



PATENTS ACT 1977

APPLICANT	Innoplexus AG
ISSUE	Whether patent application GB1722307.4 complies with section 1(2) of the Patents Act 1977
HEARING OFFICER	Ben Buchanan

DECISION

Background

- 1 This decision relates to whether patent application GB1722307.4 complies with section 1(2) of the Patents Act 1977 (“the Act”).
- 2 The application was filed on 30 December 2017 and was published on 10 July 2019 as GB2569954A. An abbreviated examination report was issued on 22 June 2018 which objected to excluded subject matter (as a program for a computer) and deferred all other matters of examination, including the search for prior art. The applicant chose not to amend but contested the issue. After several rounds of correspondence, no agreement was reached and the application was put before me for a decision on the papers.
- 3 Because the examiner has not performed a search and has deferred completion of the examination, instead focussing solely on the objection raised under section 1(2), if I find the claimed invention to be allowable then it will be necessary for me to remit the application to the examiner to perform the search and complete examination.
- 4 This decision covers only whether the invention is excluded as a program for a computer under section 1(2)(c) of the Act. In reaching my decision, I confirm that I have considered all of the relevant documentation on file.

Subject matter of the invention

- 5 The claimed invention relates to a method, system, and program for identifying a nascent topic related to a field of interest and addresses the problem of analysing aggregated data across multiple channels. It works by analysing a user request for subject matter (e.g. via a search query), determining a numerical factor for topics within a context and also for the context itself, normalizing the topic against the context and determining a short term average, a long term average and calculating the difference between those two. These operations are repeated at a later time

interval followed by comparing the differences over time to determine whether the increasing interest in a topic is deemed to be nascent.

- 6 By automating steps which might have otherwise been undertaken manually, human intervention is reduced. Trends in topics can be predicted and the invention may find application in investment, research and innovation. Examples in the description include the topic of treatment for a specific condition within the field of medical science. A resulting nascent topic may be a particular drug treatment which is being increasingly discussed online. The invention may use text-processing, web-crawling and ranking but these are not specifically defined in the independent claims.
- 7 The claims at issue are those originally filed on 30 December 2017. Three independent claims exist. Claim 1 is to a method; claim 12 is to a system for implementing the method; claim 25 is to a storage medium with program instructions for implementing the method. Claims 12 and 25 appear to share the same inventive concept as claim 1, so that they will stand or fall with the decision regarding claim 1.
- 8 Claim 1 reads:

“A method of identifying at least one nascent topic related to a subject matter, characterized in that the method comprises:

- a) receiving a request from a user, wherein the request is associated with a context related to the subject matter;*
- b) analyzing the request to determine at least one topic related to the context;*
- c) determining an activity factor related to each of the context and the at least one topic from at least one data record related to each of the context and the at least one topic;*
- d) normalizing the activity factor related to each of the at least one topic based on the activity factor related to the context to obtain a normalized score for each of the at least one topic;*
- e) analyzing the normalized scores of each of the at least one topic to determine a short-term average and a long-term average normalized score for each of the at least one topic;*
- f) calculating a difference between the short-term average normalized score and the long-term average normalized score for each of the at least one topic;*
- g) determining a change in the differences for each of the at least one topic, over a specific time period; and*
- h) identifying the at least one topic associated with a sustained increase in the difference over a predefined time duration within the specific time period as the at least one nascent topic related to the subject matter.”*

The law

- 9 The examiner raised an objection under section 1(2) of the Act that the invention is not patentable because it relates to one or more categories of excluded matter. The relevant provisions of this section of the Act are shown below:

1(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

...

(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.

- 10 The assessment of patentability under section 1(2) is governed by the judgment of the Court of Appeal in *Aerotel*¹, as further interpreted by the Court of Appeal in *Symbian*². In *Aerotel* the court reviewed the case law on the interpretation of section 1(2) and set out a four-step test to decide whether a claimed invention is patentable:

(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 actual or alleged contribution is actually technical in nature.

- 11 The Court of Appeal in *Symbian* made it clear that the four-step test in *Aerotel* was not intended to be a new departure in domestic law; it was confirmed that the test is consistent with the previous requirement set out in case law that the invention must provide a “technical contribution”. Paragraph 46 of *Aerotel* states that applying the fourth step of the test may not be necessary because the third step should have covered the question of whether the contribution is technical in nature. It was further confirmed in *Symbian* that the question of whether the invention makes a technical contribution can take place at step 3 or 4.

- 12 Lewison J (as he then was) in *AT&T/CVON*³ set out five signposts that he considered to be helpful when considering whether a computer program makes a

¹ *Aerotel Ltd v Telco Holdings Ltd & Ors* Rev 1 [2007] RPC 7

² *Symbian Ltd v Comptroller General of Patents* [3009] RPC 1

³ *AT&T Knowledge Ventures/CVON Innovations v Comptroller General of Patents* [2009] EWHC 343 (Pat)

technical contribution. In *HTC/Apple*⁴ the signposts were reformulated slightly in light of the decision in *Gemstar*⁵. The signposts 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 the program makes 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.*

- 13 In addition to these precedents, in their letter of 30 December 2019, the applicant has noted from a decision of the Comptroller (*Landmark Graphics Corporation*⁶) that “*where an applicant makes a reasonable case that their invention is patentable then [the Examiner is] bound to find in their favour*”. The context (which is quoted in full by the applicant in their letter) is that where there is *substantial doubt* regarding the patentability of an application, a reasonable argument for patentability should be accepted. When considering whether an argument is reasonable, in addition to determining the existence of substantial doubt, I would suggest that mere assertion is not enough.
- 14 The applicant also adds that section 130(7) of the Patents Act 1977 requires the IPO to apply the law consistently with the EPC. Their agent has provided examples of where patents in a similar field were granted by the EPO.
- 15 Whether *substantial doubt* exists will be informed by application of the *Aerotel* test. If I find that it does, then I can consider whether the applicant’s argument is reasonable. In respect of consistency with the EPC and the example granted patents, I am confident that the *Aerotel* test will lead to a consistent result and I shall consider the present application on its merits. The judgment of the Court in *Aerotel* is binding on me; the status of European patents is not.

Application of the *Aerotel* approach

Step (1): Properly construe the claim

- 16 The examiner and the applicant agree that the construction of claim 1 is straightforward and that the claims are clear. For convenience though I will clarify the relationship between features within the claim. The at least one nascent topics are intended to mean topics which are increasing in popularity. The claim refers to

⁴ *HTC v Apple* [2013] EWCA Civ 451

⁵ *Gemstar-TV Guide International Inc v Virgin Media Ltd* [2010] RPC 10

⁶ BL O/112/18

subject matter and a context which is identified as a subset of the subject matter. Similarly, a topic is a subset of the context. Step (g) “determining a change in the differences for each of the at least one topic, over a specified time period” must further entail an implicit periodic repetition of previous steps to calculate at least one second difference in the score corresponding to a later date. This is covered in the description in pages 18-20.

Step (2): Identify the actual or alleged contribution

17 The examiner and the applicant disagree in their assessments of the contribution.

18 In their letter of 27 March 2020 the applicant stated that the invention provides a contribution to overcome the problem of *how to accurately determine nascent topics which are gaining popularity within a domain*.

19 They formulated the contribution as follows:

determining an activity factor related to each of the context and the topic from at least one data record, normalizing the activity factor to obtain a normalized score for each of the at least one topic, analyzing the normalized scores to determine a short term average and a long-term average normalized score, calculating a difference between the short-term average normalized score and the long-term average normalized score, determining a change in the differences for each of the at least one topic, over a specific time period, identifying the at least one topic associated with a sustained increase in the difference over a predefined time duration as the nascent topic related to the subject matter.

20 The applicant goes on to say that this has the advantage of providing an effective and reliable identification of the nascent topic related to a given subject matter and asserts that the problem, the solution and its implementation are technical.

21 Responding to the applicant’s letter of 27 March 2020, the examiner reiterated her original assessment of the contribution as set out in her examination report of 30 December 2019. In her view, the contribution was:

a method of identifying a topic whose relevance increases within a population of online users, e.g. topic that is gaining popularity on the web.

22 When assessing the contribution, it is helpful to follow the approach outlined by Jacob LJ in paragraph 43 of *Aerotel*:

“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.”

23 In this regard I have to say I think the applicant’s formulation is much closer to the mark than the examiner’s. Just as one must refrain from dissecting the claimed

invention to consider only what is new, so too must one avoid abstracting too far from the problem solved by, the function implemented by and the effect delivered by the invention.

- 24 I have considered the examiner's and the applicant's positions. In my opinion the contribution must reflect more than just the applied end result asserted by the examiner. However, that aspect should frame the detail of implementation and the advantages proposed by the applicant. Focussing on the key elements of the invention defined by the independent claims, I identify the contribution to be:

identifying an increase in interest in a specified topic compared with its wider context by analysing a user input, determining a numerical factor reflecting activity for the topic normalized against a similar numerical factor representing the context, deriving short-term and long-term average scores for the topic therefrom and comparing the difference between the two over time, to effectively, reliably and accurately determine whether the popularity is increasing and identifies the topic as a nascent topic.

- 25 All I would add to the above is that "effectively, reliably and accurately" are alleged advantages stated relative to existing aggregated and/or manual methods⁷, and may benefit applications of the invention to fields such as investment, research and innovation.
- 26 I also note that the invention is implemented on a computer system using standard hardware and data transmission means. Such conventional apparatus and techniques cannot form part of the contribution.

Steps (3) & (4): Does the contribution fall solely within the excluded subject matter; check if the contribution is actually technical.

- 27 The third and fourth steps of the *Aerotel* test involve considering whether the contribution falls solely within excluded categories, and then checking whether the contribution is technical in nature. It is appropriate to consider these two steps together because whether the contribution is technical in nature will have a direct impact on whether it falls solely within excluded matter.
- 28 In addressing these questions, both the examiner and applicant have made reference to the *AT&T/CVON (HTC/Apple)* signposts and I will do the same. I note that in the applicant's arguments only reference to signpost (v) has been made explicitly, however I will address all five because other comments appear relevant to other signposts. Additionally, the applicant correctly asserts that the signposts are non-exhaustive and are not prescriptive.
- 29 With respect to signpost (i), the examiner has argued that the claimed process takes place entirely within a computer system. I'm not convinced that is true. A user provides a topic e.g. via a search query, and – although admittedly not clearly within the scope of the claim – the identified results may be presented in some way. Those are activities outside a computer. However, the signpost asks whether there is a *technical effect* on a process outside the computer. Neither of those activities are

⁷ See e.g. description page 2

technical, nor is any effect upon them. The applicant has not contended this, and I agree that signpost (i) does not give the invention technical character.

- 30 With respect to signposts (ii)-(iv), the examiner has stated that they are not applicable because the program does not operate at the level of the architecture, nor does the computer operate in a new way, nor does it make for a better computer.
- 31 The applicant has argued in their letter of 30 December 2019 that the “invention changes a manner in which a computer functions so that it is able to perform certain data processing tasks with a greater degree of responsiveness and efficiency, and therefore has a technical effect”, which perhaps points towards signposts iii) and iv).
- 32 I can resolve this quickly. The invention involves the computer running under the instruction of a different program; that is the only way in which the computer operates differently. It does not fundamentally change how the computer operates below the application layer, or when other programs are run. Any improvement in responsiveness and efficiency is at the application task level and is due to a programmatic improvement. In the absence of an architectural or operating system improvement I am left with the conclusion that improved data processing is a consequence of an improved program, without any evidence of a technical effect on or within the computer itself. If the proposed argument was valid, then no new program would be excluded.
- 33 Finally, signpost (v) asks whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented. There is indeed a problem here: Prior art methods of aggregating data do not work well across multiple channels including social networks and blogs, and existing statistical analyses require burdensome manual intervention. As the applicant’s letter of 30 December 2019 argues, such methods are inefficient and cumbersome.
- 34 In order to demonstrate that the solution provides a relevant technical effect however, the problem itself must be technical⁸, as noted in the examiner’s report of 27 January 2020. The examiner initially asserted that the problem was not technical in her report of 22 June 2018. She expanded on this in paragraph 17 of her report of 4 November 2020 by pointing out that the problem of identifying a <nascent> topic appeared to be one of manipulating data. She pointed to the similarity with the problem which was considered in the case of *Autonomy Corp Ltd*.⁹ At paragraph 40, Lewison J (as he was then) stated:

In my judgment, as Mr Tappin submitted, automatic text analysis, comparison and results generation is a paradigm example of a case in which the contribution falls squarely within excluded matter, i.e. a program for a computer. The claimed contribution, so far as the first element is involved does not exist independently of whether it is implemented by a computer. On the contrary, it depends on a computer processing or displaying information in an active window, and on a search program to analyse it and to compare and generate results. Nor does it require new hardware or a new combination of

⁸ From Hitachi T 0258/03

⁹ *Autonomy Corp Ltd v Comptroller General of Patents, Trade Marks & Designs* [2008] EWCH 146 (Pat)

hardware; and it does not result in a better computer. The only effect produced by the invention is an effect caused merely by the running of the program, which consists of the manipulation of data. It is in short a claim to a better search program.

- 35 Much of the counter argument to the examiner's position is the assertion that the problem, the invention, and its implementation is technical. For example, in their letters of 30 December 2019 and 27 March 2020, the applicant asserts that the problem, the solution and the required analysis is technical. In support of this, they contend (for example in their letter of 30 December) that automation of the process leading to lower user intervention and accurate determination of nascent topics both evidence a technical contribution. A user is saved inconvenience and provided with relevant accurate information. The repeated assertion is that these things are technical, and that the contribution is technical in nature as a virtue of the capability of the underlying system. I regret I disagree. For the reasons behind my conclusions in respect of the first four signposts, I find no evidence that the problem, its solution, or the manner of implementation are technical. The advantages put forward by the applicant, and indeed automation itself, are a consequence of programmatic implementation but are not indicative of a technical effect in themselves.
- 36 Having considered both positions, I have also reviewed the original filing. Pages 1 and 2 set out the problem succinctly. Essentially the problem is one of how to identify nascent topics. Anyone doing so using existing methods and resources would struggle with the wide distribution of the data, the burden of aggregating it, and the sheer volume of information which would result. Algorithms exist for extracting information about the data but are said not to be able to further process this data to identify topics of growing interest. I see no reason to doubt this analysis of the problem provided in the description.
- 37 By providing a means for systematic data analysis and using a computer to identify the relevant data and carry out mathematical processing to identify a topic with a sustained growth in interest, the problem appears to be solved. However, I fail to see how the problem itself is a technical one. This is really a problem of data processing – extraction and analysis. Such data manipulation could be carried out by a skilled person without the use of a computer by monitoring data in his or her own field of expertise. Computerising the task makes it feasible through the conventional advantages of automation. It is therefore clear to me that the problem is not a technical one, but one of automating of an intellectual task and implementation in a computer program. As a consequence, signpost (v), whilst perhaps indicating that a problem is overcome, is not indicative of the contribution providing a technical effect.
- 38 Finally, I should return to the point raised by the applicant and outlined at the beginning of this decision, with regard to when the applicant “makes a reasonable case that their invention is patentable then I am bound to find in their favour”. I regret that having applied the *Aerotel* test and considered the *HTC/Apple* signposts I am in no doubt that the claimed invention is excluded from patentability. Furthermore, were substantial doubt be deemed to exist, I have considered the applicant's arguments carefully and I do not consider that a reasonable case has been made.
- 39 In conclusion, in the absence of any technical contribution, I find that the invention defined by claim 1 is a program for a computer as such. It therefore does not comply

with section 1(2)(c) of the Act. As noted earlier, the same reasoning applies to claims 12 and 25 which are also rejected.

Conclusion

- 40 Since the claimed invention fails to comply with section 1(2), the application is refused under section 18 of the Act.

Appeal

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

Ben Buchanan

Deputy Director, acting for the Comptroller