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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/425,850	06/22/2006	MICHAEL R. HALEY	BOC920060032US1 (END008)	9909

73479 7590 11/25/2019

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ART UNIT	PAPER NUMBER
3623	

NOTIFICATION DATE	DELIVERY MODE
11/25/2019	ELECTRONIC

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MICHAEL R. HALEY and DINESH C. VERMA

Appeal 2018-006762
Application 11/425,850
Technology Center 3600

Before BIBHU R. MOHANTY, PHILIP J. HOFFMANN, and BRADLEY B. BAYAT, *Administrative Patent Judges*.

MOHANTY, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant[1] appeals from the Examiner's decision to reject claims 1–12 and 21–28. We have jurisdiction under 35 U.S.C. § 6(b).

SUMMARY OF THE DECISION

We AFFIRM.

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[1] We use the word Appellant to refer to "applicant" as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as International Business Machines Corporation. Appeal Br. 2.

THE INVENTION

The Appellant's claimed invention is related to a converged tool for information technology (IT) that models infrastructure performance, quality of experience (QOE), and financial metrics in an interdependent fashion (Spec., para 8, lines 1–3). Claim 1, reproduced below, is representative of the subject matter on appeal.

> 1. A method for analyzing an information technology architecture comprising:
>
> instantiating an information technology infrastructure simulation tool in memory of a computing device;
>
> rendering a user interface for the information technology infrastructure simulation tool in a display of the computing device;
>
> *identifying a configuration in the user interface for an information technology infrastructure*;
>
> *specifying in the user interface at least one service provided to a population of subscribers* through the information technology infrastructure;
>
> *setting through the user interface values for each of a performance model, a quality of experience (QoE) model and a finance model based upon the information technology infrastructure*;
>
> *setting through the user interface an initial workload so that an overloaded state of more than one hundred percent utilization is experienced by at least one of the subscribers;*
>
> *simulating the configuration and in response to the simulation, computing by the computing device performance metrics for the infrastructure* based upon the performance model, the initial workload and the overloaded state, determining by the computing device QoE metrics for subscribers receiving the at least one service via the infrastructure based in part upon the QoE model and the computed performance metrics, *calculating by the computing device a return on investment (ROI) value for based upon the finance model for the overloaded state and determining a blocking probability for the overloaded state and re-computing a subscriber population based upon the blocking probability*; and,

> *on condition that the configuration is determined to be stable* in that the configuration satisfies each of the performance model, the QoE model and the finance model, *displaying in the display an indication of stability for the configuration*, but *on condition that the configuration is determined to be unstable, reducing the workload based upon the re-computed subscriber population, establishing a new infrastructure state and re-performing the simulation*.

THE REJECTION

The following rejection is before us for review:

Claims 1–12 and 21–28 are rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter.

FINDINGS OF FACT

We have determined that the findings of fact in the Analysis section below are supported at least by a preponderance of the evidence.[2]

ANALYSIS

Rejection under 35 U.S.C. § 101

The Appellant argues that the rejection of claim 1 is improper because the claim is not directed to an abstract idea (App. Br. 14–20; Reply Br. 2–4). The Appellant argues further that the claim is "significantly more" than the alleged abstract idea (App. Br. 19–22; Reply Br. 5–12).

In contrast, the Examiner has determined that the rejection of record is proper (Final Action 9–13, 17–23; Ans. 4–13).

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[2] *See Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Patent Office).

We agree with the Examiner. An invention is patent eligible if it claims a "new and useful process, machine, manufacture, or composition of matter." 35 U.S.C. § 101. However, the Supreme Court has long interpreted 35 U.S.C. § 101 to include implicit exceptions: "[l]aws of nature, natural phenomena, and abstract ideas" are not patentable. *E.g.*, *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014).

In determining whether a claim falls within an excluded category, we are guided by the Supreme Court's two-step framework, described in *Mayo* and *Alice*. *Id.* at 217–18 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 75–77 (2012)). In accordance with that framework, we first determine what concept the claim is "directed to." *See Alice*, 573 U.S. at 219 ("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."); *see also 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 . . . .").

Concepts determined to be abstract ideas, and thus patent ineligible, include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–20; *Bilski*, 561 U.S. at 611); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 69 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as "molding rubber products" (*Diamond v. Diehr*, 450 U.S. 175, 192 (1981)); "tanning, dyeing, making waterproof cloth, vulcanizing India rubber, smelting ores" (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S.

252, 267–68 (1854))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

In *Diehr*, the claim at issue recited a mathematical formula, but the Supreme Court held that "[a] claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula." *Diehr*, 450 U.S. at 187; *see also id.* at 191 ("We view respondents' claims as nothing more than a process for molding rubber products and not as an attempt to patent a mathematical formula."). Having said that, the Supreme Court also indicated that a claim "seeking patent protection for that formula in the abstract . . . is not accorded the protection of our patent laws, and this principle cannot be circumvented by attempting to limit the use of the formula to a particular technological environment." *Id.* (internal citation omitted) (citing *Benson* and *Flook*); *see, e.g.*, *id*. at 187 ("It is now commonplace that an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.").

The PTO recently published revised guidance on the application of § 101. *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (Jan. 7, 2019) ("Guidance"). Under the Guidance, we first look to whether the claim recites:

> (1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activity such as a fundamental economic practice, or mental processes); and
>
> (2) additional elements that integrate the judicial exception into a practical application, i.e., evaluate whether the claim "appl[ies], rel[ies] on, or use[s] the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort

> designed to monopolize the judicial exception." (*see* Guidance, 84 Fed. Reg. at 54; *see also* MPEP § 2106.05(a)–(c), (e)–(h)).

Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, do we then look to whether the claim:

> (3) adds a specific limitation beyond the judicial exception that is not "well-understood, routine, conventional" in the field (*see* MPEP § 2106.05(d)); or
>
> (4) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.

See Guidance.

If the claim is "directed to" an abstract idea, we turn to the second step of the *Alice* and *Mayo* framework, where "we must examine the elements of the claim to determine whether it contains an 'inventive concept' sufficient to 'transform' the claimed abstract idea into a patent-eligible application." *Alice*, 573 U.S. at 221 (citation omitted). "A claim that recites an abstract idea must include 'additional features' to ensure 'that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].'" *Id.* (alterations in original) (quoting *Mayo*, 566 U.S. at 77). "[M]erely requir[ing] generic computer implementation [] fail[s] to transform that abstract idea into a patent-eligible invention." *Id.*

The Specification at paragraph 8 states that the claimed invention is related to a converged tool for information technology (IT) that models infrastructure performance, quality of experience (QOE), and financial metrics in an interdependent fashion (Spec., para 8, lines 1–3). Here, the Examiner has determined that the claimed analyzing of an information technology architecture sets forth the modeling of network activity by applying business rules and constraints and which is an abstract concept

(Final Act. 17). We substantially agree with the Examiner. We determine that the claim sets forth the concept in italics in the claim above. Here, the claim describes the concept of generating a performance model for an information technology system, computing results for a simulation of the performance model, and based on the results of the performed system simulation including the return on investment (ROI) based on a finance model, making a determination about the system which is a certain method of organizing human activities and a fundament economic practice, i.e., a judicial exception. Here, the claim describes using mathematical modeling to mitigate risk in finding a stable system for the business model. "[A] process that employs mathematical algorithms to manipulate existing information to generate additional information is not patent eligible." *See Digitech Image Techs, LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1351 (Fed. Cir. 2014). Thus, we consider the claim to recite the judicial exception identified above.

We next determine whether the claim recites additional elements in the claim to integrate the judicial exception into a practical application. *See* Guidance, 84 Fed. Reg. at 54–55. The Revised Guidance references the MANUAL OF PATENT EXAMINING PROCEDURE ("MPEP") §§ 2106.05(a)–(c) and (e)–(h).

Here the claims do not improve computer functionality, improve another field of technology, utilize a particular machine, or effect a physical transformation. Rather, we determine that nothing in the claims imposes a meaningful limit on the judicial exception, such that the claims are more than a drafting effort to monopolize the judicial exception.

For example, in claim 1 the steps of [1] "identifying a configuration in the user interface for an information technology infrastructure"; [2] "specifying in the user interface at least one service provided to a population of subscribers"; [3] "setting through the user interface values for each of a performance model, a quality of experience (QoE) model and a finance model based upon the information technology infrastructure"; [4] "setting through the user interface an initial workload so that an overloaded state of more than one hundred percent utilization is experienced by at least one of the subscribers"; [5] simulating the configuration and in response to the simulation, computing by the computing device performance metrics for the infrastructure"; [6] "calculating by the computing device a return on investment (ROI**)** value for based upon the finance model for the overloaded state and determining a blocking probability for the overloaded state and re-computing a subscriber population based upon the blocking probability"; [7] "on condition that the configuration is determined to be stable"; and [8] "displaying in the display an indication of stability for the configuration, but on condition that the configuration is determined to be unstable, reducing the workload based upon the re-computed subscriber population, establishing a new infrastructure state and re-performing the simulation are merely steps performed by a generic computer that do not improve computer functionality. That is, these recited steps [1]–[8] "do not purport to improve the functioning of the computer itself" but are merely generic functions performed by a conventional processor. Likewise, these same steps [1]–[8] listed above do not improve the technology of the technical field and merely use generic computer components and functions to perform the steps. Also, the recited method steps [1]–[8] above do not require a "particular machine"

and can be utilized with a general purpose computer, and the steps performed are purely conventional. In this case the general purpose computer is merely an object on which the method operates in a conventional manner. Further, the claim as a whole fails to effect any particular transformation of an article to a different state. The recited steps [1]–[8] fail to provide meaningful limitations to limit the judicial exception and rather are mere instructions to apply the method to a generic computer.

Considering the elements of the claim both individually and as "an ordered combination" the functions performed by the computer system at each step of the process are purely conventional. Each step of the claimed method does no more than require a generic computer to perform a generic computer function. Thus, the claimed elements have not been shown to integrate the judicial exception into a practical application as set forth in the Revised Guidance which references the MANUAL OF PATENT EXAMINING PROCEDURE ("MPEP") §§ 2106.05(a)–(c) and (e)–(h).

Turning to the second step of the *Alice* and *Mayo* framework, we determine that the claim does not contain an inventive concept sufficient to "transform" the abstract nature of the claim into a patent-eligible application. The claim fails to add a specific limitation beyond the judicial exception that is not well-understood, routine, and conventional in the field. Rather the claim uses well-understood, routine, and conventional activities previously known in the art and they are recited at a high level of generality. The Specification at paragraph 17 for example describes using conventional computer components such as routers, switches, and communication links. The claim specifically includes recitations for a "computing device" implement the method but the computer components are all used in a

manner that is well-understood, routine, and conventional in the field. The Appellant has not shown these claimed generic computer components which are used to implement the claimed method are not well understood, routine, or conventional in the field. Here, the Appellant's arguments and citations have not shown that the claim to be "significantly more" than the abstract idea.

The Appellant in the Appeal Brief at page 15 has also cited to *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016) to show that the claim is not abstract but the claims in that case were not similar in scope to those here in contrast directed to a self-referential data table.

The Appellant in the Reply Brief at page 15 has also cited to *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299 (Fed. Cir. 2016) but the claims in that case are distinguished from this case in being directed to rules for lip sync and facial expression animation.

For these above reasons the rejection of claim 1 is sustained. The Appellant has provided the same arguments for the remaining claims which are drawn to similar subject matter and the rejection of these claims is sustained for the same reasons given above.

CONCLUSIONS OF LAW

We conclude that Appellant has not shown that the Examiner erred in rejecting claims 1–12 and 21–28 under 35 U.S.C. § 101 as being directed to non-statutory subject matter.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–12, 21–28	101	Non-statutory	1–12, 21–28	

TIME PERIOD FOR RESPONSE

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