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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MICHAEL M. BEHRENDT, JOCHEN BREH, GERD BREITER, GEORG OCHS, and ANDREA SCHMIDT

Appeal 2016-005812
Application 11/421,804
Technology Center 3600

Before MURRIEL E. CRAWFORD, HUBERT C. LORIN, and BIBHU R. MOHANTY, *Administrative Patent Judges*.

CRAWFORD, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants seek our review under 35 U.S.C. § 134(a) of the Examiner's final decision rejecting claims 1–4 and 6–9. We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

BACKGROUND

Appellants' invention is directed to a method of dynamically modeling workflows for interacting stateful resources. Spec. 1

Claim 1 is illustrative:

1. A method for dynamically modeling a workflow for interacting stateful resources in a model-based software development process, wherein

said workflow is described by an activity sequence description (ASD), wherein said activity sequence description consists of a sequence of activities, wherein each activity describes an interaction with at least one stateful resource, comprising the step of:

modeling an activity as a plurality of in-memory models by using a keyword identifying a type of interaction with at least one stateful resource, its parameters, and its semantics, wherein each described activity is concurrently provided during its modeling as input to an activity sequence description processor which performs the following steps:

identifying said keyword of said described activity;

updating a current resource type model and a current resource instance model based on the semantics of the currently processed keyword and the semantics of a relationship stereotype definition;

wherein said current resource type model and said current resource instance model are the in-memory models comprising predefined models provided by a user or resulting from the current ASD modeling process;

wherein a successful updating of said current resource type model and said current resource instance model automatically indicates consistency of said described activity with a preceding modeled sequence of activities of an ASD, wherein said current resource type model is used for generating resource type implementation code in the model-based software development process; and

in the case of inconsistency, automatically providing support to the user for resolving said inconsistency.

Appellants appeal the following rejection:

Claims 1–4 and 6–9 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter.

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. *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.*, 132 S. Ct. 1289, 1296–97 (2012)). In accordance with that framework, we first determine whether the claim is "directed to" a patent-ineligible abstract idea. *See Alice*, 134 S. Ct. 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, 594–595 (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 patent-ineligible end of the spectrum includes fundamental economic practices, *Alice*, 134 S. Ct. at 2357; *Bilski*, 561 U.S. at 611; mathematical formulas, *Parker*, 437 U.S. at 594–95; and basic tools of scientific and technological work, *Gottschalk*, 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 water-proof 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.*

In addition, 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."). Accordingly, the mental processes recited in independent claim 1, e.g., assimilating information, creating a hypothetical resource, mapping hypothetical and actual resources, determining a minimum parameter increase and reconciling a parameter increase with a scheduling policy, 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)].").

Further, claims involving data collection, analysis, and display are directed to an abstract idea. *Elec. Power Grp. v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016) (holding that "collecting information, analyzing it, and displaying certain results of the collection and analysis" are "a familiar class of claims 'directed to' a patent ineligible concept"); *see also In re TLI Commc'ns LLC Patent Litig.*, 823 F.3d 607, 611 (Fed. Cir. 2016); *FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1093-94 (Fed. Cir. 2016).

ANALYSIS

The Examiner holds that the claims were directed to the abstract idea of modeling a workflow. Final Act. 2–3. This abstract idea includes the steps of modeling, identifying and updating which are similar to steps involving comparing new and stored information using rules to identify options, organizing information and concepts describing mathematical relationships and algorithms. Ans. 7.

We agree with the Examiner that the claims are directed to modeling workflow and more specifically dynamically modeling workflow. In addition, the claims recite providing data (regarding each described activity) concurrently during modeling, analyzing the data (modeling the activity by identifying keywords, updating current resource type model which includes indicating consistencies and current resource instance model) and

transmitting data in the form of providing support to the user for resolving any inconsistencies. As such, the claims are directed to the collection and analysis of data as in *Elec. Power*. Therefore, we agree with the Examiner that the claims are directed to an abstract idea.

We are not persuaded of error on the part of the Examiner by Appellants' argument that the claims are not directed to a fundamental economic practice, steps of organizing human activities, an idea itself or a mathematical formula. We agree with the Examiner's response to this argument found on pages 5-6 of the Answer. In addition, as held above, the claims are clearly directed to the collection and analysis of data which is an abstract idea.

In regard to the second step of the *Alice* analysis, the Examiner found that the additional elements do not amount to significantly more than the judicial exception because the combination of elements amount to mere instructions to implement the idea on a computer and/or recitation of generic computer structure that serves to perform generic computer functions that are well understood, routine, and conventional activities previously known to the pertinent industry. Final Act. 3.

Appellants argue that the claims include a number of meaningful limitations beyond generally linking the use of the abstract idea to a particular technological environment and transforms a particular article or thing. This argument is not persuasive because the Appellants do not explain how the claims include meaningful limitations beyond generally the use to the abstract idea or how the claims recite a transformation of an article of thing to a different state or thing. In this regard, Appellants merely state what the claims recite without explaining how the recitations provide

meaningful limitations or how the recitations relate to the transformation of an article.

We are also not persuaded of error on the part of the Examiner by Appellants' argument that the claims improve the technical field of software development by *dynamically* modeling the workflow because the dynamic modeling of the workflow is part of the abstract idea itself.

Appellants also argue that the claims are rooted in computer technology and are similar to the claims in *DDR Holdings, LLC v. Hotels.com, L.P.,* 773 F.3d 1245 (Fed. Cir. 2014) because claim 1 does something to models through updates, consistency checks, and providing support to the user for resolving inconsistency.

We are not persuaded by Appellants' argument that the claim is analogous to that in *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d at 1257, where the Court noted that a claim may amount to more than any abstract idea recited in the claims when it addresses a business challenge, such as "retaining website visitors," where that challenge is particular to a specific technological environment, such as the Internet. In *DDR*, the court stated that "the [] patent's claims address the problem of retaining website visitors that, if adhering to the routine, conventional functioning of Internet hyperlink protocol, would be instantly transported away from a host's website after 'clicking' on an advertisement and activating a hyperlink." *DDR Holdings*, 773 F.3d at 1257. This was done in the claim by serving a composite page with content based on the link that was activated to serve the page.

Appellants disclose that the problem addressed by the invention is that static modeling is very rigid and cumbersome. Spec. 4. The way of

modeling recited in claim 1 allows modeling of the workflow with the underlying resources at the same time (dynamically) and ensures consistency between the workflows and the underlying resource model already during the modeling process. Spec. 5.

Appellants do not explain how the features of claim 1, which relate to workflow modeling is rooted in computer technology. The fact that the problem is solved by the use of a computer does not mean that the claim is rooted in computer technology or overcomes a problem specifically arising in the realm of computer networks. In this regard, the problems associated with static modeling exist whether a computer is used to do the modeling or if it is done using pen and paper. Appellants' modeling method allows for dynamic modeling using computer processing and memory in a conventional manner and, thus, is not rooted in computer technology. *See Parker v. Flook*, 437 U.S. at 595 ("If a claim is directed essentially to a method of calculating, using a mathematical formula, even if the solution is for a specific purpose, the claimed method is nonstatutory.") (internal quotations omitted); *see also Digitech Image Tech. LLC v. Electronics for Imaging, Inc.*, 758 F.3d 1344, 1350 (Fed. Cir. 2014) (finding "a process of organizing information through mathematical correlations and is not tied to a specific structure or machine" to be an abstract idea.

We are not persuaded of error on the part of the Examiner by Appellants' argument that the present invention provides a new way of modeling workflows for interacting stateful resources. To the extent, Appellants maintain that the limitations of claim 1 necessarily amount to "significantly more" than an abstract idea because the claimed apparatus is allegedly patentable over the prior art, Appellants misapprehend the

controlling precedent. 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. A novel and nonobvious claim directed to a purely abstract idea is, nonetheless, patent-ineligible. *See Mayo*, 132 S. Ct. at 1304.

We are lastly not persuaded of error on the part of the Examiner by Appellants' argument that the claims are sufficiently narrow and do not risk monopolization of the basic tools of scientific and technological work that might impeded innovation. "While preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility." *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015); *see also OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1362-63 (Fed. Cir. 2015), *cert, denied*, 136 S. Ct. 701, 193 (2015) ("[T]hat the claims do not preempt all price optimization or may be limited to price optimization in the e-commerce setting do not make them any less abstract."). And, "[w]here a patent's claims are deemed only to disclose patent ineligible subject matter under the *Mayo* framework, as they are in this case, preemption concerns are fully addressed and made moot." *Ariosa*, 788 F.3d at 1379.

In view of the foregoing, we will sustain the Examiner's rejection of claim 1. We will also sustain the rejection as it is directed to the remaining claims because the Appellants have not argued the separate patentability of these claims.

DECISION

We affirm the Examiner's § 101 rejection.

TIME PERIOD

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) (2009).

ORDER

AFFIRMED