



PATENTS ACT 1977

APPLICANT	Innoplexus AG
ISSUE	Whether patent application number GB1804936.1 complies with the requirements of section 1(2)
HEARING OFFICER	Ben Micklewright

DECISION

Introduction

- 1 Patent application GB 1804936.1 was filed on 27 March 2018 in the name of Innoplexus AG. It was published on 16 October 2019 as GB 2572750 A. The examiner argued that the invention was excluded from patentability as a program for a computer as such. The application has not been subject to a search with a report issued under section 17(5)(b) of the Patents Act 1977 (“the Act”). An abbreviated examination report was issued with this report in which the examiner set out their reasoning as to why the invention was excluded from patentability. The applicant disagreed and, following rounds of correspondence, requested a hearing. The matter was referred to me for a decision on the papers.
- 2 In reaching my decision I confirm that I have considered all the correspondence on file, including letters from the applicant’s representative dated 27 March 2020 and 24 September 2020.

The invention

- 3 The invention relates to identifying influential entities, for example top influential leaders or companies in a certain field, or different types of healthcare professionals in a pharmaceutical company. In the latter example, a medical professional may be selected as an influential entity for the purpose of influencing the public regarding an issued drug. However, according to the application, such extraction of influential entities requires manual maintenance and may not be regularly updated, possibly making the process more time-critical and biased and potentially leading to delays.
- 4 The present invention aims to provide a solution to these problems by providing an automated system which regularly updates the recent accomplishments in the field of interest of the user. The term “entity” is used in the application and is defined explicitly to refer to one or more persons, organizations, objects, domains and so

forth. "Entity records" are defined to refer to the information related to the entities. They include an entity name and a plurality of entity attributes. These attributes may include information regarding correspondence address, academic background, birthdate, research work, publications and so forth.

- 5 Each of the plurality of entity attributes can be tagged with at least one asset class. Asset classes relate to a category that one or more entity attributes may be assigned to, such as research papers, publications, clinical trials, guidelines, etc.
- 6 An importance score is determined for each of the entity records, based on the plurality of entity attributes for each record. Each asset class has a "contribution metric", that is a weight, assigned to it, to determine the contribution of entity attributes in the given asset class towards the importance score. The contributions metrics may be tuned by the user based on the requirements of the user in identifying key entities, and tuned importance scores are calculated.
- 7 Key identity records are identified based on the determined importance scores of the entity records, a higher importance score signifying a higher expertise and influence of the entity.
- 8 In one embodiment, the processing module crawls existing data sources to extract data records from available public or internal resources and uses these data records to obtain the entity records.
- 9 The application has 11 claims, of which claims 1, 6 and 11 are independent claims and relate to a system, a method, and a computer readable medium respectively. They are all equivalent in scope. Claim 1 reads:

1. A system that manages key entity records required by a user, wherein the system includes a computer system, characterized in that the system comprises:

- a database arrangement operable to store a structured database comprising entity records; and
- a processing module communicably coupled to the database arrangement, the processing module operable to:
 - receive the structured database comprising entity records, wherein each of the entity records comprises an entity name and plurality of entity attributes, further wherein the plurality of entity attributes belong to asset classes;
 - determine an importance score for each of the entity records, wherein the importance score for a given entity record is determined based upon the plurality of entity attributes thereof, further wherein each of the asset classes comprising the plurality of entity attributes of the given entity record has a corresponding predefined contribution metric towards the importance score of the given entity record;
 - identify key entity records based on the determined importance scores of the entity records;

- receive a tuning-input from the user, wherein the tuning-input is operable to adjust at least one of the contribution metrics corresponding to the asset classes;
- calculate a tuned importance score for each of the entity records based on the tuning-input from the user; and
- identify the key entity records required by the user based on the tuned importance scores of the entity records.

10 Claims 2-5 are dependent on claim 1 and read:

2. A system of claim 1, characterized in that the processing module is operable to receive a field-input from the user, wherein the entity records are filtered based on the field-input prior to determining the importance scores of the entity records.

3. A system of claim 2, characterized in that the processing module is further operable to develop the structured database by:

- crawling existing data sources to extract data-records;
- structuring the extracted data-records to obtain entity records, wherein each of the entity records comprises an entity name and plurality of entity attributes;
- tagging each of the plurality of entity attributes with one of the asset classes; and
- identifying a field of each of the entity records based on at least one of the plurality of entity attributes of the entity record.

4. A system of any one of the preceding claims, characterized in that the plurality of entity attributes of each of the entity records are timestamped.

5. A system of claim 4, characterized in that the processing module is further operable to receive a time-range-input from the user, wherein the importance score of a given entity record is based on the entity attributes with time-stamps in the time-range.

The law

11 Section 1(2) of the Act declares that certain things are not inventions for the purposes of the Act (emphasis mine):

s.1(2) It is hereby declared that the following (amongst other things) are not inventions for the purpose of the 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 provisions shall prevent anything from being treated as an invention for the purposes of the Act only to the extent that a patent or application for a patent relates to that thing as such.

- 12 The provisions of section 1(2) were considered by the Court of Appeal in *Aerotel*¹ where the following four-step approach was laid down to decide whether a claimed invention is excluded from patentability:
- i) Properly construe the claim;*
 - ii) identify the actual contribution;*
 - iii) ask whether it falls solely within the excluded subject matter;*
 - iv) check whether the actual or alleged contribution is actually technical in nature.*
- 13 The Court of Appeal in *Symbian*² ruled that the question of whether the invention makes a technical contribution has to be addressed when considering the computer program exclusion, although it isn't critical whether that takes place at step 3 or 4.
- 14 In *AT&T/CVON*³ Lewison J (as he then was) set out five signposts that he considered to be helpful when considering whether a computer program makes a relevant technical contribution. In *HTC v Apple*⁴ Lewison LJ reconsidered the signposts in the 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*

Assessment

Step (1): Properly construe the claim

- 15 Claim 1 does not pose any particular construction issues. The term "entity" is defined in the description to refer to one or more persons, organizations, objects, domains and so forth. It therefore has a broad construction.

Step (2): identify the actual contribution

- 16 In the present case the application has not been searched so I will identify the alleged contribution. In *Aerotel* the Court of Appeal provided useful guidance in

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

² *Symbian Ltd v Comptroller-General of Patents* [2009] RPC 1

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

⁴ *HTC Europe Co Ltd V Apple Inc* [2013] EWCA Civ 451

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

relation to determining the contribution. In paragraph 43 of this judgment Jacob LJ said:

“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.”

- 17 In their letter of 24 September 2020 the applicant submit that the contribution is the following:

“A method that includes identifying records that have associated attributes, with the attributes belonging to different classification, and then assigning each record a value based on a sum of weighted values, with the weighting factor determined based on the classification and a user input.”

- 18 This, they argue is what has been added to human knowledge. The examiner modified this contribution slightly to indicate the context of the invention more clearly by adding that the contribution is “a method of managing a database” which includes the features specified in the applicant’s contribution.

- 19 The claims themselves are directed towards managing key entity records required by a user and so I would take the contribution to be:

“Managing key entity records required by a user in a manner which includes identifying records that have associated attributes, with the attributes belonging to different classification, and then assigning each record a value based on a sum of weighted values, with the weighting factor determined based on the classification and a user input.”

- 20 In their submissions made in relation to step (3) the applicant refers to reducing a burden on the user by eliminating the need to manually update the database. This advantage does not directly arise out of the contribution made by the invention claimed in claim 1. Rather it arises from claim 3 which relates to crawling existing data sources to extract data-records which are then structured to obtain the entity records. Claim 3 is also dependent on claim 2 which relates to filtering the entity records based on a field-input from the user. In addition to the above, I would therefore characterise the contribution of claim 3 including:

“Filtering the entity records based on a field-input from the user and crawling existing data sources to extract data-records, these extracted records being structured to obtain the entity records.”

Steps (3) and (4): Ask whether the contribution falls solely within the excluded subject matter; check whether the actual or alleged contribution is actually technical in nature.

- 21 I will consider steps (3) and (4) together. The applicant has structured their argument around the AT&T/Cvon signposts, and I will do the same.

Signpost (i)

- 22 In their letter of 24 September 2020 the applicant submitted that reducing a burden on the user by eliminating the need to manually update the database or sift through the database themselves to obtain relevant information, reducing any chance of biased or manipulated results, increasing efficiency by time-efficient managing of key entity records required by the user, and obtaining key entity records are considered technical effects and that the process to which they relate is carried on outside the computer.
- 23 I am not convinced that this is the case. The process relates to searching information in a database containing the identity records and identifying the information of most importance to the user carrying out the search, namely the key identity records. The steps of this process involve identifying attributes for each record, the attributes being tagged with a classification (asset class), and then assigning each record a value based on a sum of weighted values (contribution metrics), the weights being assigned to each classification, at least one weight being tuned by the user.
- 24 These are all steps which take place within the computer itself and relate entirely to the field of administering a database. Even if the handling of the data is improved, the storage and manipulation of data is part of what computers do, as Floyd J (as he then was) said in *Kapur*⁶. There is no technical effect on a process outside of the computer. Even if I consider the intended use of the invention to identify influential leaders, companies, or the like, this is not a technical effect on a process outside of the computer but an administrative or organisational effect. In any case the claims are not restricted to this use. I therefore conclude that there is no technical effect on a process outside of the computer.

Signposts (ii)-(iv)

- 25 For convenience I will consider signposts (ii), (iii) and (iv) together.
- 26 In their letter of 27 March 2020 the applicant argued that the storage of entity records based on importance scores requires reduced storage space as compared to storage space that would be required for storing the data sources that the data records were retrieved from. Moreover, a reduced amount of processing resources and/or processing time is required for processing the information associated with the entity records, as compared to that required for processing the information all the data records retrieved from the data sources. On this basis the applicant argues that signpost (ii) is met because the information enables a reduction to the required storage space as well as efficient use of storage space, thus enabling a potential reduction in the required storage capacity for the computing hardware. Furthermore, the reduction in the required processing resources and/or processing time enables more efficient operation of the computer hardware and/or reduced power consumption.

⁶ *Kapur v Comptroller General of Patents Designs & Trade Marks* [2008] EWHC 649

- 27 These submissions seem more relevant to signposts (iii) and (iv) than to signpost (ii). I can find no effect in the contribution I have identified which takes place at the architecture level of the computer.
- 28 I do not fully understand how the applicant claims that the invention reduces storage requirements. The full structured database still needs to be stored. It may be that the applicant is arguing that the database takes up less storage space than the data records from which the entity records are derived and, for the purposes of this decision, I will take this as their argument. Similarly I will take the reduction in processing resources required to relate to the processing resources require to use the database arrangement of the present invention as compared to processing the data from the wider data sources from which the structured database is derived.
- 29 I do not agree that the system for managing key entity records as claimed in the present invention results in the computer itself being made to operate in a new way. Rather it is the program which is operating in a new way. It does not change the fundamental operation of the computer, nor does the program make the computer a better computer in the sense of running more efficiently and effectively as a computer. The computer itself is unchanged. Any reduction in processing resources or storage arising out of the present invention relates entirely to the way the program operates when the system for managing key entity records is being put into use. The computer does not operate more efficiently and effectively in any general or technical sense.

Signpost (v)

- 30 The applicant identifies the problem to be solved as being to automatically identify and extract key entity records that match user desired attributes from a structured database of entity records with reduced bias or manipulation in a time-efficient manner. According to the applicant the solution lies in identifying records that have associated attributes, with the attributes belonging to different classifications, and then assigning each record a value based on a sum of weighted values, with the weighting factor determined based on the classification and user input.
- 31 Such a problem is, according to the applicant, technical in nature. There are inherent technical considerations involved in determining how to automate such information extraction and still achieve a time-efficient process. The applicant argues that consideration should be given not just of the field in which the problem is located, i.e., according to the examiner, the management of key entities in a database, but rather the specific technical problem. There are clear technical considerations in the identification and assigning of values, and the applicant considers the solution to overcome the problem and be technical in nature.
- 32 In my view both the problem identified by the applicant and the solution fall squarely in the excluded field of a program for a computer as such. Essentially the problem relates to how to identify certain records in a database. This is not solved in any technical sense, for example in providing the computer with improved architecture or with technical improvements to how the underlying database works, but rather is solved in an administrative manner by the way key entities are identified using attributes associated with the entity records and the weighting of these attributes based on classification, the weights being tuned by the user, that is by the way the

data is organised. This solution is not of a technical nature but is rather an administrative solution.

- 33 Taking a step back and considering the contribution as a whole, the identified contribution lies in the field of database administration and in the organisation of data relating to the entities and their attributes. It manages the entity records and identifies key records using attributes associated with each entity record and using weights associated with the attributes. These are not technical features but rather are features relating to how the data is organised and administered. This lies in the field of a program for a computer as such. The identified contribution does not therefore make a technical contribution.
- 34 The arguments above all apply equally to the contribution made by claim 3. The process of filtering the entity records based on a field-input and crawling existing data sources to extract record does not have a technical effect on a process outside of the computer, does not make the computer a better computer or operate at the architecture level of the computer, and does not provide a technical solution to a technical problem. Similarly, the other dependent claims do not make a technical contribution.

Conclusion

- 35 I therefore conclude that the alleged contribution lies solely in the excluded field of a program for a computer as such and the invention claimed in claims 1-11 is excluded from patentability as a program for a computer as such. I therefore refuse the application.

Appeal

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

Ben Micklewright

Deputy Director, acting for the Comptroller