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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JEFFREY S. BOSTON, TINA GROVES, JENNIFER LAI, JIE LU, SHIMEI PAN, MERCAN TOPKARA, ZHEN WEN, and STEPHEN P. WOOD

Appeal 2017-001319
Application 13/627,562[1]
Technology Center 3600

Before BRADLEY W. BAUMEISTER, JOSEPH P. LENTIVECH, and NABEEL U. KHAN, *Administrative Patent Judges*.

KHAN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Final Rejection of claims 1–3, 6, 8–10, and 13. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

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[1] Appellants identify International Business Machines Corporation as the real party in interest. App. Br. 1.

STATEMENT OF THE CASE

THE INVENTION

According to Appellants, the invention relates to "techniques for estimating the value of digital footprints of business activities." Spec. 1:10–11.

Exemplary independent claim 1 is reproduced below.

> 1. An apparatus for ranking information objects in one or more outcome-based business processes, said apparatus comprising:
>
> a memory; and
>
> at least one hardware device, coupled to the memory, operative to:
>
> record information objects generated during a creation of said outcome-based business processes in a record in the memory, wherein one or more of said business processes comprise an outcome attribute, and wherein said information objects comprise one or more in-process information objects and one or more non-process information objects, wherein each in-process information object comprises an information object that is stored as part of a business process and each non-process information object comprises an information object that is generated during an activity of social network software that is not explicitly associated to the business process;
>
> generate a composite graph of said information objects and business processes that identifies one or more links between the one or more non-process information objects and the one or more in-process information objects, wherein each node in said graph corresponds to one of said information objects or one of said business processes, and wherein said generating the composite graph is carried out by the at least one hardware device communicatively linked to the memory and comprises:

determining a strength value associated with each of the one or more links between the one or more non-process information objects and the one or more in-process information objects via executing a function incorporating a content similarity value and a social network distance value, wherein:

said content similarity value is based on (i) a similarity of content of said information objects and (ii) a similarity of timing of said information objects occurring within one or more activity patterns associated with said business processes, and

said social network distance value comprises a distance between a given user who issues a query and multiple users associated with said information objects, wherein said social network distance value is weighted based on usage patterns of the multiple users in connection with said information objects, and wherein:

said in-process information object node connects to a corresponding business process node, and

two of said business process nodes have a link if they are indicated as related in the business process information system; and

rank said information objects in response to the query *(q)* issued by the given user based on a ranking function, wherein said query comprises one or more keywords, and wherein said ranking function comprises *rank(q,n) = relevance(q,n) + value(n),* wherein *relevance(q,n) = sim(q.keyword, n.info) + Social_Network_Distance(u, n.user),* wherein *n* represents a given one of said business processes, wherein *relevance(q,n)* comprises the relevance of activities the given business process *(n)* to the query *(q),* wherein *value(n)* comprises an outcome value of the given business process *(n)* that represents an amount of risk associated

> with the given business process *(n),* wherein *sim(q.keyword, n.info)* comprises a level of similarity *(sim)* between one or more keywords of the query *(q.keyword)* and information pertaining to the given business process *(n.info),* and wherein *Social_Network_Distance(u, n.user)* comprises a value representing a social network distance between the user *(u)* who issues the query and one or more users involved in the given business process *(n.user),* wherein said ranking is carried out by the at least one hardware device communicatively linked to the memory.

REJECTION

Claims 1–3, 6, 8–10, and 13 stand rejected under 35 U.S.C. § 101 as directed to a non-statutory subject matter. Final Act. 2–5.

DISCUSSION

Under 35 U.S.C. § 101, a patent may be obtained for "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." The Supreme Court has "long held that this provision contains an important implicit exception: Laws of nature, natural phenomena, and abstract ideas are not patentable." *Alice Corp. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2354 (2014) (quoting *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 589 (2013)). The Supreme Court in *Alice* reiterated the two-step framework previously set forth in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66 (2012), "for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts." *Alice*, 134 S. Ct. at 2355.

The first step in that analysis is to "determine whether the claims at issue are directed to one of those patent-ineligible concepts," such as an

abstract idea. The Court acknowledged in *Mayo* that "all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas." *Mayo*, 566 U.S. at 71. We, therefore, look to whether the claims focus on a specific means or method that improves the relevant technology or are instead directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery. *See Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335–36 (Fed. Cir. 2016).

If the claims are not directed to an abstract idea, the inquiry ends. Otherwise, the inquiry proceeds to the second step where the elements of the claims are considered "individually and 'as an ordered combination,' to determine whether the additional elements 'transform the nature of the claim' into a patent-eligible application." *Alice*, 134 S. Ct. at 2355 (quoting *Mayo*, 566 U.S. at 78–79).

STEP ONE OF ALICE/MAYO FRAMEWORK

Under the first step of the *Alice/Mayo* framework, the Examiner finds "the claimed invention to be directed toward recording information generated during a business process, generating a composite graph of the business process, and ranking content based on a query request." Final Act. 3. The Examiner further finds "the Abstract idea that is present in the Claim is business process mapping and modelling by recording actions involved in a business process and generating a composite graph based on the actions. Business process modelling and mapping can be considered a method of organizing human activity." Final Act. 3. The Examiner also finds that the claimed invention includes abstract ideas of "evaluation of information to provide ranked query results" and also "a mathematical relationship that is employed to perform the ranking." Final Act. 3 (citing

Digitech Image Tech. v. Electronics for Imagining, Inc., 758 F.3d 1344, 1351 (Fed. Cir. 2014)).

Appellants argue

> the Examiner's characterization of the independent claims as being directed merely to "recording information generated during a business process, generating a composite graph of the business process, and ranking content based on a query request" is in error, and that the specific limitations of the independent claims affirmatively include "a specific improvement to the way computers operate," and thereby satisfy the first part of the *Alice/Mayo* framework as being directed to patent-eligible subject matter.

App. Br. 8.

Appellants cite to portions of the Specification to support the above contention. App. Br. 8 (citing Spec. 3:26–4:2; 5:4–18). Appellants also point to the "ranking" step of the independent claims as an example of a limitation that is "substantial, specific, and [a] limiting active step[] that appear[s] to be overlooked by the Examiner." Reply Br. 4. Appellants' arguments are unpersuasive.

We turn to the Examiner's determination that the claims are directed to an abstract idea. "The 'abstract idea' step of the *Alice/Mayo* inquiry calls upon us to look at the 'focus of the claimed advance over the prior art' to determine if the claim's 'character as a whole' is directed to excluded subject matter." *Affinity Labs of Texas v. DirectTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016) (quoting *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016)); *see also Enfish*, 822 F.3d at 1335 ("[T]he 'directed to' inquiry applies a stage-one filter to claims, considered in light of the specification, based on whether 'their character as a whole is directed to excluded subject matter.'" (citation omitted)).

Claim 1 recites an apparatus for ranking information objects. The apparatus records information objects of at least two types, in-process and non-process objects, generated during business processes. The apparatus then generates a composite graph of the information objects and business processes and links the nodes in a certain way (*e.g.*, non-process and in-process objects are linked together and in-process nodes and business processes are linked together) and determines a strength value of the links based on content similarity and social network distance. Finally, the apparatus ranks the objects in response to a query based on a mathematical formula.

It is evident the claims are directed to ranking information objects generated during business processes by use of a graph. As such, we agree with the Examiner's finding that the claims are directed to "recording information generated during a business process, generating a composite graph of the business process, and ranking content based on a query request." Final Act. 3. We therefore agree that the claims are directed to an abstract idea.

We disagree with Appellants that the claimed invention includes "a specific improvement to the way computers operate" (App. Br. 8). We do not find any limitations in claim 1 that specifically improve the operation of a computer. Rather, the computer, or hardware device and its associated memory, is used in its well-understood and routine ways (recording information, creating graphs, and performing calculations) to accomplish the goal of recording and ranking information objects.

Regardless of whether the ranking step is a substantial or limiting active step, we disagree that this step necessarily means the claims are not

directed to an abstract idea. The ranking step is a mathematical calculation performed on the objects by use of the graph ("*rank(q,n) = relevance(q,n) + value(n),* wherein *relevance(q,n) = sim(q.keyword, n.info) + Social_Network_Distance(u, n.user).*" Mathematical calculations are themselves abstract and do not transform a claim otherwise directed at an abstract idea to something non-abstract. "Adding one abstract idea (math) to another abstract idea (encoding and decoding) does not render the claim non-abstract." *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017).

STEP TWO OF ALICE/MAYO FRAMEWORK

Under step two of the *Alice/Mayo* framework, the Examiner finds, "[t]he elements of the instant process, when taken in combination, together do not offer substantially more than the sum of the functions of the elements when each is taken alone." Final Act. 3. The Examiner adds that "[t]he elements together execute in routinely and conventionally accepted coordinated manners and interact with their partner elements to achieve an overall outcome which, similarly, is merely the combined and coordinated execution of generic computer functionalities which are well-understood, routine and conventional activities previously known to the industry." Final Act. 3–4. The Examiner notes that the Specification states "that the invention may be implemented on a general purpose computer." Final Act. 4. As for the dependent claims, the Examiner finds claims 2, 3, and 6 "introduce elements that further limit the Abstract idea. However, the claims fail to remedy the deficiencies of the parent claim as they do not impose any limitations that amount to significantly more than the abstract idea itself." Final Act. 4.

Appellants argue the Examiner has not analyzed the actual specific limitations of the claims under the second step of the *Alice/Mayo* test. App., Br. 10–11. Appellants further assert that

> if a set of "specific limitations" has been deemed not anticipated, taught, or even suggested by a field of available art, (as is the case with the instant claims, as acknowledged by the Examiner in the Office Action dated June 23, 2015) then the same set of "specific limitations" cannot plausibly be simultaneously argued as "well-understood, routine and conventional in the field."

App. Br. 12; *see also* Reply Br. 7.

We disagree. "[P]atent-eligibility does not turn on ease of execution or obviousness of application. Those are questions that are examined under separate provisions of the Patent Act." *Rapid Litig. Mgmt. Ltd. v. CellzDirect, Inc.*, 827 F.3d 1042, 1052 (Fed. Cir. 2016) (citing *Mayo*, 566 U.S. at 90–91). Thus, merely because the Examiner has not presented a rejection under 35 U.S.C. §§ 102 and 103, or has withdrawn such rejections, does not overcome a 35 U.S.C. § 101 rejection. Although the second step in the *Alice/Mayo* framework is termed a search for an "inventive concept," the analysis is not an evaluation of novelty or non-obviousness, but rather a search for "an element or combination of elements that is 'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.'" *Alice*, 134 S. Ct. at 2355 (alteration in original) (quoting *Mayo*, 566 U.S. at 72–73). A novel and nonobvious claim directed to a purely abstract idea is, nonetheless, patent-ineligible. *See Mayo*, 566 U.S. at 90–91.

CONCLUSION

Accordingly, we sustain the Examiner's rejection of the claims under 35 U.S.C. § 101 as directed to non-statutory subject matter.

DECISION

The Examiner's rejection of claims 1–3, 6, 8–10, and 13 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 41.50(f).

AFFIRMED