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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte CHRISTOPHER PELTZ, DAVID TRASTOUR, and
CLAUDIO BARTOLINI

Appeal 2017-003659¹
Application 12/251,259
Technology Center 3600

Before MURRIEL E. CRAWFORD, ANTON W. FETTING, and
MICHAEL W. KIM, *Administrative Patent Judges*.

KIM, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

This is an appeal from the final rejection of claims 1–20. We have jurisdiction to review the case under 35 U.S.C. §§ 134 and 6.

The invention relates generally to prioritizing problems in information technology services. Spec. ¶ 8.

¹ The Appellants identify the Hewlett-Packard Development Company, LP as the real party in interest. Br. 1.

Claim 1 is illustrative:

1. A method comprising:
 - determining a plurality of N problems in Information Technology (IT) services;
 - determining an incident cost I_n for each of the N problems;
 - determining a workaround cost W_n for each of the N problems;
 - assigning expected resolution times to a plurality of priorities wherein each priority p of the plurality of priorities is assigned a different expected resolution time d_p for resolving a problem;
 - determining a number $V_{n,p}$ of occurrences of each of the N problems for each priority p ;
 - determining an expected resolution cost, $C_{n,p}$ for fixing each of the N problems for each priority p ;
 - based at least in part on the determined incident costs I_n , the determined workaround costs W_n , the determined numbers $V_{n,p}$ of occurrences, and the determined expected resolution costs, $C_{n,p}$, assigning, by a processor-based machine including a processor, a priority p from the plurality of priorities to each of the N problems such that a cost for fixing all N problems is lower than any other assignment of priorities from the plurality of priorities to each of the N problems; and
 - performing, by an IT support organization, resolution of the N problems according to a schedule based on at least the assigned priority p .

The Examiner rejected claims 1–20 under 35 U.S.C. § 101 as directed to abstract ideas.

We AFFIRM.

ANALYSIS

Principles of Law

An invention is patent-eligible if it claims a “new and useful process, machine, manufacture, or composition of matter.” 35 U.S.C. § 101. The

Supreme Court, however, has long interpreted § 101 to include implicit exceptions: “[l]aws of nature, natural phenomena, and abstract ideas” are not patentable. *See, e.g., Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014).

In determining whether a claim falls within the excluded category of abstract ideas, we are guided in our analysis by the Supreme Court’s two-step framework, described in *Mayo* and *Alice*. *Id.* at 2355 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 75–78 (2012)). In accordance with that framework, we first determine whether the claim is “directed to” a patent-ineligible abstract idea. *See id.* at 2356 (“On their face, the claims before us are drawn to the concept of intermediated settlement, *i.e.*, the use of a third party to mitigate settlement risk.”); *Bilski v. Kappos*, 561 U.S. 593, 611 (2010) (“Claims 1 and 4 in petitioners’ application explain the basic concept of hedging, or protecting against risk.”); *Diamond v. Diehr*, 450 U.S. 175, 184 (1981) (“Analyzing respondents’ claims according to the above statements from our cases, we think that a physical and chemical process for molding precision synthetic rubber products falls within the § 101 categories of possibly patentable subject matter.”); *Parker v. Flook*, 437 U.S. 584, 594–95 (1978) (“Respondent’s application simply provides a new and presumably better method for calculating alarm limit values.”); *Gottschalk v. Benson*, 409 U.S. 63, 64 (1972) (“They claimed a method for converting binary-coded decimal (BCD) numerals into pure binary numerals.”).

The following method is then used to determine whether what the claim is “directed to” is an abstract idea:

[T]he decisional mechanism courts now apply is to examine earlier cases in which a similar or parallel descriptive nature can be seen—what prior cases were about, and which way they were decided. *See, e.g., Elec. Power Grp.*, 830 F.3d at 1353–54.[] That is the classic common law methodology for creating law when a single governing definitional context is not available. *See generally* Karl N. Llewellyn, *The Common Law Tradition: Deciding Appeals* (1960). This more flexible approach is also the approach employed by the Supreme Court. *See Alice*, 134 S. Ct. at 2355–57. We shall follow that approach here.

Amdocs (Israel) Limited v. Openet Telecom, Inc., 841 F.3d 1288, 1294 (Fed. Cir. 2016).

The patent-ineligible end of the spectrum includes fundamental economic practices (*Alice*, 134 S. Ct. at 2357; *Bilski*, 561 U.S. at 611); mathematical formulas (*Flook*, 437 U.S. at 594–95); and basic tools of scientific and technological work (*Benson*, 409 U.S. at 69). On the patent-eligible side of the spectrum are physical and chemical processes, such as curing rubber (*Diamond*, 450 U.S. at 184 n.7), “tanning, dyeing, making waterproof cloth, vulcanizing India rubber, smelting ores,” and a process for manufacturing flour (*Gottschalk*, 409 U.S. at 69).

If the claim is “directed to” a patent-ineligible abstract idea, we then consider the elements of the claim—both individually and as an ordered combination—to assess whether the additional elements transform the nature of the claim into a patent-eligible application of the abstract idea. *Alice*, 134 S. Ct. at 2355. This is a search for an “inventive concept”—an element or combination of elements sufficient to ensure that the claim amounts to “significantly more” than the abstract idea itself. *Id.*

Claims 1–15

Independent method claim 1 is directed to gathering data on reported problems, data on costs to solve the problems, and data on costs incurred by not solving the problems, assigning priorities to fixing the problems so as to minimize the total cost related to the problems, and resolving the problems according to the assigned priorities.

There are five recited determination steps. As to “determining a plurality of N problems,” the Specification describes that, typically, “a service disruption is usually reported to an IT help desk that will raise an incident ticket,” and that the incident is logged for further investigation. Spec. ¶ 1. In addition, “[p]roblems may be documented in a problem data base.” *Id.* ¶ 12. Therefore, we construe that the determining of problems is merely a data gathering step. *See In re Bilski*, 545 F.3d 943, 963 (Fed. Cir. 2008) (*en banc*), *aff’d sub nom Bilski v. Kappos*, 561 U.S. 593 (2010) (characterizing data gathering steps as insignificant extra-solution activity).

The nature of the problems is not limited except, broadly, to “Information Technology (IT) services” by the claim language. The Specification describes that “IT (Information Technology) services are provided by a collection of hardware components, software components and people. When one of these components experience a problem (e.g. hardware fault, configuration error, software conflict etc.), one or several IT services may be affected.” Spec. ¶ 1. Based on that, the problems are broadly construed to encompass problems centered on people, which may involve only mental thought to address.

In one embodiment, “incident cost may correspond to the penalties defined” in a service level agreement. *Id.* ¶ 14. Under the broadest

reasonable construction, the claimed “determining” of incident cost, thus, is merely a data gathering step.

In one embodiment, workaround cost “is calculated using the average cost of a workaround.” *Id.* ¶ 15. Under the broadest reasonable construction, the claimed “determining” of workaround cost, thus, may be a data lookup step, which is a data gathering step.

In one embodiment, the claimed “assigning expected resolution times” is described as referring to a table of resolution times expected for each priority level selected. *Id.* ¶ 10, e.g., Table 1. Under the broadest reasonable construction, the assignment of expected resolution times may be a data lookup step, which is a data gathering step.

The claimed “determining a number $V_{n,p}$ of occurrences” a problem is expected to happen varies based on the time to resolve a problem, which in turn depends upon the priority chosen for resolving the problem, which may “be determined from historical data for the incident or based on knowledge from a support staff.” *Id.* ¶ 13. This step may, thus, be a data gathering step based on looking up stored data, or a mental thought step utilizing the personal knowledge of a staff member.

The Specification describes that the “expected resolution cost $C_{n,p}$ is an estimated cost of fixing a problem n within an expected resolution time d_p .” *Id.* ¶ 17. The determination of an expected resolution cost, thus, may be performed by mental thought.

The claimed “assigning” of priorities based on the data inputs is part of an optimization step to minimize total cost using the cost, incidence, and time values “determined” in the first six limitations. *Id.* ¶ 31 (“A minimum total cost C_t may be obtained by assigning different combinations of priorities

to each of the six problems until a minimum cost C_t is obtained.”) The process of optimizing for minimum total cost based on data inputs can be performed mentally.

The final step, performing resolution of the problems, is indicated by the Appellants as being described in the Specification at “p. 4, ln. 15 - p. 5, ln. 2; p. 5, ln. 19 - p. 6, ln. 12; p. 9, ln. 24 -p. 11, ln. 15.” Br. 3. The citation at pages 4 to 5 essentially describes that problems may be documented. Spec. ¶ 12. The citation at pages 5 to 6 essentially describes how the cost of implementing a workaround may be determined. *Id.* ¶ 15. The citation at pages 9 to 11 essentially describes optimizing for lowest cost and that additional constraints may need to be considered, and provides variations on how the resolution of problems may be scheduled, such as using priority alone, or priority along with cost within each priority. *Id.* ¶¶ 31–36.

In these cited paragraphs, though, there is no description of the method for resolving problems. However, the Specification describes that:

Correcting the underlying problem typically requires human and technical resources. For example, an estimated expected resolution cost $C_{n,p}$ may include the cost of 2 days of work from a software engineer to write software changes, the cost of 2 days of work from a test engineer for quality assurance, and the cost of one day of work from a support engineer to release the change into production.

Id. ¶ 16. We, thus, construe the resolution of problems to essentially be a human task, which under the broadest reasonable construction may involve only mental thought with pen and paper.

The method, thus, involves only data gathering steps, which are insignificant extra-solution activities, and steps that under the broadest reasonable construction can be performed entirely by a human using mental

thought. The Federal Circuit has held that if a method can be performed by human thought alone, or by a human using pen and paper, it is merely an abstract idea and is not patent-eligible under § 101. *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1373 (Fed. Cir. 2011) (“[A] method that can be performed by human thought alone is merely an abstract idea and is not patent-eligible under § 101.”). Additionally, mental processes, e.g., assigning priorities based on a minimum cost optimization, as recited in claim 1, remain unpatentable even when automated to reduce the burden on the user of what once could have been done with pen and paper. *Id.* at 1375 (“That purely mental processes can be unpatentable, even when performed by a computer, was precisely the holding of the Supreme Court in *Gottschalk v. Benson*, [409 U.S. 63 (1972)].”).

For this reason, the method of claim 1 is directed to an abstract idea. Nothing in the claim falls outside the scope of *gathering data on reported problems, data on costs to solve the problems, and data on costs incurred by not solving the problems, assigning priorities to fixing the problems so as to minimize the total cost related to the problems, and resolving the problems according to the assigned priorities.*

Turning to the second step of the *Alice/Mayo* analysis, we look for an inventive concept or “something more.” Determining problems, costs, times, and number of incidents to expect are simply data gathering and mental steps, as is the optimization to assign priorities. Therefore, we find nothing in the claim steps, or in the claim as a whole, that represents an “inventive concept” or adds “something more” to transform the abstract ideas to which the claim is directed into eligible subject matter.

We find no meaningful distinction between independent method claim 1 and independent apparatus claim 8, because the claims both are directed to the same underlying invention. As the Federal Circuit has made clear “the basic character of a process claim drawn to an abstract idea is not changed by claiming only its performance by computers, or by claiming the process embodied in program instructions on a computer readable medium.” *See CyberSource*, 654 F.3d at 1375–76 (citing *In re Abele*, 684 F.2d 902 (CCPA 1982)).

Independent method claim 10 differs from claim 1, primarily by not reciting a requirement to achieve a lowest cost, but, instead, reciting that scheduling, broadly based on the same inputs as claim 1, is performed. Scheduling is a task capable of being performed mentally by a human using pen and paper. Claim 10, therefore, is also directed to a similar, though broader, abstract idea. Similar to claim 1, we discern nothing in claim 10 that represents an inventive concept or “something more” to transform the abstract idea into eligible subject matter, because the scheduling, like the other steps in the method, can be performed entirely through mental thought.

We are not persuaded by the Appellants’ arguments that claim 1 is not either a fundamental economic activity, or a method of organizing human activity, because claim 1 is directed to an abstract idea in that it can be performed mentally by a human. *See* Br. 6–10.

We are not persuaded that the claim is not abstract on the basis of being “inventive,” an argument that the Appellants base on the fact that the Board determined the prior art of record did not render the claim obvious. Br. 10–11.

A finding of novelty or non-obviousness does not automatically lead to the conclusion that the claimed subject matter is patent-eligible. Although the second step in the *Mayo/Alice* 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 Corp.*, 134 S. Ct. at 2355. “Groundbreaking, innovative, or even brilliant discovery does not by itself satisfy the § 101 inquiry.” *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 591 (2013). A novel and non-obvious claim directed to a purely abstract idea is, nonetheless, patent-ineligible. *See Mayo*, 566 U.S. at 90; *see also Diamond*, 450 U.S. at 188–89 (“The ‘novelty’ of any element or steps in a process, or even of the process itself, is of no relevance in determining whether the subject matter of a claim falls within the § 101 categories of possibly patentable subject matter.”).

Therefore, we sustain the Examiner’s rejection of claim 1 as directed to an abstract idea. We also sustain the rejection of independent claims 8 and 10, which are argued only by reference to claim 1, as well as dependent claims 2–7, 9, and 11–15. *See Br. 12*. However, because our rationale differs from that of the Examiner, we denominate our affirmance as a new ground of rejection.

Claims 16, 19, and 20

Each of dependent claims 16, 19, and 20 recite “an IT service that includes a hardware component.”

The Appellants argue this language provides “an inventive concept ‘in the physical realm of things’ that provides a ‘new and useful application’ of

the claimed subject matter to the physical realm, namely resolution of a problem in an IT service that includes a hardware component.” Br. 13 (citing *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1353 (Fed. Cir. 2014)).

We are not persuaded by the Appellants’ argument, because the claimed methods and apparatus broadly encompass resolving problems using only mental steps, even if the overall service includes a hardware component. In addition, even if the action were performed on a computer itself, the claims are broad enough to encompass well-understood, routine, and conventional activities, such as restarting a computer. *See, e.g.*, ENCYCLOPAEDIA BRITANNICA, *Modern types of operating systems*, <https://www.britannica.com/technology/computer> (last visited June 29, 2018) (“PC users seem to have become quite tolerant of frequent operating system failures that require restarts.”).

Therefore, we sustain the rejection of claims 16, 19, and 20 as directed to abstract ideas.

Claims 17 and 18

Each of dependent claims 17 and 18 recite language substantially equivalent to “restarting of the code on the computer.” Claim 18 depends from claim 17.

The Appellants argue that, by the restarting of computer code, “it is clear that claim 17 relates to improving the function of a computer. As stated by *Alice*, a method claim that improves the functioning of a computer is considered to transform the claim process into a patent-eligible application. *Alice*, [134 S. Ct. 2355].” Br. 13.

We are unpersuaded by the argument, because simply restarting code that is operating on a computer does not alter the computer, in that the same computer and code are present after rebooting as before. In addition, the ordinary artisan would have recognized that the restarting of code on a computer as a well-understood, routine, and conventional activity in the realm of computer operations, and, thus, does not transform the abstract idea into eligible subject matter. *See, e.g.*, PC MAGAZINE COMPUTER ENCYCLOPEDIA, <https://www.pcmag.com/encyclopedia/term/50288/reboot> (last visited June 29, 2018) (“reboot - To reload the operating system and start over. A reboot often solves many software problems in computers, smartphones, tablets, cable boxes and other electronics devices, because it resets the system”); *see also* B. Joshi, D. Pradhan, and J. Stiffler, *Fault-Tolerant Computing*, WILEY ENCYCLOPEDIA OF COMPUTER SCIENCE AND ENGINEERING (B. W. Wah ed., 2009) (“The straightforward recovery strategy is to terminate execution of the program and to re-execute the complete program from the beginning on all the processors, which is known as the global restart.”); M. Schulz, *Checkpointing*, ENCYCLOPEDIA OF PARALLEL COMPUTING (Padua D. ed., 2011):

Checkpointing is most typically used to provide fault tolerance to applications. In this case, the state of the entire application is periodically saved to some kind of stable storage, e.g., disk, and can be retrieved in case the original application crashes due to a failure in the underlying system. The application is then restarted (or recovered) from the checkpoint that was created last and continued from that point on, thereby minimizing the time lost due to the failure.

Therefore, we sustain the rejection of claims 17 and 18 as directed to abstract ideas.

DECISION

We AFFIRM the rejection under 35 U.S.C. § 101 of claims 1–20.

This decision contains new grounds of rejection pursuant to 37 C.F.R. § 41.50(b) (2008). 37 C.F.R. § 41.50(b) provides “[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review.”

37 C.F.R. § 41.50(b) also provides that the Appellants, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

(1) *Reopen prosecution.* Submit an appropriate amendment of the claims so rejected or new Evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the prosecution will be remanded to the examiner. . . .

(2) *Request rehearing.* Request that the proceeding be reheard under § 41.52 by the Board upon the same Record. . . .

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. § 1.136(a)(1)(iv).

AFFIRMED
37 C.F.R. § 41.50(b)