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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JOSHUA L. PURCELL, TASSANEE K. SUPAKKUL,
MATHEWS THOMAS, and JULIO WONG

Appeal 2018-000758
Application 13/855,779¹
Technology Center 3600

Before TERRENCE W. McMILLIN, KARA L. SZPONDOWSKI, and
SCOTT B. HOWARD, *Administrative Patent Judges*.

McMILLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) of the final
rejection of claims 1–8. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ According to Appellants, the real party in interest is International Business
Machines Corporation. App. Br. 2.

THE CLAIMED INVENTION

The present invention relates “to the field of business process management (BPM) systems and, more particularly, to a dynamically optimized distributed cloud computing-based BPM system.” Spec. ¶ 2. Independent claim 1 is directed to a method. App. Br. 20.

Claim 1, reproduced below, is representative of the claimed subject matter:

1. A workflow optimization method comprising:

identifying, at a workflow server comprising program code executing in memory of a computer, a business process flow comprising a plurality of tasks, wherein said business process flow conforms to a business processing modeling language;

determining by the program code at the workflow server, a plurality of software services disposed within a computer communications network for handling the plurality of tasks of the business process flow, wherein for each of the tasks a corresponding service is identified, along with a time frame for performing the task and a cost for performing the task, and wherein each of the software services corresponds to one of a plurality of different service providers;

sending from the workflow server to each of the different service providers, a plurality of service requests, one for each of the software services, wherein each of the different service providers is also provided with information for the plurality of tasks of the business process flow, which includes tasks assigned by the workflow server to other ones of the different service providers, wherein each of the service providers comprises software running on hardware;

at least a portion of the service providers providing the software services for the tasks assigned to that service provider by the workflow server and,

programmatically in response to a detection of an addition of a workflow to a registry of workflows:

(1) determining an ability of a service provider other than an already selected one of the service providers assigned by the workflow server to perform at least one of the tasks of the business process flow in a more efficient manner than the service provider which was assigned that task by the workflow server, wherein the more efficient manner means that the task will be performed in either a shorter time frame or lower cost than that determined by the workflow server;

(2) responsive to determining the ability of the service provider other than the already selected one of the service providers to perform at least one of the tasks in a more efficient manner, modifying the business process flow to substitute in the business process flow for the already selected one of the service providers, the service provider other than the already selected one of the service providers as performing the at least one of the plurality of tasks; and

executing at the service providers the business process flow in accordance with the modifications that include at least one substituted and more efficient task than that originally determined by the workflow server.

REJECTIONS ON APPEAL

Claims 1–8 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

Claims 1–8 stand rejected under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter.

Claims 1–5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Horvitz et al. (US 2010/0332262 A1; published Dec. 30, 2010) (“Horvitz”), Hadar et al. (US 2011/0213712 A1; published Sept. 1,

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2011) (“Hadar”), and Bursey (US 2009/0089078 A1; published Apr. 2, 2009).

Claims 6 and 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Horvitz, Hadar, Bursey, and Nicklin (US 2011/0161496 A1; published June 30, 2011).

Claim 7 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Horvitz, Hadar, Bursey, and Kawaguchi et al. (US 2010/0217438 A1; published Aug. 26, 2010) (“Kawaguchi”).

ANALYSIS

35 U.S.C. § 112, First Paragraph, Rejection

The Examiner finds the claim language “the service providers modifying the business process flow to substitute in the business process flow for the already selected one of the service providers, the service provider other than the already selected one of the service providers as performing that at least one of the plurality of tasks,” fails to comply with the written description requirement. Final Act. 3. The Examiner finds the Specification “seems to suggest that the cloud workflow manager determines the ability of the service provider,” but “fails to find support for the service providers modifying the business process flow.” Ans. 4 (citing Spec. ¶¶ 89–91); *see* Ans. 19–20.

Appellants contend “ample teachings exist in the original specification to support the claim language.” App. Br. 4–5 (citing Spec. ¶¶ 16, 60). Appellants argue the Examiner’s finding is based on a “false characterization of Appellants’ specification,” and nowhere in the Specification describes “that ‘the cloud service manager determines the

ability of the service provider other than the already selected one.” Reply Br. 3–4 (citing Spec. ¶¶ 89–91).

We are persuaded by Appellants’ arguments. To satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention. *See, e.g., Moba, B.V. v. Diamond Auto., Inc.*, 325 F.3d 1306, 1319 (Fed. Cir. 2003); *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563 (Fed. Cir. 1991). “[T]he test requires an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art,” where “the specification must describe an invention understandable to that skilled artisan and show that the inventor actually invented the invention claimed.” *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). The exact level of detail required depends upon “the nature and scope of the claims and on the complexity and predictability of the relevant technology.” *Id.* Factors for “evaluating the adequacy of the disclosure” may include “the existing knowledge in the particular field, the extent and content of the prior art, the maturity of the science or technology, [and] the predictability of the aspect at issue.” *Id.* (quoting *Capon v. Eshhar*, 418 F.3d 1349, 1359 (Fed. Cir. 2005)).

As cited by Appellants (App. Br. 4–5), the Specification describes

After the initial plan is created, *cloud service providers* would be able to provide a bid to complete tasks more efficiently than indicated by the initial plan. The *initial plan could then be modified to insert a more efficient provider* for at least one of the tasks in accordance with the bids.

Spec. ¶ 16 (emphasis added). We agree with Appellants that the cited passage supports the service providers providing the bids to complete tasks

and modifying the plans to the substitute service providers to complete tasks more efficiently.

Accordingly, we reverse the Examiner's 35 U.S.C. § 112, first paragraph, rejection of claims 1–8.

35 U.S.C. § 101 Rejection

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. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014) (quotation marks and citation omitted).

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)).

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.* (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 PTO recently published revised guidance on the application of § 101. USPTO’s Memorandum, *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (Jan. 7, 2019) (“Memorandum”). Under that 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 (*see* MANUAL OF PATENT EXAMINING PROCEDURE (MPEP) § 2106.05(a)–(c), (e)–(h) (9th Ed., Rev. 08.2017, 2018)).
- 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 Memorandum.

Claim 1

The Examiner determines that the “invention of Claim 1 to be directed toward[s] the abstract idea of determining an ability of a different service provider to perform a task and then modifying a business process flow accordingly.” Ans. 5. According to the Examiner, the “claimed invention can be considered a fundamental economic practice as it includes concepts relating to agreements between entities such as creating contractual relationships,” which is an abstract idea. Ans. 6 (citing *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350 (Fed. Cir. 2014)); *see* Ans. 20–21. The Examiner concludes the claims “are directed toward a method for determining a service provider that can perform task more efficiently.” Ans. 20. The Examiner further determines that the additional claim elements “are recited at a high level of generality and given the broadest reasonable interpretation are simply generic computers performing generic or conventional computer functions.” Ans. 7; *see* Ans. 25.

Claim 1 recites the following limitations: (1) “identifying . . . a business process flow;” (2) “determining . . . a plurality of software services . . . for handling the plurality of tasks of the business process flow;” (3) “sending . . . to each of the different service providers, a plurality of service

requests, one for each of the software services;” (4) “determining an ability of a service provider . . . to perform at least one of the tasks of the business process flow in a more efficient manner . . . in either a shorter time frame or lower cost;” (5) modifying the business process flow;” and (6) executing . . . the business process flow in accordance with the modifications.” These limitations, under the broadest reasonable interpretation, recite a common method of optimizing a business process because the limitations all recite operations that would ordinarily take place in optimizing a business process to perform it more efficiently (i.e., faster or cheaper).

The optimization of a business process through modification to perform it more efficiently (i.e., faster or cheaper) is a common economic act which is ordinarily performed in the course of conducting a business. Like the concept of intermediated settlement in *Alice*, and the concept of hedging in *Bilski*, the concept of optimizing a business practice recited in Appellants’ claims, “is a fundamental economic practice long prevalent in our system of commerce.” *Alice*, 573 U.S. at 216 (citations and internal quotation marks omitted). Accordingly, we conclude the claims recite a fundamental economic practice and, thus, an abstract idea.

Appellants contend “it is clear that Appellants’ claims are directed to a *particular solution to a problem or a particular way to achieve a desired outcome defined by the claimed invention.*” App. Br. 14 (citing *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016)). According to Appellants, the claimed invention “solves a particular technical problem,” by optimizing the cloud workflow based upon operating conditions of the cloud service providers within the cloud computing environment. Reply Br. 7 (citing Spec. ¶ 67).

Appellants make no further arguments concerning whether the claimed invention is directed to an abstract idea, whether the claim contains an “inventive concept” sufficient to “transform” the claimed abstract idea into a patent-eligible application, or if the additional claim elements are well-understood, routine, and conventional in the field. Accordingly, we only consider Appellants’ argument that the claims are directed to a particular solution to solve a particular technical problem. *See Ex parte Frye*, 94 USPQ2d 1072, 1075–76 (BPAI 2010) (“Filing a Board appeal does not, unto itself, entitle an appellant to *de novo* review of all aspects of a rejection. . . . If an appellant fails to present arguments on a particular issue — or more broadly, on a particular rejection — the Board will not, as a general matter, unilaterally review those uncontested aspects of the rejection.”).

Appellants do not sufficiently explain how the improvements of the claimed invention improve cloud computing technology. Specifically, Appellants do not explain how the claimed improvement (i.e., modifying of business process flows to substitute service providers that can perform tasks in a more efficient manner) improves computer technology, rather than merely improving upon managing relationships with service providers. Nor do Appellants provide any evidence to demonstrate that the claimed invention “improve[s] computer related technology by allowing computer performance of a function not previously performable by a computer.” *See* App. Br. 7. And Appellants do not rebut the Examiner’s determination—which we agree with—that the claimed invention is merely directed toward performing a task more efficiently rather than improving another technology or computer function. *See* Ans. 20. Instead, the claimed invention merely

focuses on potential inefficiencies in the prior art BPMs systems. *See* Spec. ¶ 9 (“Further, the BPM system 110 does not take advantage of potential efficiencies and/or cost-savings afforded by the economy within the cloud computing environment. That is, the workflow engine 120 will always use cloud service 1135 to perform step 1127 even if time and/or money could be saved by using another service provider.”). We are not persuaded that the claimed abstract idea is integrated into a practical application that improves computer technology or computer function.

Accordingly, we sustain the Examiner’s 35 U.S.C. § 101 rejection of claims 1–8.

35 U.S.C. § 103 Rejections

Claim 1 recites

responsive to determining the ability of the service provider other than the already selected one of the service providers to perform at least one of the tasks in a more efficient manner, modifying the business process flow to substitute in the business process flow for the already selected one of the service providers, the service provider other than the already selected one of the service providers as performing the at least one of the plurality of tasks.

The Examiner finds Hadar teaches this limitation. *See* Final Act. 11 (citing Hadar ¶ 30). Specifically, the Examiner finds that Hadar teaches that “optimizer 40 may dynamically change the selected provider 30 during the utilization of the computing resource.” *Id.*

Appellants contend Hadar “refers to an ‘optimizer 40’ that locates a ‘lower cost third-party provider’ for computing resource utilization and is able to transition the utilization of a computing resource from one provider to another,” but “does not go so far as the claimed ‘modifying the business

process flow to substitute in the business process flow for the already selected one of the service providers” because Hadar does not teach any “modification of any ‘flow.’” App. Br. 18.

The disputed limitation of claim 1 is a conditional limitation. Specifically, the claimed “modifying the business process flow” occurs only “*responsive to determining* the ability of the service provider other than the already selected one of the service providers to perform at least one of the tasks in a more efficient manner.” See claim 1 (emphasis added). On the other hand, the claim does not require any specific action *if* the ability of the service provider other than the already selected one of the service providers to perform at least one of the tasks is *not determined* to be in a more efficient manner. We conclude that the broadest reasonable construction of claim 1 covers two alternative methods: one method when the ability of the service provider other than the one already selected to perform the tasks is determined to be in a more efficient manner; and another when it is not. See *Ex parte Schulhauser*, No. 2013-007847, 2016 WL 6277792, at *3–5 (PTAB April 28, 2016) (precedential) (discussing construction of conditional limitations in method claims). In light of the claim’s conditional language, the prior art need only teach one of the two alternatives, not both. See *id.* Because the claim does not require any specific action when the service provider other than the already selected one of the service providers to perform at least one of the tasks is not determined to be in a more efficient manner, the cited prior art teaches the claimed method. Therefore, we are not persuaded by Appellants’ arguments that the Examiner erred. *Id.* (holding the claimed subject matter to be obvious when only one of two conditional methods is taught by the prior art).

Moreover, even if we did consider the alternative embodiment in which the service provider other than the already selected one of the service providers to perform at least one of the tasks is determined to be in a more efficient manner, we are not persuaded by Appellants' arguments that the Examiner erred.

Claim 1 recites the "business process flow compris[es] a plurality of tasks" and "the business process flow . . . includes tasks assigned by the workflow server." We find the claimed "business process flow," as recited in the claim, only requires tasks. As such, we agree with the Examiner's conclusion that the claim requires merely "that the flow is modified by substituting service providers," encompassing that the "initial plan could then be modified to insert a more efficient provider for at least one of the tasks." Ans. 27 (citing Spec. ¶ 16) (emphasis omitted).

We further agree with the Examiner's finding that Hadar's optimizer "dynamically chang[ing] the selected provider 30 during the utilization of the computing resource" teaches "modifying a business flow by substituting in the business process flow for the already selected one of the service providers," as claimed. Ans. 27–28 (citing Hadar ¶ 30) (emphasis omitted); *see also* Ans. 12. We also agree with the Examiner's finding that Horvitz's computing tasks and sub computing tasks teach identifying business process flows comprising a plurality of tasks, as claimed. Ans. 8–9 (citing Horvitz ¶¶ 31, 34).

Specifically, Horvitz teaches "smaller computing tasks may be performed by various cloud computing providers." Horvitz ¶ 27. Hadar teaches

optimizer 40 may *dynamically change the selected provider 30 during the utilization of the computing resource*. For example,

client 20 may be utilizing a computing resource on a first provider 30 located within enterprise 12. At one point during execution, optimizer 40 receives offer data 64 and/or locates information within its catalog indicating that a lower cost third-party provider 30 is available for computing resource utilization. At an appropriate transition point (such as, for example, between jobs in a batch processing job), optimizer 40 may transition the utilization of the computing resource to the third-party provider 30. Likewise, optimizer 40 may transition, during the utilization of a computing resource, the computing resource utilization from a third-party provider 30 to a provider 30 located within enterprise 12.

Hadar ¶ 30 (emphases added). In other words, Horvitz teaches flows as tasks, and Hadar teaches tasks (i.e., utilizing computing resources) performed by service providers and then modifying the service providers that handle the tasks (i.e., transition the utilization of the computing resource to another service provider). Appellants have not persuasively argued Horvitz’s tasks (i.e., flows), combined with Hadar’s utilization of computing resources (i.e., tasks as flows) that can transition between service providers (i.e., modify the service providers for the tasks or flows), does not teach or suggest the claimed “modifying the business process flow to substitute in the business process flow for the already selected one of the service providers.”

Accordingly, we sustain the Examiner’s 35 U.S.C. § 103 rejection of independent claim 1, as well the rejections of dependent claims 2–8, not separately argued. *See* App. Br. 15, 19.

DECISION

The Examiner’s rejection of claims 1–8 under 35 U.S.C. § 112, first paragraph, is reversed.

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The Examiner's rejection of claims 1–8 under 35 U.S.C. § 101 is affirmed.

The Examiner's rejections of claims 1–8 under 35 U.S.C. § 103 are affirmed.

Because we affirm at least one ground of rejection with respect to each claim on appeal, we affirm the Examiner's decision to reject all of the pending claims.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED