Intellectual Property Office

BL O/199/18

28th March 2018

PATENTS ACT 1977

APPLICANT Adobe Systems Incorporated

ISSUE Whether patent application GB1513016.4 complies with section 1(2) of the Act

HEARING OFFICER Dr J Houlihan

DECISION

Background

1 The application, entitled "*Automatic Aggregation of Online User Profiles*", was filed on 23 July 2015 and published as GB2532538 on 25 May 2016. It claims priority from a US application 14/551365

2 The examiner has maintained that the invention as claimed relates to a method of doing business and a computer program and is therefore excluded from patentability under section 1(2) of the Patents Act. The issue to be decided therefore is whether the invention as claimed consists of a program for a computer and/or a method of doing business.

3 The matter came before me at a hearing on 25 January 2018. The applicant was represented by Dr Anton Baker and Mr David Meldrum of D Young & Co. Also attending were hearing assistant Mr David Hotchkiss and the examiner Kalim Yasseen (via telephone).

The invention

4 The invention relates to a method for creating a unified user profile drawing data from two different computer networks, such as social media networks. Data from a target network B is pre-processed in advance of receiving a target user query to generate a set of clusters. Upon receipt of a user query relating to an online user profile on a network A, the clusters on network B are segmented based upon a profile feature. A set of candidate user profiles are used to identify a "match candidate" on network B. A unified user profile is then generated that includes features from the user profile on network A and the single match candidate profile on network B.

Claims

5 The latest “formal” version of the claims on file are dated 3 March 2017. A set of claims, having three independent claims 1, 4 and 14, were submitted with the applicant’s skeleton arguments on 03 January 2018 as a “proposed” set of claims. Mr Meldrum confirmed that the claims previously filed on 3 March 2017 were the formal set of claims but would like the proposed set of claims to be considered if the difference in them has a bearing on the outcome of this decision.

6 Claim 1 of 3 March 2017 reads as follows (the proposed set of claims of 3 January 2018 differs from these claims by the addition of one phrase which is underlined and in square brackets).

> *A system comprising:*
>
> *a backend server, comprising:*
>
> *an electronic memory for storing executable instructions;*
>
> *a processor configured to execute the instructions to:*
>
> *pre-process a target network B, in advance of receiving a target user query, thereby generating a set of clusters;*
>
> *store the clusters in a cloud-based storage; and*
>
> *periodically repeat the pre-processing of network B to update the clusters in the cloud based storage as needed;*
>
> *[a plurality of client computing systems, each client computing system comprising]:*
>
> *an electronic memory for storing executable instructions;*
>
> *a processor configured to execute the instructions to:*
>
> *receive the target user query including an online user profile on a network A, the user profile having a feature;*
>
> *use the feature to segment the clustered target network B, at least one cluster including multiple user profiles each including one or more features, thereby generating a set of candidate user profiles on the target network B;*
>
> *rank, via a supervised classifier, the candidate user profiles included in the set, so as to identify a single match candidate user profile for the target user query; and*
>
> *generate a unified user profile that includes features from the user profile on network A and the single match candidate user profile on network B.*

7 Claims 4 and 14 relate to a computer implemented method and computer program product which have features very similar to those of claim 1. I have considered these claims in relation to the determination of the actual contribution under step 2 of the *Aerotel* test below (paragraph 19) and am of the view that they do not have a bearing on the actual contribution of the alleged invention. I therefore do not need to consider these claims separately any further.

The law

8 This decision concerns section 1(2)(c) of the Act which 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).....;*
>
> *(b).....;*
>
> *(c) a scheme, rule or method of 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."*

9 There is a large volume of case law on the subject of excluded inventions. In *Aerotel/Macrossan*[1] the Court of Appeal set out a four step test to approach the issue of excluded matter which they affirmed in *HTC v Apple*[2] and *Lantana*[3]. In *Aerotel* the issue was a computer program; *Macrossan* concerned a method of doing business.

10 The four step test proposed in *Aerotel* is as follows:

1. Properly construe the claims
2. Identify the actual (or alleged) contribution
3. Ask whether it falls solely within the excluded subject matter

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[1] Aerotel Ltd v Telco Holdings Ltd; Macrossan's Application, Court of Appeal [2007] RPC 7 (hereinafter referred to as "Aerotel")

[2] HTC Europe CO Ltd v Apple Inc [2013] EWCA Civ 451

[3] Lantana Ltd v The Comptroller General of Patents, Designs and Trade Marks [2014] EWCA Civ 1463 (13 November 2014)

4. Check whether the actual or alleged contribution is actually technical in nature

11 In *Symbian*[4] the Court of Appeal confirmed that the *Aerotel* test is equivalent to the previous case law test of "technical contribution". The same court confirmed this approach in *HTC v Apple* and also, with some modification, the five signposts established in *AT&T*[5] for interpreting whether a computer program makes a technical contribution. *Aerotel* thus codifies the approach to the law on excluded matter but does not depart from the principles in domestic law which were established before it. In particular, the law regarding the business method exclusion established in *Merrill Lynch*[6] remains relevant.

Step 1 - construe the claims

12 The examiner did not object to the clarity of the claims and I consider both the formal version and proposed versions of the claims are clear.

Step 2 - identify the actual contribution

13 In addressing this step Dr. Baker cautioned against using the contribution approach quoting paragraph 34 of *Aerotel* which states:

> *"The second objection to the contribution approach is that accepted by this court in Merrill Lynch - a reductio ad absurdum argument. An example of it runs thus: suppose the "discovery" of the genetic (nucleotide) sequence which encodes for a particular valuable protein and a claim to a novel cloning vector incorporating that sequence. If you "strip out" the discovery all you have is a known sort of cloning vector. So all that has been added is the discovery - since that is unpatentable the claim is unpatentable too. That cannot be right - it would exclude many valuable inventions. Hence the contribution approach is wrong."*

14 On this basis, Dr Baker submitted that hardware features should not be merely dismissed on the grounds that they are allegedly conventional and that the contribution should be assessed on the claims as a whole. He, quite rightly so, acknowledged the statement by Jacob LJ in *Aerotel* (paragraph 43) is now firmly established as the approach to assessing the actual contribution. Jacob LJ said:

> *" "What has the inventor really added to human knowledge". It is an exercise in judgment probably involving the problem said to be solved, how the*

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[4]Symbian Ltd v Comptroller-General of Patents, Court of Appeal, [2008] EWCA Civ 1066, [2009] RPC 1 (hereinafter referred to as "Symbian")

[5] AT&T Knowledge Ventures LP Application and CVON Innovations Ltd's Application v Comptroller-General of Patents [2009] EWHC 343 (Pat) High Court (hereinafter referred to as "AT&T")

[6] Merrill Lynch's Application [1989] RPC 19

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".

15 This is indeed the approach I will take and I do not see a need to indulge in any jurisprudential analysis with respect to the earlier commentaries in *Aerotel*.

16 The claim is essentially in two parts. The first part relates to the pre-processing (my emphasis) of data on a backend server to create clusters of a network B. The second part relates to the use of that data by a client computing system to create a unified user profile by using a user profile on Network A to segment the clusters of profiles on Network B to create a unified user profile which includes features obtained from Network A and the individual profile on Network B. This was explored at some length in the hearing.

17 Taking Dr Baker's submissions together on the first part and second part of the contribution I regard his definition of the contribution as *"A system comprising a backend server and a plurality of client systems where the autonomous backend server periodically pre-processes the target network to generate a set of clusters, these clusters are stored in a safely accessible cloud based location so that, at a later time, when any one of a plurality of client computing systems receives a query, that client computing system can retrieve the pre-processed data from the cloud based storage and then perform subsequent processing on that data to create a unified user profile".*

18 While this differs from the examiner's definition of the actual contribution, which is broader, I do not think the differences are material and I asked the examiner to comment on this issue in the hearing. In all, I am happy to accept Dr Baker's definition as I have stated it in the preceding paragraph with the addition that the unified user profile includes features generated from Network A and the same user's profile on Network B.

19 Claim 4 relates to a computer-implemented method which has all of the features of claim 1. Claim 14 relates to a computer program product for performing a process that has the same features as the invention of claim 1. I do not see that the actual contribution of either of claims 4 and 14 differs from that of claim 1.

Step 3 - does the actual contribution fall solely within an excluded field

20 The question of how the actual contribution of an invention in the field of computer programs should be considered can be found in the oft quoted phrase in *Symbian* which reads:

"*What is decisive is the technical contribution which the invention described in the claim when considered as a whole makes to the known art" [37].*

21 Although made under the header of step 2, Dr Baker said that an element of the contribution is that the data processing can be done once at a single location on a

plurality of devices which enables a simpler calculation. He said that in this approach to data processing the data is capable of being split into two parts in which the first part can be pre-processed to create clusters of user profiles and the second part which is bespoke each time (presumably to the user query). He maintained that this is not just a mere arbitrary separation of processing between a backend server and client systems which just shuffles the processing step to another point in the system but represents a technical change as the processing is only carried out once rather than every time a request is received. However, this seems at odds with the reference in claim 1 to which says "*periodically repeating the pre-processing of network B*". Nonetheless, if the backend data pre-processing is viewed as one step then I can see there is some advantage in this aggregated step.

22 The applicant focussed their submissions under step 3 in relation to the *AT&T* signposts, but emphasised that these signposts are not exhaustive. I take that point, although nonetheless they provide a useful guide. I will address the signposts in turn, although there was considerable overlap between the points raised under step 1 and 2 and to step 2 in connection with steps 3 and 4. Underpinning the applicant's submissions was that the data processing was architectural which had an effect both outside the computer (in a 'cloud') and also made the computer run more efficiently and in a new way.

Signpost 1. Does the claimed technical effect have a technical effect on a process which is carried on outside of the computer?

23 Dr Baker stated that the invention could be viewed in two ways: either as separate server and client units which would satisfy the first signpost or alternatively as a computing system as a whole comprising a server and client computer. He referred to Birss J in *Lantana v Comptroller General of Patents [2013] EWHC 2673 (Pat)* who said:

> "*I start by noting that this invention consists entirely of software running on a conventional computing arrangement. I use the term "computing arrangement" rather than computer because the applicant is at pains to point out that this system requires two computers connected by a "telecommunications network". So it does but at the relevant date (2008) two computers connected across the internet was an entirely conventional computing arrangement. The fact that two computers and the internet are required is not what makes a software invention patentable*." [30]

24 Dr Baker said that "*If we take this view that this is a single computer then any change in how data is processed or flows inside these arrangements of a computer is necessarily an architectural change, if we are viewing this as a computer then changes in data flow inside the computer are architecture*". I do not agree. This does not have a technical effect on a process outside the computer. Rather, the process is wholly concerned with manipulating data inside a computer.

25 Dr Baker submitted briefly in relation to two computers that what goes on in the backend server (a computer system) necessarily has an effect outside it as the effect is in the cloud system. I appreciate for the sake of completeness it was incumbent on Dr Baker to make this point. However, that argument does not hold water. The system overall is a computer system of which a 'cloud' is a part.

Signpost 2. Does the claimed technical effect operate at the level of the architecture of the computer; that is to say is the effect produced irrespective of the data being processed or the application being run?

26 The question of the "architectural" point under signpost 2 was a significant element of the applicant's submission at the hearing in which *Symbian* was referred to. As I felt this was a particularly important point I invited the applicant to make submissions on Symbian following the hearing as it had not been referred to in the correspondence between the applicant and the examiner. The applicant filed a letter on 1 February 2018 after the hearing which said as well as being relevant to signpost 2, the "architectural" point was relevant to signposts three and four.

27 Dr Baker developed his points made under step 1 in his opening submissions on step 2. He said that in the process of data processing the data is capable of being split into two parts; one part which can be re-used and a second which is "bespoke". He further stated that this is only possible because of the hybrid classification system and that this is not an arbitrary split in data. Dr Baker's view was that this classification and processing was necessarily "architectural". However, to my mind this is conventional data processing. The step of pre-processing and the unification of data is what computer programs do - they process data. I do not this see this an architectural level of control that is in line with the Court of Appeal's view in *Symbian* regarding architectural control.

Signpost 3. Does the claimed technical effect result in the computer being made to operate in a new way?

28 The applicant's letter states in relation to the third signpost:

"*If we take the examiner's submissions that using Lantana the backend server and clients act as "the" computer, then the claimed contribution causes the computer to operate in a different architectural manner than it did in prior systems*". *Specifically in the present invention a part of the algorithm is pre-processed at a centralised back end server in advance and a part is processed at a physically separate client on demand. Previously the whole calculation would be carried out on demand every time it was required at a single location"*.

29 At the hearing Dr Baker submitted that on account of the hybrid classification system the computer is operating in a new way. I disagree. I cannot see the computer itself operating in a new way. The examiner said in his report of 12 December 2016 "*…it is the generation of a (unified) user profile which is done in a new way*". I agree. The program and its outputs are new, not the computer's operation.

Signpost 4. Does the program make the computer a better computer in the sense of running more efficiently and effectively as a computer?

30 In considering the fourth signpost I believe a correct approach in accordance with established UK case law is to compare how the computer system runs with the claimed method compared with how the computer system would run without the claimed method and use that comparison to assess whether or not the computer is being made to run more efficiently and effectively as a computer system.

31 It was argued that the pre-processing of network B is only carried out once and then stored so it is not repeated every time a user query is received resulting in less total time spent processing data and thus a more efficient system. To my mind, this is about efficiency in data processing within a computer (apart from the fact that the claims include the step of periodically repeating the pre-processing of network B to update the clusters).

32 The applicant's letter of 1 February 208 says in relation to the fourth signpost:

> "… *'The' computer is actually running more efficiently and effectively as a computer as it is distributing calculations between its components such that, where possible, elements of the calculation are carried out only once and in advance (i.e. due to the novel architecture which dictates data flows and where data is processed)"*.

33 At the hearing Dr Baker submitted that the invention reduces duplication of data processing and that the data is ready for the client. Clearly, it could be said that most if not all computer programs necessarily seek to add value in terms of efficiency to the user - but that is an entirely different issue to the efficient running of a computer *per se*. I think the advantages the applicant's describe are a consequence of the program and do not amount to making the computer itself more efficient or effective.

Signpost 5. Is the perceived problem overcome by the claimed invention as opposed to merely being circumvented?

34 The thrust of Dr Baker's and Mr Meldrum's arguments here was that data only needs to be processed once for a plurality of clients and therefore this overcomes the problem and resource burden of having to process data for each client query. For example, if a unified profile was created from Facebook™ and LinkedIn™, then processing all of LinkedIn for a single query arising from a Facebook profile would be very burdensome. In my view in order to reduce the processing time upon receipt of a user query, the claimed system merely displaces the problem by carrying out some of the processing prior to the query being made.

35 Dr Baker concluded that by dividing the process and reusing the calculations only the invention makes it "…*practically possible at all...*" to create a unified profile. I do not disagree that the invention brings advantages. It could be said that an advantage in any system "solves" a problem - but my view is that the problem at issue has to be overcome by technical solution. I am not sure that this signpost is particularly applicable to the data processing system in the instant case. For example, a weather App on my smart phone "solves" my problem of not being able to see the weather forecast on a television set when I am unable to view one. However, all things being equal, such an App is a computer program. As I see it, the invention allows data to be manipulated in a certain way, and in less time; the invention time shifts the process of creating a unified profile. In my view the invention here does not solve a technical problem as such.

36 In summary, the claimed invention does not pass the signposts of *AT&T/CVON* and as a consequence, following *Aerotel and Symbian* I cannot identify a technical contribution in the application. However, bearing in mind the applicant's point that the signposts are not exhaustive I have considered their submissions in correspondence

and at the hearing together with the specification and cannot find any evidence of a technical contribution.

37 After the hearing Dr Baker wrote a letter dated 26 March 2018 drawing my attention to an IPO decision in *Re. Landmark Graphics Corporation* (BLO/112/18). This decision was published on 20 February 2018, after the hearing and also after his earlier post-hearing submissions and therefore I am happy to consider it. He referred to paragraph of that decision in which the hearing officer said:

> *"Mr Russell and Dr Jones suggest that an applicant should be given the benefit of the doubt unless there is no reasonable doubt to be had. Insofar as this reasonable doubt is the same as the substantial doubt to which Mann J refers, I can agree with this principle. I consider that the question for me is whether or not there is such substantial doubt regarding each of these seven applications, such that where an applicant makes a reasonable case that their invention is patentable then I am bound to find in their favour*".

38 The thrust of the applicant's point here is that their submissions meet the required standard and therefore their invention is patentable. I agree with this test on the question of "*reasonable doubt*" but it does not apply to the instant case. I have *no doubt* in coming to the conclusions above that the claimed invention is a computer program and, as such, it lies solely within excluded subject matter.

Step 4 - check whether the alleged contribution is technical

39 This step is effectively a checking step should the conclusions under step 3 find that an alleged invention is not excluded. However, as I have not found evidence under step 3 that the invention is not excluded then I respectfully disagree with Dr Baker and Mr Meldrum closing submissions here that the invention is technical.

Is the invention a business method, as such?

40 The examiner had raised the objection that the claimed invention was also a method of doing business. Mr Meldrum made brief submissions on this point. The thrust of these submissions was that as the applicant considered that the invention had a technical component, and was not a computer program, it follows that the invention cannot be a business method in its entirety (as such). Mr Meldrum pointed out that practically all patents have a business and commercial aim but that does not make them business methods. It follows, says Mr Meldrum, that the claimed invention is not a method of doing business *per se*. I would agree. As I have said above, in my view the actual contribution of the method of claims 1, 4 and 14 relates to a computer program as such which entirely concerns the processing of data. Clearly that data relates to business information but I do not see that as meaning that the claims wholly relate to a method of doing business.

Conclusions

41 I hold that the independent claims, 1, 4 and 14 of both the formal version filed on 3 March 2017 and proposed version filed on 18 January 2018 relate to a computer program as such and therefore are not patentable by virtue of section 1(2) of the Act.

42 I have considered the dependant claims and the description and can find no saving amendment. I therefore refuse the application under section 18(3) of the Act.

Appeal

43 Any appeal must be lodged within 28 days.

Jim Houlihan
Deputy Director acting for the Comptroller