conclude that the contribution does not have a relevant technical effect. It thus consists only of excluded subject matter and is no more than some combination of a mathematical method and a program for a computer as such. It therefore fails the third Aerotel step.

Check whether the contribution is actually technical in nature

- 25 As reasoned above, the contribution does not have a relevant technical effect. Thus the application also fails the fourth Aerotel step.

Decision

- 26 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).
- 27 I have read the specification carefully and I can see nothing in any of the dependant claims that could be reasonably expected to form the basis of a valid claim. I note that there were two co-pending applications by the same applicant, GB0420023.4 & GB0420025.9 that have now been granted as GB 2 418 037 B & GB 2 418 108 B, respectively. The only material in this application which might form the basis of a valid claim with regards to section 1(2) would conflict with what is claimed in those two applications.
- 28 I therefore refuse this application under section 18(3).

Appeal

- 29 Under the Practice Direction to Part 52 of the Civil Procedure Rules, any appeal must be lodged within 28 days of the date of this decision.

S. Brown

Deputy Director acting for the Comptroller