



## The application

7. The application relates to filtering information in a computer network appliance for modifying an advertising request in a network appliance to obtain a customized advertisement. Thus a recipient receives a more tailored, customised advertising experience.
8. The application was most recently amended on 03 November 2014, when the applicant filed an amended set of claims (26 in total) – with 4 independent claims 1, 8, 16 and 21 directed towards network appliances and computer implemented methods.

## Claims

It was confirmed at the hearing that the Hearing Officer would base their decision on the claim set filed on 03 November 2014. The 4 independent claims read as follows:

Claim 1:

*A network appliance operative to communicate information between an internal network and an external network and configured to optimize advertising content displayed on the internal network, comprising:*

*a network appliance input connected at least indirectly to the internal network and configured to receive a plurality of data packets including a request for advertising content;*

*a data packet analyzer configured to monitor the plurality of data packets to detect the request for advertising content;*

*an advertisement profile generator configured to generate a user profile of a user of the internal network and modify the request for advertising content based on the user profile by adding keywords to the request from a network activities database; and*

*a network appliance output connected at least indirectly to the external network and configured to transmit the plurality of data packets including the modified request for advertising content.*

Claim 8:

*A computer-implemented method implemented by one or more network devices operative to communicate information between an internal network and an external network to optimize advertising content displayed on one or more devices in the internal network, comprising:*

*receiving a plurality of data packets including a request for advertising content at least indirectly from the one or more devices in the internal network;*

*monitoring the plurality of data packets to detect a request for advertising content;*

*modifying the request for advertising content based on a user profile of a user on the internal network by adding keywords to the request from a network activities database; and*

*transmitting the plurality of data packets including the modified request for advertising content at least indirectly to the external network.*

Claim 16:

*A network appliance operative to communicate information between an internal network and an external network and configured to coordinate the provision of advertising content across multiple devices on the internal network, comprising*

*a network appliance input connected at least indirectly to the internal network and configured to receive a plurality of data packets including a request for advertising content;*

*a data packet analyzer configured to monitor the plurality of data packets to detect the request for advertising content;*

*an advertisement request generator configured to identify at least two devices on the internal network to contemporaneously receive the advertisement and to modify the request for advertising content based on the identification and further modify the request by adding keywords to the request from a network activities database; and*

*a network appliance output connected at least indirectly to the external network and configured to transmit the plurality of data packets including the modified request for advertising content.*

Claim 21:

*A computer-implemented method operative to communicate information between an internal network and an external network implemented by one or more network devices to coordinate the provision of advertising content across multiple devices on the internal network, comprising*

*receiving a plurality of data packets including a request for advertising content at least indirectly from one or more of the multiple devices;*

*monitoring the plurality of data packets to detect the request for advertising content;*

*identifying at least two devices on the internal network to contemporaneously receive the advertisement;*

*modifying the request for advertising content based on the identification by adding keywords to the request from a network activities database; and*

*transmitting the plurality of data packets including the modified request for advertising content.*

## **The Law**

9. The examiner has raised an objection under section 1(2)(c) of the Patents Act 1977 that the invention is not patentable because it relates to a program for a computer and a business method as such; the relevant provisions of this section of the Act are as follows:-

*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)...*;

*(b)...*;

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

*(d)...*;

*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.*

10. The starting point for determining whether an invention falls within the exclusions of section 1(2) is the judgement of the Court of Appeal in *Aerotel/Macrossan*. The interpretation of section 1(2) has been considered by the Court of Appeal in *Symbian Ltd's Application*<sup>1</sup>. *Symbian* arose under the computer program exclusion, but as with its previous decision in *Aerotel*<sup>2</sup>, the Court gave general guidance on section 1(2). Although the Court approached the question of excluded matter primarily on the basis of whether there was a technical contribution, it nevertheless (at paragraph 59) considered its conclusion in the light of the *Aerotel* approach. The Court was quite clear (see paragraphs 8-15) that the structured four-step approach to the question in *Aerotel* was never intended to be a new departure in domestic law; that it remained bound by its previous decisions, particularly *Merrill Lynch*<sup>3</sup> which rested on whether the contribution was technical; and that any differences in the two approaches should affect neither the applicable principles nor the outcome in any particular case. But the *Symbian* judgment does make it clear, that in deciding whether an invention is excluded, one must ask does it make a technical contribution? If it does then it is not excluded.

11. Dr Potter agreed that the correct approach for assessing patentability is that set out by the Court of Appeal in its judgement in *Aerotel/Macrossan* for deciding whether an invention is patentable. This test comprises four steps:

- 1) properly construe the claim;
- 2) identify the actual contribution;
- 3) ask whether it falls solely within the excluded matter;

<sup>1</sup> *Symbian Ltd v Comptroller-General of Patents*, [2009] RPC 1

<sup>2</sup> *Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application* [2006] EWCA Civ 1371; [2007] RPC 7

<sup>3</sup> *Merrill Lynch's Application* [1989] RPC 561

- 4) check whether the contribution is actually technical in nature.
12. The operation of this 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 explains that the fourth step of checking whether the contribution is technical may not be necessary because the third step should have covered the point.

### **Arguments and analysis**

13. I am grateful to Dr Potter for having submitted skeleton arguments prior to the hearing which provided a useful summary of the main points which were discussed during the hearing. I do not intend to repeat all the arguments here in full but will consider them appropriately in the paragraphs which follow.

### **Step 1: Construe the claim**

14. The first step of the test requires me to construe the claims. I consider the claims to lack conciseness because of the multiple independent claims 1, 16 and 8, 21 relating to the same aspects of a network appliance and a computer implemented method, respectively. This does cause some doubt on the scope of the invention with respect to the essential features. However I accept that there is unity of invention with independent claim 16 falling within the scope of claim 1 and independent claim 21 falling within the scope of claim 8. Claim 1 and claim 8 are equivalent in scope and claim 16 and claim 21 are also equivalent in scope.
15. There is a difference of opinion between the applicant and the examiner as to the scope of the invention.
16. The examiner in his report of 08 July 2014 construed claim 1 as: *“a network system, analysing data packets being sent from a local network to an external network for requests for advertising content, and replacing said requests for advertising content with alternative requests for advertising content based on a user profile.”* The examiner has maintained this interpretation in the pre-hearing letter of 16<sup>th</sup> January 2015.
17. The applicant asserts in the letter of 03 November 2014 that the claim can be construed as *“automated modification, in a network appliance, of data packets characterised by comprising a request for advertising content and supplementing or modifying the data packets to include keywords retrieved from a network activities database where the network activities database comprises keywords related to previous network activity of devices on the network, such as websites that may have been accessed from those devices.”*
18. At the hearing Dr Potter emphasised that the request should not be limited to ‘advertising content’ but should be interpreted much broader in that the advertising ‘content’ be viewed as ‘an electronic signal’. The content of the electronic signal is not relevant but the ‘automatic modification of the electronic signal to produce a new electronic signal’ is what matters.

19. Considering the wording of the claims in light of the description, I find it difficult to take the broader interpretation as presented at the hearing and in correspondence, particularly since the problem to overcome is to provide the user with a better experience, thus more relevant advertising information, based on their user profile. I therefore shall interpret the claims as worded and include the limitation of 'advertising content' being an essential part of the invention.
20. I agree with the examiner in that it is the 'advertising content' which contributes to defining this invention from the prior art. The applicant in their letter of 03 November 2014 overcomes the teachings of the cited prior art, WO2006/081680 A1, US2010/024032 A1, US2009/177771 A1, by introducing the following limitation into the claims: "... *an advertisement profile generator configured to generate a user profile of a user of the internal network and modify the request for advertising content based on the user profile by adding keywords to the request from a network activities database; ...*"

## **Step 2: Identify the actual contribution**

21. For the second step, it is necessary for me to identify the contribution made by the invention. Paragraph 43 of *Aerotel/Macrossan* explains that this is to be determined by asking what it is- as a matter of substance not form – that the invention has really added to human knowledge having regard to the problem to be solved, how the invention works and what its advantages are.
22. In the skeleton arguments of 08 June 2015, Dr Potter identified the problem as being: "...how to improve the relevance of information provided to a person making a request for information..." and "...how to enhance the request for information to improve the relevance of information provided in response to the request..."
23. The first examination report of 07 October 2013, paragraph 8, sets out the examiner's analysis of the alleged contribution: "...*a network appliance (which may be a router, gateway, or other conventional device) and a connection to a wider network (in practice, the Internet)...particular set of software instructions which enables the computer hardware to carry out the advertising steps defined.*" The examiner could not determine the actual contribution at this first stage as the invention was deemed not novel and lacked an inventive step.
24. As mentioned previously in point 20, the examiner and applicant agreed that that the invention is considered to be novel and inventive based on the introduction of the feature of, "an advertisement profile generator". The applicant identifies, in the letter of 03 November 2014, the contribution to be: "*a machine which automatically determines the information content of an electronic message, (i.e. requesting advertising content) and automatically modifies and/or supplements such electronic content with further electronic content representative of keywords associated with or based on a user profile, the user profile based on the user activity from within the internal network.*"

25. The examiner's most recent report accepts the amendments to the scope of the invention, agreeing with the applicant's submission. The examiner iterating that the automatic modification of the signal (data packet) content is to optimize advertising content.
26. Dr Potter placed emphasis on the need to look at substance not form and to ignore implied content of the data packet as advertising but instead to look at the substance of automatically modifying electronic signals. At the hearing Dr Potter presented this broader outlook, in that the invention should be viewed as modifying a technological structure, that is the signal, and not modifying the 'content' of the signal. The software receiving an electronic signal compares this signal with stored electronic data based on a predetermined criteria and the received signal being automatically modified if the criteria has been met, the modified signal being sent out to an external network.
27. I accept that the correct approach is to consider substance over form. The physical components of the invention taken in isolation are conventional and it is how the components are controlled by software, is where I see the advancement resides.
28. From my understanding, the invention utilises a known type of network signal which incorporates a data packet. The data packet in simplistic terms is configured with a header and payload, the header containing network address information and the payload containing the data 'content'. The software aspect of the invention automatically changes the payload of the signal based on a predetermined criteria.
29. Having considered the cited prior art, correspondence and arguments presented, I consider the actual contribution to be: a network appliance which communicates information between an internal network and an external network and configured to optimize advertising content displayed on the internal network, the network appliance being configured to receive data packets with requests for advertising content; the network appliance being characterised by the automatic modification of the data packet content based on a user's profile, by adding keywords to the request from a network activities database with output from the network being a modified signal with optimized advertising content.

### **Step 3: Ask whether it falls solely within excluded matter**

30. What I must now do is decide whether the contribution that I have identified resides solely within excluded matter. The examiner objected that the contribution lay in excluded matter, namely method of doing business and a program for a computer, to which Dr Potter provided counter arguments. I will now consider each of these in turn.

### **Business Method**

31. Dr Potter, given his differing opinion as to what constitutes the actual contribution, came to a different answer. He considers the contribution to be a new signal

which is inherently technical in nature and sufficient to avoid exclusion as a business method.

32. It is clear to me however, that the signal is not a new signal, neither in its configuration nor in its transmission but 'new' only in the sense that it differs from the original signal because the 'content' has changed.
33. Regarding the actual contribution as I have identified it, I consider it to fall wholly within the business method exclusion. The contribution seeks to address a business problem by the use of clever software, which is capable of providing the user with more appropriate/customised/relevant advertising content based on their user profile. The contribution is not technical in nature- it relates to a business method 'as such'- with the problem solved being a business problem and not a technical problem. The fact that the method is implemented by using hardware which is technical in nature does not provide a relevant technical contribution to avoid the exclusion.

### **Computer Program**

34. The business problem borne out by the contribution relies on a computer program for its implementation. However, through both correspondence and argument at the hearing, the applicant has sought to persuade me that the contribution as identified by the applicant does not fall foul of the computer program exclusion as such. The fact that the invention is effected in software does not mean that it is automatically excluded from patentability as a computer program as such. What matters is whether or not the program provides a technical contribution.
35. The task of determining whether the invention provides a technical contribution is a difficult one, as is evident from the plethora of case law in this area. However, I note that both the examiner and Dr Potter have made reference to the 'signposts' set out by Lewison J as he then was in *AT&T/CVON*<sup>4</sup>, which I consider to be a useful guide in determining whether the contribution is technical in nature. The signposts were modified slightly by Lewison L J in *HTC v Apple*<sup>5</sup> and now read as follows:
- 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 the program make the computer a better computer in the sense of running more efficiently and effectively as a computer;*
  - v) *whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented*

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<sup>4</sup> *AT&T Knowledge Ventures/Cvon Innovations v Comptroller General of Patents* [2009] EWHC 343 (Pat)

<sup>5</sup> *HTC Europe Co Ltd v Apple Inc* [2012] EWHC 1789 (Pat)

36. Dr Potter presented both in correspondence and at the hearing, arguments to demonstrate to me that the contribution identified by the applicant is technical in nature since it is a new method and network appliance of modifying network signals. He sought to demonstrate specifically that the contribution satisfies signposts i, iv and v.
37. Dr Potter argued that signpost (i) is satisfied, suggesting that the action of sending a new signal from the internal network to the external network will cause an effect on a process outside of the computer. To demonstrate that signpost (iv) is satisfied, Dr Potter placed emphasis on the network appliance being installed at the network 'edge' of the internal network and that the network 'edge' was important to improved performance, reducing latency, which resulted in a better computer. He argued too that signpost (v) is satisfied because the problem of providing more relevant advertising to the user is solved rather than circumvented.
38. In my opinion, signpost (i) is not satisfied. Although the perceived effect is that a user will receive information that is tailored, more appropriate, more relevant to them based on their user profile, this is solving a business problem and not a technical problem. There is no technical effect on a process which is carried on outside of the computer (internal network) to satisfy this signpost.
39. Regarding signpost (iv), I accept that the network appliance including 'a data packet analyser' is associated with the internal network rather than the external network but I cannot accept the applicant's arguments because I am unable to establish the definition of the 'network edge', which is not supported or even mentioned in the claims limiting the scope of the invention. Furthermore, I consider there to be no technical effect with regards to there being a better computer in the sense of running more efficiently and effectively as a computer because the contribution I have identified does not result in the computer operating more efficiently but instead gives a user better, more relevant advertising content. Signpost (iv) is therefore not satisfied.
40. Signpost (v) is also not satisfied. Again in my opinion, the problem of providing more relevant advertising content to a user is achieved by software and how it is programmed to detect and modify the content of signals based on predetermined criteria- no technical problem is being solved.
41. I take from the description that no special arrangement of hardware is required and the software carrying out the invention is run on conventional equipment. I am satisfied that the actual contribution made by the invention is also in substance, a program for a computer as such, having been unable to identify any technical effects.

#### **Step 4: Check whether the contribution is technical in nature**

42. Having found the contribution to lie solely in excluded matter, I do not need to apply the fourth step of the test.

## **Other matters**

43. Several pieces of additional case law were considered by both the applicant and examiner through the course of correspondence. At the hearing, Dr Potter specifically presented the relevance of *Gemstar v Virgin*<sup>6</sup> in relation to the applicant's case. After further consideration, I do consider this precedent to have any bearing on my decision.

## **Conclusion**

44. After taking into consideration the applicant's case presented by Dr Potter at the hearing, the examiner's objections and also the patent specification, I am satisfied that the invention as set out in the independent claims 1, 8, 16 and 21, defines a non-patentable invention which falls within the business method as such and program for a computer as such exclusions of section 1(2)(c). I can see nothing in the remaining claims or the rest of the specification that could form the basis of a valid claim. I therefore refuse the application under section 18(3).

## **Appeal**

45. Any appeal must be lodged within 28 days after the date of this decision.

## **C L Davies**

Deputy Director acting for the Comptroller.

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<sup>6</sup> Gemstar-TV Guide International Inc v Virgin Media Ltd [2010] RPC 10