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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DEYI YAO, YI SONG, and WEISI XIAO

Appeal 2018-005315
Application 14/356,981¹
Technology Center 2400

Before ALLEN R. MacDONALD, 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, 2, 5, 6, 8, 9, 11, 12, 15, 16, 18, and 19. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ Appellants identify Alcatel Lucent as the real party in interest. Appeal Br. 1.

BACKGROUND

THE INVENTION

According to Appellants, the invention “relates to the field of communication technologies, and more particularly, to a method, apparatus and system for simultaneously transmitting or receiving multiple managed objects, and to a transmitting apparatus for simultaneously transmitting multiple managed objects and a receiving apparatus for simultaneously receiving multiple managed objects.” Spec. 1:5–8.

The Specification describes that certain tasks performed by computers must be performed together as part of a single transaction. Spec. 1:16–18. If some tasks in a transaction are successfully performed while other tasks in the same transaction are unsuccessfully performed, then the system may become inconsistent. Thus, the tasks must all be executed successfully for the transaction to execute successfully. Spec. 1:24–26. If one task fails then the entire transaction fails. Spec. 1:26. When a transaction fails, the state of the system is rolled back to a state before the transaction started. Spec. 1:27–29.

The Specification explains that “there is still not a technology of encapsulating multiple managed objects into one message in the prior art, i.e., multiple managed objects cannot be simultaneously transmitted or received.” To solve this problem, Appellants propose to encapsulate two or more managed objects in one atomic transaction, thus ensuring that the managed objects get executed together. *See* Spec. 4:2–10.

Exemplary independent claim 1 is reproduced below.

1. A method for simultaneously transmitting multiple managed objects, the method comprising:

encapsulating two or more managed objects in one or more atomic transactions according to internal attributes and data processing of the managed objects, wherein each atomic transaction includes at least two managed objects;

according to a pre-defined association rule, determining association relationships between managed objects in the one atomic transaction, or determining association relationships between multiple atomic transactions and association relationships between managed objects in each of the multiple atomic transactions; and

transmitting one or more atomic transactions through a single simple object access protocol message via a communication network.

REFERENCES AND REJECTIONS

1. Claims 1, 2, 5, 6, 8, 9, 11, 12, 15, 16, 18, and 19 stand rejected under 35 U.S.C. § 101. Ans. 2–9.

2. Claims 1, 2, 5, 6, 8, 9, 11, 12, 15, 16, 18, and 19 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Kalavacharla (US 2006/0282400 A1, published Dec. 14, 2006) and 3GPP TS 32.607 v7.1.0 (2008-12) (“the SOAP² Standard”).

² SOAP stands for Simple Object Access Protocol. Spec. 1:12.

DISCUSSION

REJECTION UNDER 35 U.S.C. § 101

Legal Principles

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, 191

(1981)); “tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores” (*id.* at 183 n.7 (quoting *Corning v. Burden*, 56 U.S. 252, 267–68 (1853))); 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.* (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.”).

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 (quotation marks 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. *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 (*see* 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.

REJECTION UNDER 35 U.S.C. § 101

Guidance Step 1

Independent claims 1 and 6 are directed to “a method” and independent claims 11 and 16 are directed to an “apparatus.” Appeal Br. 18–21. As such, we find the pending claims are directed to statutory categories, such as a process and machine.

*Guidance Step 2A - Whether the Claims are
Directed to a Judicial Exception*

The Examiner finds the claims are drawn to “collecting, displaying, and manipulating data” and to “organizing and manipulating information through mathematical correlations.” Ans. 4. In the Answer, the Examiner analyzes several limitations of the claims, analogizes them to those in certain Federal Circuit decisions, and finds that they recite abstract ideas. *See* Ans. 4–5. For example, the Examiner finds “the limitations of receiving/encapsulating one or more atomic transactions based on internal attributes and data processing is merely data manipulation.” Ans. 4 (citing *Intellectual Ventures v. Capital One*, 850 F.3d 1332, 1340 (Fed. Cir. 2017)). The Examiner further finds the limitation reciting “according to pre-defined association rule, determining association relationships between managed objects” is “merely organizing and manipulating information through mathematical correlations.” Ans. 5 (citing Spec. 12:15–28, 13:23–14:6).

First Prong of Step 2A

Following the Guidance we first determine whether the claims recite an abstract idea. Appellants argue the claims as a group and thus we take claim 1 to be representative. *See* 37 C.F.R. § 41.37(c)(1)(iv). Claim 1 recites “encapsulating two or more managed objects in one or more atomic transactions.” The encapsulation process groups managed objects together, according to their internal attributes, to ensure that they are executed together in some specified order. Thus, this step analyzes the managed objects and groups them together based on that analysis. Analyzing data is a step that may be performed mentally, and grouping information, data, or software objects together is a step which also may reasonably be performed mentally.

The claim also recites “according to a pre-defined association rule, determining association relationships between managed objects in the one atomic transaction, or determining association relationships between multiple atomic transactions and association relationships between managed objects in each of the multiple atomic transactions.” The claimed “association rule” is described in the Specification as a rule used to determine the order in which managed objects in an atomic transaction must be executed or the order in which atomic transactions in a set of atomic transactions must be executed. *See e.g.* Spec. 12:19–13:11; 13:23–14:6. Thus, by “determining association relationships” between managed objects and between multiple atomic transactions, the claims require determining an execution order of these managed objects and atomic transactions according to a pre-defined rule. As such, this step may be performed mentally by following rules that define an order of execution.

Thus, we find the claims recite steps that are directed to mental processes. Mental processes are identified in the Guidance as a category of abstract ideas, and thus, we find under prong 1 of step 2A, the claims recite an abstract idea.

Second Prong of Step 2A

Next we determine whether the claims recite a practical application of the recited judicial exception. Here we look to see if, for example, (i) any additional elements of the claims reflects an improvement in the functioning of a computer or to another technological field, (ii) an application of the judicial exception with, or by use of, a particular machine, (iii) a transformation or reduction of a particular article to a different state or thing (iv) or a use of the judicial exception in some other meaningful way beyond

generally linking the use of the judicial exception to a particular technological environment. *See* MPEP § 2106.05(a)–(c), (e)–(h)

Appellants call our attention to the “limitation of transmitting multiple objects in a single SOAP message,” which according to Appellants entails “the claimed innovation [of] encapsulate[ing] the multiple managed objects into atomic transactions, and *then* determin[ing] association relationships between encapsulated managed objects in each atomic transaction.” Reply Br. 3. The association relationships allow the managed objects to “be executed in a correct order by a device receiving the single SOAP message containing the managed objects.” Reply Br. 3. Appellants argue that these features make the invention more than “merely encapsulating data objects and determining relationships between them” Reply Br. 3. Instead, Appellants argue, “*the claimed subject matter enables a single SOAP message to be used to transmit multiple managed objects, which previously was not possible, and which has the advantages of reducing network congestion, increasing network (processing) performance and throughput, inter alia.*” Reply Br. 3–4.

Appellants also distinguish the claims in this case from *Content Extraction and Transmission LLC v. Wells Fargo Bank, Nat. Ass’n*, 776 F.3d 1343 (Fed. Cir. 2014) and *Digitech Image Tech. v. Electronics for Imaging, Inc.*, 758 F.3d 1344 (Fed. Cir. 2014) arguing that those cases related to “data collection, recognition, and storing in a memory” and “combining two sets of data into a single data set” respectively, while the “instant claims relate to generating groups (atomic transactions) of managed objects and identifying association relationships only after the managed objects are grouped. The

grouped objects can then be transmitted with their respective relationship information in a single SOAP message.” Reply Br. 4.

We are unpersuaded by Appellants’ arguments. Appellants repeatedly emphasize that the claims require grouping managed objects together and then only after the objects have been grouped together, determining their association relationships. *See* Reply Br. 3–4. However, as we explained above, grouping objects together is a step that can be performed mentally, and determining the association relationships between the managed objects (i.e. the order in which the managed objects are executed) is also a step that can be performed mentally. The fact that the association relationships are determined *after* the managed objects are grouped together does not affect this conclusion. Thus, even if advantages are gained (such as lower network congestion or increased performance) from Appellants’ invention, such advantages accrue from the recited mental processes themselves rather than from improvement to the computer or apparatus involved in implementing Appellants’ invention.

As to the fact that the claims require multiple managed objects to be transmitted in a single SOAP message, we note initially that the Federal Circuit has found that transmitting information, without more, does not constitute something significantly more than an abstract idea. *Cyberfone Systems, LLC v. CNN Interactive Group, Inc.*, 558 Fed. Appx. 988, 992 (“using categories to organize, store, and transmit information is well-established. Here, the well-known concept of categorical data storage, *i.e.*, the idea of collecting information in classified form, then separating and transmitting that information according to its classification, is an abstract idea that is not patent-eligible.”).

Further, although Appellants emphasize that their invention allows for multiple objects to be transmitted in a single SOAP message, the vast majority of their Specification is devoted to explaining the encapsulation and association of managed objects and very little is said about transmitting multiple such managed objects in a single SOAP message. Indeed, other than mentioning that “the user terminal or server transmits one . . . [atomic transaction] through a SOAP message via the communication network to other user terminals or servers” (Spec. 13: 14–15), and also that the apparatus comprises “a transmitting unit for transmitting one or more atomic transactions through a communication network” (Spec. 17:24–25) the evidence presented does not show, beyond the encapsulation and association aspects of the claims, how or why transmitting multiple objects in a single SOAP message improves the functioning of a computer or otherwise evidences a practical application of the recited abstract ideas. Instead we find the “transmitting” limitation to be insignificant post-solution activity.

Thus, we find that the claimed invention does not recite a practical application of the recited judicial exception under prong 2 of step 2A. Accordingly, we find the claims are directed to an abstract idea under step 2A of the Guidance.

*Guidance Step 2B - Whether the Claims
Provide an Inventive Concept*

In our analysis under step 2B, we look to see if the claims add limitations *beyond* the judicial exception that are not “well-understood, routine, conventional” in the field (*see* MPEP § 2106.05(d)). Here we note that the claims recite few if any limitations beyond the recited abstract idea. Claim 1, for example, recites a communication network, and independent

claim 11 recites a “transmitting apparatus,” but these elements are described in the Specification as standard hardware elements that operate in their well-understood and routine ways. For example, the Specification states the invention “may be implemented in a computer program executed on a programmable computer, and each programmable computer includes a processor, processor-readable storage media (including volatile and nonvolatile memories and/or storage elements), and appropriate input and output apparatus.” Spec. 9:14–17.

Thus, we do not find that the claims add limitations beyond the judicial exception that are not “well-understood, routine, conventional” in the field.

REJECTION UNDER 35 U.S.C. § 103

Appellants argue “[t]he Examiner relied on the SOAP standard to teach that each atomic transaction comprises at least two managed objects, and the one or more atomic transactions are transmitted through a single SOAP message.” Appeal Br. 7. According to Appellants “the SOAP standard . . . does not disclose sending an atomic transaction comprising multiple (two or more) managed objects via a single simple object protocol message. Rather, only a single managed object can be transmitted according to SOAP” Appeal Br. 8. Appellants also argue that “Kalavacharla also does not provide any such teaching and is not relied upon by the Examiner to do so.” Appeal Br. 7. Thus, Appellants contend “combining the features of Kalavacharla with the single simple object access protocol of SOAP would not result in the claimed feature of transmitting two or more managed objects in an atomic transaction via a single simple object protocol message.” Appeal Br. 8.

We are unpersuaded by Appellants' argument. The Examiner finds "Kalvacharla, Fig. 3, para. 44, teaches the transaction business object encapsulates business objects 302a-c, which teaches *encapsulating two or more managed objects into one or more atomic transaction* and Fig. 4, para.55 teaches transmitting the transaction business object (interpreted as the atomic transaction with two or more managed objects) over a communication network to the integration adapter (receiver) therefore teaches *transmitting one or more atomic transaction*, which is not being disputed by the applicant." Advisory Act. March 28, 2017 (Advisory Act.) at 2. The Examiner further finds "Kalvacharla however is silent to what protocol is being used to transmit the transaction business object with the managed objects, in other words does not teach the use of a single SOAP message for communication." Advisory Act. at 2. "3GPP SOAP Standard(3GPP) was relied upon to teach a single SOAP message, which is not being disputed by the applicant."

As can be seen, and contrary to Appellants' contention, the Examiner is not relying on the SOAP standard "to teach that each atomic transaction comprises at least two managed objects" (Appeal Br. 7) but instead relies on Kalvacharla as teaching an atomic transaction comprising at least two managed objects (Final Act. 3; Advisory Act. 2 (citing Kalvacharla ¶ 44)). We agree with the Examiner's finding. Kalvacharla teaches that "A transaction business object 300 in accordance with one embodiment may comprise an object wrapper *encapsulating multiple business objects 302a-c* needed to complete a transaction" Kalvacharla ¶ 44 (emphasis added). Kalvacharla also teaches that "an integration broker **102** is configured to *transport a transaction business object 300* encapsulating a transaction, or a

logical unit of work, to the integration adapter **106.**” Kalvacharla ¶ 55 (emphasis added). Thus Kalvacharla discloses encapsulating multiple business objects into a transaction business object and transmitting that transaction business object over a communication connection, which we agree teaches “encapsulating two or more managed objects in one or more atomic transactions” and “transmitting one or more atomic transactions through a single . . . message” as the Examiner finds.

However, because Kalvacharla does not teach that this message is a SOAP message, the Examiner relies upon the SOAP standard to teach the specific SOAP protocol and message. Final Act. 4. Thus, we agree with the Examiner’s finding that the combination of Kalvacharla with the SOAP standard would teach one of ordinary skill in the art “encapsulating two or more managed objects in one or more atomic transactions” and transmitting such objects in a single message, as taught by Kalvacharla, and that the single message may be a SOAP message, as taught by the SOAP standard.

Accordingly, we sustain the Examiner’s rejection of claim 1. Appellants present the same arguments for independent claims 6 and 11 as they did for claim 1 and thus, for the same reasons, the Examiner’s rejection of claims 6 and 11 are sustained as well. Finally, Appellants do not present any additional arguments for the separate patentability of dependent claims 2, 5, 8, 9, 12, 15, 18, and 19. Thus, we sustain the Examiner’s rejection of these dependent claims.

Appeal 2018-005315
Application 14/356,981

DECISION

The Examiner's rejection of claims 1, 2, 5, 6, 8, 9, 11, 12, 15, 16, 18, and 19 under 35 U.S.C. § 101 is affirmed.

The Examiner's rejection of claims 1, 2, 5, 6, 8, 9, 11, 12, 15, 16, 18, and 19 under 35 U.S.C. § 103 is affirmed.

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

AFFIRMED