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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JAMES A. SCHEINBLUM, SHALABH MOHAN,
JASON A. LANGO, THOMAS B. GILLIS, and
ROBERT K. JR. VAN ZANT

Appeal 2018-001349
Application 13/835,167¹
Technology Center 3600

Before JENNIFER S. BISK, LARRY J. HUME, and JULIET M. DIRBA,
Administrative Patent Judges.

HUME, *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 1–5, 7–18, and 20–26, which are all claims pending in the application. Appellants have canceled claims 6 and 19. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ According to Appellants, the real party in interest is Bracket Computing, Inc. App. Br. 1.

STATEMENT OF THE CASE²

The Invention

Appellants’ disclosed embodiments and claimed invention “relate[] to virtual computing . . . more specifically to computer-implemented techniques for allocating and pricing virtual resources.” Spec. ¶ 1.

Exemplary Claim

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

1. A method comprising:

using a computing system that implements an allocation and pricing system, obtaining pricing information for a plurality of virtual computing resources offered by a plurality of providers;

determining, using the computing system, a set of selected virtual computing resources from the plurality of virtual computing resources of a first particular provider among the plurality of providers, for a first customer;

determining, using the computing system, an expected quantity for a billing period for at least one virtual computing resource in the set of selected virtual computing resources for the first customer;

determining, using the computing system, a fixed charge based on the pricing information of the first particular provider, the set of selected virtual computing resources and at least one expected quantity associated with the set of selected virtual computing resources, wherein the first customer is billed, using

² Our decision relies upon Appellants’ Appeal Brief (“App. Br.,” filed May 19, 2017); Reply Brief (“Reply Br.,” filed Nov. 20, 2017); Examiner’s Answer (“Ans.,” mailed Sept. 29, 2017); Final Office Action (“Final Act.,” mailed Sept. 26, 2016); and the original Specification (“Spec.,” filed Mar. 15, 2013).

the computing system, for the fixed charge for the billing period;

determining, using the computing system, at least one unit rate for at least one virtual computing resource in the set of selected virtual computing resources based on the pricing information;

providing the first customer access to the set of selected virtual computing resources during the billing period;

changing, using the computing system, at least one virtual computing resource assigned to the set of selected virtual computing resources associated with the first customer during the billing period;

generating a primary account for the first customer, including receiving a prepaid primary account balance associated with the primary account at a beginning of the billing period and permitting the primary account balance to become negative;

crediting the primary account with a primary budget based on the fixed charge;

generating, using the computing system, a plurality of group accounts for the first customer, wherein each group account corresponds to a group authorized to use the set of selected virtual computing resources associated with the first customer;

obtaining, using the computing system, a plurality of group budgets, wherein a group budget of the plurality of group budgets is less than the primary budget, and a sum of the plurality of group budgets is greater than the primary budget;

limiting use of at least one virtual computing resource for a particular group account of the plurality of group accounts in response to the particular group account being debited more than a particular group budget of the plurality of group budgets, wherein the particular group account and the particular group budget correspond to a same group;

wherein usage of at least one virtual computing resource in the set of selected virtual computing resources is debited,

using the computing system, from both the primary account and an associated group account even when the associated group account is negative;

wherein the method is performed by one or more computing devices.

Rejection on Appeal

Claims 1–5, 7–18, and 20–26 stand rejected under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter. Final Act. 3.

CLAIM GROUPING

Based on Appellants’ arguments (App. Br. 6–20) and our discretion under 37 C.F.R. § 41.37(c)(1)(iv), we decide the appeal of the patent-ineligible subject matter rejection R1 of claims 1–5, 7–18, and 20–26 on the basis of representative claim 1.³

ISSUE

Appellants argue (App. Br. 6–20; Reply Br. 1–7) the Examiner’s rejection of claim 1 under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter is in error. These contentions present us with the following issue:

³ “Notwithstanding any other provision of this paragraph, the failure of appellant to separately argue claims which appellant has grouped together shall constitute a waiver of any argument that the Board must consider the patentability of any grouped claim separately.” 37 C.F.R. § 41.37(c)(1)(iv). In addition, when Appellants do not separately argue the patentability of dependent claims, the claims stand or fall with the claims from which they depend. *In re King*, 801 F.2d 1324, 1325 (Fed. Cir. 1986).

Under our Revised Guidance, informed by our governing case law concerning 35 U.S.C. § 101, is claim 1 patent-ineligible under § 101?

PRINCIPLES OF LAW

A. 35 U.S.C. § 101

“Whether a claim is drawn to patent-eligible subject matter is an issue of law that we review de novo.” *SiRF Tech., Inc. v. Int’l Trade Comm’n*, 601 F.3d 1319, 1331 (Fed. Cir. 2010).

An invention is patent-eligible if it claims a “new and useful process, machine, manufacture, or composition of matter.” 35 U.S.C. § 101.⁴ 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. *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 70 (2012) (brackets in original) (citing *Diamond v. Diehr*, 450 U.S. 175, 185 (1981)).

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*. *Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 217–18 (2014) (citing *Mayo*, 566 U.S. at 75–77). 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

⁴ This threshold analysis of whether a claim is directed to one of the four statutory categories of invention, *i.e.*, a process, machine, manufacture, or composition of matter, is referred to as “*Step 1*” in the USPTO’s patent-eligibility analysis under § 101. MPEP § 2106.

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” (*Diehr*, 450 U.S. at 191); “tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores” (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S. (15 How.) 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 “[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.* (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.”).

Abstract ideas may include, but are not limited to, fundamental economic practices, methods of organizing human activities, and mathematical formulas or relationships. *Alice*, 573 U.S. at 217–21. Under this guidance, we must therefore ensure at step one that we articulate what the claims are directed to with enough specificity to ensure the step one inquiry is meaningful. *Id.* at 217 (“[W]e tread carefully in construing this exclusionary principle lest it swallow all of patent law.”).

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.*

B. USPTO Revised Guidance

The USPTO recently published revised guidance in the Federal Register concerning the application of § 101. *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (January 7, 2019) (hereinafter “Revised Guidance”) (<https://www.govinfo.gov/content/pkg/FR-2019-01-07/pdf/2018-28282.pdf>).

Under the Revised 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);⁵ and

(2) additional elements that integrate the judicial exception into a practical application (*see* Manual for Patent Examining Procedure (“MPEP”) §§ 2106.05(a)–(c), (e)–(h)).⁶

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 are 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.⁷

See Revised Guidance.

Step 2A(i) – Abstract Idea

Informed by our judicial precedent, the Revised Guidance extracts and synthesizes key concepts identified by the courts as abstract ideas to explain

⁵ Referred to as “*Revised Step 2A, Prong 1*” in the Revised Guidance (hereinafter “*Step 2A(i)*”).

⁶ Referred to as “*Revised Step 2A, Prong 2*” in the Revised Guidance (hereinafter “*Step 2A(ii)*”).

⁷ Items (3) and (4) continue to be collectively referred to as “*Step 2B*” of the Supreme Court’s two-step framework, described in *Mayo* and *Alice*.

that the abstract idea exception includes the following groupings of subject matter, when recited as such in a claim limitation:

(a) Mathematical concepts—mathematical relationships, mathematical formulas or equations, mathematical calculations;

(b) Certain methods of organizing human activity — fundamental economic principles or practices (including hedging, insurance, mitigating risk); commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations); managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions); and

(c) Mental processes—concepts performed in the human mind (including an observation, evaluation, judgment, opinion).

Under the Revised Guidance, if the claim does not recite a judicial exception (a law of nature, natural phenomenon, or subject matter within the enumerated groupings of abstract ideas above), then the claim is patent-eligible at *Step 2A(i)*. This determination concludes the eligibility analysis, except in situations identified in the Revised Guidance.⁸

However, if the claim recites a judicial exception (i.e., an abstract idea enumerated above, a law of nature, or a natural phenomenon), the claim requires further analysis for a practical application of the judicial exception in *Step 2A(ii)*.

⁸ In the rare circumstance in which an examiner believes a claim limitation that does not fall within the enumerated groupings of abstract ideas should nonetheless be treated as reciting an abstract idea, the procedure described in of the Guidance for analyzing the claim should be followed. *See* Revised Guidance, Section III.C.

Step 2A(ii) – Practical Application

If a claim recites a judicial exception in *Step 2A(i)*, we determine whether the recited judicial exception is integrated into a practical application of that exception in *Step 2A(ii)* by: (a) identifying whether there are any additional elements recited in the claim beyond the judicial exception(s); and (b) evaluating those additional elements individually and in combination to determine whether they integrate the exception into a practical application.

The seven identified “practical application” sections of the MPEP,⁹ cited in the Revised Guidance under *Step 2A(ii)*, are:

- (1) MPEP § 2106.05(a) Improvements to the Functioning of a Computer or To Any Other Technology or Technical Field
- (2) MPEP § 2106.05(b) Particular Machine
- (3) MPEP § 2106.05(c) Particular Transformation
- (4) MPEP § 2106.05(e) Other Meaningful Limitations
- (5) MPEP § 2106.05(f) Mere Instructions To Apply An Exception
- (6) MPEP § 2106.05(g) Insignificant Extra-Solution Activity
- (7) MPEP § 2106.05(h) Field of Use and Technological Environment

If the recited judicial exception is integrated into a practical application as determined under one or more of the MPEP sections cited

⁹ See MPEP § 2106.05(a)–(c), (e)–(h). Citations to the MPEP herein refer to revision [R-08.2017]. Sections 2106.05(a), (b), (c), and (e) are indicative of integration into a practical application, while sections 2106.05(f), (g), and (h) relate to limitations that are not indicative of integration into a practical application.

above, then the claim is not directed to the judicial exception, and the patent-eligibility inquiry ends. If not, then analysis proceeds to *Step 2B*.

Step 2B – “Inventive Concept” or “Significantly More”

Under our precedent, it is possible that a claim that does not “integrate” a recited judicial exception under *Step 2A(ii)* is nonetheless patent eligible. For example, the claim may recite additional elements that render the claim patent eligible even though a judicial exception is recited in a separate claim element.¹⁰ The Federal Circuit has held claims eligible at the second step of the *Alice/Mayo* test (USPTO *Step 2B*) because the additional elements recited in the claims provided “significantly more” than the recited judicial exception (e.g., because the additional elements were unconventional in combination).¹¹ Therefore, if a claim has been determined to be directed to a judicial exception under *Revised Step 2A*, we must evaluate the additional elements individually and in combination under *Step 2B* to determine whether they provide an inventive concept (i.e., whether the additional elements amount to significantly more than the exception itself).¹²

¹⁰ See, e.g., *Diehr*, 450 U.S. at 187.

¹¹ See, e.g., *Amdocs (Israel), Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1300, 1304 (Fed. Cir. 2016); *BASCOM Global Internet Services, Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1349–52 (Fed. Cir. 2016); *DDR Holdings v. Hotels.com, L.P.*, 773 F.3d 1245, 1257–59 (Fed. Cir. 2014).

¹² The patent eligibility inquiry may contain underlying issues of fact. *Mortg. Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1325 (Fed. Cir. 2016). In particular, “[t]he question of whether a claim element or combination of elements is well-understood, routine and conventional to a skilled artisan in the relevant field is a question of fact.” *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1368 (Fed. Cir. 2018).

Under the Revised Guidance, we must consider in *Step 2B* whether an additional element or combination of elements: (1) “Adds a specific limitation or combination of limitations that are not well-understood, routine, conventional activity in the field, which is indicative that an inventive concept may be present;” or (2) “simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception, which is indicative that an inventive concept may not be present.” *See Revised Guidance, III.B.*¹³

In the *Step 2B* analysis, an additional element (or combination of elements) is not well-understood, routine or conventional unless the examiner finds an evidentiary basis, and expressly supports a rejection in writing with, one or more of the following:

1. A citation to an express statement in the specification or to a statement made by an applicant during prosecution that demonstrates the well-understood, routine, conventional nature of the additional element(s). . . .
2. A citation to one or more of the court decisions discussed in MPEP § 2106.05(d)(II) as noting the well-

¹³ In accordance with existing *Step 2B* guidance, an Examiner’s finding that an additional element (or combination of elements) is well understood, routine, conventional activity must be supported with at least one of the four specific types of evidence required by the USPTO *Berkheimer* Memorandum, as shown above. For more information concerning evaluation of well-understood, routine, conventional activity, *see* MPEP § 2106.05(d), as modified by the USPTO *Berkheimer* Memorandum (USPTO Commissioner for Patents Memorandum dated Apr. 19, 2018, “Changes in Examination Procedure Pertaining to Subject Matter Eligibility, Recent Subject Matter Eligibility Decision (*Berkheimer v. HP, Inc.*)” (hereinafter “*Berkheimer Memo*”).

understood, routine, conventional nature of the additional element(s).

3. A citation to a publication that demonstrates the well-understood, routine, conventional nature of the additional element(s). . . .

4. A statement that the examiner is taking official notice of the well-understood, routine, conventional nature of the additional element(s). . . .

See Berkheimer Memo.

The analysis in *Step 2B* further determines whether an additional element or combination of elements:

(a) Adds a specific limitation or combination of limitations that are not well-understood, routine, conventional activity in the field, which is indicative that an inventive concept may be present; or

(b) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception, which is indicative that an inventive concept may not be present.

Revised Guidance, *and see Berkheimer Memo.*

If the Examiner or the Board determines under *Step 2B* that the element (or combination of elements) amounts to significantly more than the exception itself, the claim is eligible, thereby concluding the eligibility analysis.

However, if a determination is made that the element and combination of elements does not amount to significantly more than the exception itself, the claim is ineligible under *Step 2B*, and the claim should be rejected for lack of subject matter eligibility.

ANALYSIS

Step 1

Claim 1, as a method (process) claim, recites one of the enumerated categories of eligible subject matter in 35 U.S.C. § 101. Therefore, the issue before us is whether it is directed to a judicial exception without significantly more.

Step 2A(i): Does the Claim Recite a Judicial Exception?

The Examiner determined claim 1 is “directed to determining price information and charging a customer based on virtual resource usage, which is considered an abstract idea.” Final Act. 3. The Examiner also provides an analysis of each limitation of claim 1, and how they are considered to be at least part of the abstract idea, and further cites to multiple precedential and non-precedential cases in support. Final Act. 3–6. Further, “[a]ccording to the case law cited, the examiner finds the abstract idea to include at least the judicial descriptor(s) of: fundamental economic practice, certain methods of organizing human activity, and an idea of ‘itself’.” Final Act. 6 (footnote omitted).

We conclude claim 1 does not recite the judicial exceptions of either natural phenomena or laws of nature. We evaluate, *de novo*, whether claim 1 recites an abstract idea based upon the Revised Guidance.

Claim 1 recites, in pertinent part, “[a] method,” that includes the steps of:

- (1) “[O]btaining pricing information for a plurality of virtual computing resources offered by a plurality of providers.”

(2) “[D]etermining . . . a set of selected virtual computing resources from the plurality of virtual computing resources of a first particular provider among the plurality of providers, for a first customer.”

(3) “[D]etermining . . . an expected quantity for a billing period for at least one virtual computing resource in the set of selected virtual computing resources for the first customer.”

(4) “[D]etermining . . . a fixed charge based on the pricing information of the first particular provider, the set of selected virtual computing resources and at least one expected quantity associated with the set of selected virtual computing resources, wherein the first customer is billed . . . for the fixed charge for the billing period.”

(5) “[D]etermining . . . at least one unit rate for at least one virtual computing resource in the set of selected virtual computing resources based on the pricing information.”

(6) “[P]roviding the first customer access to the set of selected virtual computing resources during the billing period.”

(7) “[C]hanging . . . at least one virtual computing resource assigned to the set of selected virtual computing resources associated with the first customer during the billing period.”

(8) “[G]enerating a primary account for the first customer, including receiving a prepaid primary account balance associated with the primary account at a beginning of the billing period and permitting the primary account balance to become negative.”

(9) “[C]rediting the primary account with a primary budget based on the fixed charge.”

(10) “[G]enerating . . . a plurality of group accounts for the first customer, wherein each group account corresponds to a group authorized to use the set of selected virtual computing resources associated with the first customer.”

(11) “[O]btaining . . . a plurality of group budgets, wherein a group budget of the plurality of group budgets is less

than the primary budget, and a sum of the plurality of group budgets is greater than the primary budget.”

(12) “[L]imiting use of at least one virtual computing resource for a particular group account of the plurality of group accounts in response to the particular group account being debited more than a particular group budget of the plurality of group budgets, wherein the particular group account and the particular group budget correspond to a same group.”

(13) “[W]herein usage of at least one virtual computing resource in the set of selected virtual computing resources is debited . . . from both the primary account and an associated group account even when the associated group account is negative.”

(14) “[W]herein the method is performed by one or more computing devices.”

Claims App’x.

The Specification provides context as to what the claimed invention is directed to. In this case, the Specification discloses that the invention “relates to virtual computing . . . [and] more specifically to computer-implemented techniques for allocating and pricing virtual resources.”

Spec. ¶ 1.

Appellants’ Abstract describes the invention as:

A method and apparatus for allocating and pricing virtual resources is provided . . . [in which] pricing information is obtained for a plurality of virtual resources offered by a plurality of providers. A set of selected virtual resources is determined for a first customer. An expected quantity is determined for at least one virtual resource for the first customer. A fixed charge is determined based on the pricing information, the set of selected virtual resources and at least one expected quantity. At least one unit rate is determined for at least one virtual resource based on the pricing information. The first customer is provided access to the set of selected virtual

resources during a billing period, wherein the fixed charge is billed for the billing period. An overflow charge, if any, is determined the at least one unit rate and an actual usage during the billing period.

Spec. 26.

We agree with the Examiner that claim 1 recites an abstract idea, but differ slightly as to the characterization of the abstract idea. Similar to the Examiner, we determine claim 1 recites a certain method of organizing human activity, but instead of a fundamental economic practice, we conclude the abstract idea is in the form of commercial interactions as sales activities or behaviors. Further, aside from the recited computer-related aspects, the claimed commercial interactions represent sales and business activities that may also be performed in the human mind and/or by pen and paper. This type of activity, i.e., allocating and pricing (virtual) resources in each of limitations (2) through (13), for example, includes longstanding conduct that existed well before the advent of computers and the Internet. *See CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1375 (Fed. Cir. 2011) (“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*.”).¹⁴

¹⁴ Our reviewing court recognizes that “[a]n abstract idea can generally be described at different levels of abstraction.” *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1240 (Fed. Cir. 2016). That need not and, in this case does not, “impact the patentability analysis.” *Id.* at 1241. Further, “[t]he Board’s slight revision of its abstract idea analysis does not impact the patentability analysis.” *Id.* Moreover, merely combining several abstract ideas does not render the combination any less abstract. *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017) (“Adding one abstract idea (math) to another abstract idea . . . does not render the claim non-abstract.”); *see*

Under the broadest reasonable interpretation standard,¹⁵ we conclude limitations (2) through (13) recite steps that would ordinarily occur when allocating and pricing resources, including generating accounts and crediting and/or debiting those accounts as necessary for the particular resource allocation (sales) transaction. *See* Final Act. 3–6. For example, determining a resource for a customer to use and the quantity of that resource, along with the pricing or fixed charge associated therewith, are activities that would normally occur in a business transaction before any resource allocation is initiated. Further, establishing or generating an account and issuing credits or debits to that account or group of accounts, along with limiting resource access based upon exceeding a paid for amount are also long-established business practices that would also typically be involved with a resource allocation operation, whether initiated person-to-person, on paper, or using a computer.

Thus, under *Step 2A(i)*, we agree with the Examiner that claim 1’s *method for allocating, pricing, and billing virtual resources* is a commercial

also FairWarning IP, LLC v. Iatric Sys., Inc., 839 F.3d 1089, 1093–94 (Fed. Cir. 2016) (determining the pending claims were directed to a combination of abstract ideas).

¹⁵ During prosecution, claims must be given their broadest reasonable interpretation when reading claim language in light of the specification as it would be interpreted by one of ordinary skill in the art. *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). Under this standard, we interpret claim terms using “the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant’s specification.” *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997).

interaction including sales activities. We conclude claim 1, as a whole, under our Revised Guidance, recites a judicial exception of certain methods of organizing human activity, i.e., a commercial interaction in the form of a sales activity, and thus is an abstract idea.

Step 2A(ii): Judicial Exception Integrated into a Practical Application?

If the claims are directed to a patent-ineligible concept, as we conclude above, we proceed to the “practical application” *Step 2A(ii)* in which we determine whether the recited judicial exception is integrated into a practical application of that exception by: (a) identifying whether there are any additional elements recited in the claim beyond the judicial exception(s); and (b) evaluating those additional elements individually and in combination to determine whether they integrate the exception into a practical application.

As to the specific limitations, while we conclude each of limitations (2) through (13) of claim 1 recite abstract ideas as identified in *Step 2A(i)*, *supra*, we conclude limitation (1) (“obtaining pricing information for a plurality of virtual computing resources offered by a plurality of providers”) recites insignificant data gathering. *See* MPEP § 2106.05(g). Data gathering, as performed by this step or function in Appellants’ claims, is a classic example of insignificant extra-solution activity. *See, e.g., In re Bilski*, 545 F.3d 943, 963 (Fed. Cir. 2008) (en banc), *aff’d sub nom, Bilski v. Kappas*, 561 U.S. 593 (2010).

Further, we conclude limitation (14), i.e., “wherein the method is performed by one or more computing devices,” merely identifies the field of use and technological environment (*see* MPEP § 2106.05(h)), and thus, does

not integrate the commercial interaction of the recited sales activities into a practical application.

Therefore, we conclude the claim as a whole merely uses instructions to implement the abstract idea on a computer or, alternatively, merely uses a computer as a tool to perform the abstract idea. Thus, on this record, Appellants have not shown an improvement or practical application under the guidance of Manual of Patent Examining Procedure section 2106.05(a) (“Improvements to the Functioning of a Computer or to Any Other Technology or Technical Field”) or section 2106.05(e) (“Other Meaningful Limitations”). Nor do Appellants advance any arguments in the Brief(s) that are directed to the *Bilski* machine-or-transformation test, which would only be applicable to the method (process) claims on appeal. See MPEP §§ 2106.05(b) (Particular Machine) and 2106.05(c) (Particular Transformation).

Therefore, we conclude the abstract idea is not integrated into a practical application, and thus the claim is directed to the judicial exception.

Step 2B – “Inventive Concept” or “Significantly More”

If the claims are directed to a patent-ineligible concept, as we conclude above, we proceed to the “inventive concept” step. For *Step 2B* we must “look with more specificity at what the claim elements add, in order to determine ‘whether they identify an “inventive concept” in the application of the ineligible subject matter’ to which the claim is directed.” *Affinity Labs of Texas, LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1258 (Fed. Cir. 2016) (quoting *Elec. Power Grp.*, 830 F.3d at 1353).

In applying step two of the *Alice* analysis, our reviewing court guides we must “determine whether the claims do significantly more than simply describe [the] abstract method” and thus transform the abstract idea into patentable subject matter. *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715 (Fed. Cir. 2014). We look to see whether there are any “additional features” in the claims that constitute an “inventive concept,” thereby rendering the claims eligible for patenting even if they are directed to an abstract idea. *Alice*, 573 U.S. at 221. Those “additional features” must be more than “well-understood, routine, conventional activity.” *Mayo*, 566 U.S. at 79.

Limitations referenced in *Alice* that are not enough to qualify as “significantly more” when recited in a claim with an abstract idea include, as non-limiting or non-exclusive examples: adding the words “apply it” (or an equivalent) with an abstract idea¹⁶; mere instructions to implement an abstract idea on a computer¹⁷; or requiring no more than a generic computer to perform generic computer functions that are well-understood, routine and conventional activities previously known to the industry.¹⁸

In section “C” of the Appeal Brief relating to Appellants’ “inventive concept” analysis, Appellants allege “because the claims already have been

¹⁶ *Alice*, 573 U.S. at 221–23.

¹⁷ *Alice*, 573 U.S. at 221, *e.g.*, simply implementing a mathematical principle on a physical machine, namely a computer (citing *Mayo*, 566 U.S. at 84–85).

¹⁸ *Alice*, 573 U.S. at 225, *e.g.*, using a computer to obtain data, adjust account balances, and issue automated instructions.

found to satisfy § 103, they necessarily reflect a level of inventiveness that is sufficient to satisfy § 101.” App. Br. 12.

We are not persuaded by Appellants’ argument because, as the Supreme Court emphasizes, “[t]he ‘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.” *Diehr*, 450 U.S. 175 at 188–89 (emphasis added). Our reviewing court further guides that “[e]ligibility and novelty are separate inquiries.” *Two-Way Media Ltd. v. Comcast Cable Commc’ns, LLC*, 874 F.3d 1329, 1340 (Fed. Cir. 2017); see also *Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1263 (Fed. Cir. 2016) (holding that “[e]ven assuming” that a particular claimed feature was novel does not “avoid the problem of abstractness”).

Appellants generally allege the Examiner has improperly undertaken an obviousness analysis under § 103 in rejecting the claims under § 101 as being directed to patent-ineligible subject matter. See App. Br. 12–14. “Two recent Federal Circuit decisions [*Bascom*¹⁹ and *McRO*²⁰] help shed light on whether the patent eligibility analysis under § 101 and the *Alice* decision implicate [sic] the novelty determination under § 102 and/or the nonobviousness determination under § 103.” App. Br. 13. “While the *Bascom* holding at least helps clarify that a more thorough analysis under step two of the *Alice* test is required, the Federal Circuit has proven that

¹⁹ *Bascom Global Internet Services, Inc. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016).

²⁰ *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299 (Fed. Cir. 2016).

even it does not understand that § 103 is a different section of the patent statute from § 101 and thus not only requires a separate analysis, but also a recognition that obviousness determinations have no place in a § 101 analysis.” *Id.* (emphasis added). We do not agree with Appellants’ assessment of the state of Federal Circuit jurisprudence with respect to patent eligibility under § 101.

In *Bascom*, the claims were directed to the inventive concept of providing customizable Internet-content filtering which, under Step 2 of the Alice analysis, was found to transform the abstract idea of filtering content into a patent-eligible invention. Although the underlying idea of filtering Internet content was deemed to abstract, under step 2 of the Alice analysis, the claims carved out a specific location for the filtering system, namely a remote Internet service provider (ISP) server, and required the filtering system to give users the ability to customize filtering for their individual network accounts. *Bascom Global Internet Services, Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1349 (Fed. Cir. 2016).

In response to Appellants’ apparent reliance upon *Bascom, supra*, there is no evidence of record to substantiate the assertion that the claims recite non-conventional and non-generic arrangement of known, conventional elements, as in *Bascom*. Moreover, we find no analogy between Appellants’ claimed automated survey and the Internet content filtering claims in *Baccom*.

Appellants also appear to argue the claims are similar to those held patent-eligible in *McRO*. App. Br. 14 (citing *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299 (Fed. Cir. 2016)). The claims in *McRO*

recited a “specific . . . improvement in computer animation” using “unconventional rules that relate[d] sub-sequences of phonemes, timings, and morph weight sets.” *McRO*, 837 F.3d at 1302–03, 1307–08, 1314–15. In *McRO*, “the incorporation of the claimed rules, not the use of the computer,” improved an existing technological process. *Id.* at 1314. Appellants do not, however, identify how claim 1 improves an existing technological process. *See Alice*, 573 U.S. at 223 (explaining that “the claims in *Diehr* were patent eligible because they improved an existing technological process”). Rather, claim 1 concerns a “method” used to determine, *inter alia*, allocation and pricing of virtual resources. *See* claim 1.²¹

Appellants further allege, “[t]o the extent that any inventiveness standard applies, Appellants’ claims are eligible under § 101 because each recites ‘an unconventional solution that was an improvement over the prior art.’” App. Br. 16 (generally citing *Amdocs (Israel) Limited v. Openet Telecom, Inc.*, 841 F.3d 1288 (Fed. Cir. 2016)).

In *Amdocs*, the Federal Circuit held that claim 1 of the patent at issue is also like the claims in *Bascom* because even though the system in the ‘065 patent relies upon some arguably generic limitations, when all limitations are considered individually and

²¹ Appellants allege, however, the claims “provide an improved computer-implemented method which has, as one improvement, incentivizing the accuracy of usage expectations to improve how computational resources are allocated, thereby improving the performance of the computer system itself.” App. Br. 16. While the claim arguably may incentivize the accuracy of usage expectations of how computational resources are allocated, the end result of the claim is accounting for and pricing/billing for any such allocation of resources, and not actually improving the operation of the system on which the billing is conducted.

as an ordered combination, they provide an inventive concept through the use of distributed architecture. This is similar to the design in *Bascom* which permitted the invention to have a filtering tool with the benefits of a filter on a local computer and the benefits of a filter on an ISP server. The benefits in *Bascom* were possible because of customizable filtering features at specific locations remote from the user. Similarly, the benefits of the '065 patent's claim 1 are possible because of the distributed, remote enhancement that produced an unconventional result—reduced data flows and the possibility of smaller databases. This arrangement is not so broadly described to cause preemption concerns. Instead, it is narrowly circumscribed to the particular system outlined. As in *Bascom* this is a technical improvement over prior art technologies and served to improve the performance of the system itself.

Amdocs (Israel) Limited v. Openet Telecom, Inc., 841 F.3d 1288, 1302 (Fed. Cir. 2016).

Again, we determine Appellants' reliance upon *Amdocs* is unavailing, because there is no indication that claim 1 on appeal improves the underlying computer system operation by providing unconventional results produced by a distributed, remote enhancement that reduces data flows and allows for the possibility of smaller databases.

Appellants also contend the “claims are eligible on the same basis [as in *Enfish*] because . . . they provide an improved computer-implemented method which has, as one improvement, *incentivizing the accuracy of usage expectations to improve how computational resources are allocated*, thereby improving the performance of the computer system itself.” App. Br. 16 (citing *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016)).

In *Enfish*, our reviewing court held claims directed to a self-referential logical model for a computer database patent-eligible *under step one of*

Alice. Enfish, 822 F.3d at 1330. The disclosed technique enabled faster searching and more effective storage of data than previous methods. *Id.* at 1333. The court found the claims directed to “a specific improvement to the way computers operate, embodied in the self-referential table” (*id.* at 1336), and explained that the claims are “not simply directed to *any* form of storing tabular data, but instead are specifically directed to a *self-referential table* for a computer database” that functions differently than conventional databases. *Id.* at 1337.

We find Appellants’ citation to *Enfish* unavailing because claim 1 on Appeal, by itself, does not actually improve virtual computing resource allocations, or improve the operation of a computer database. Instead, the claims on Appeal provide a method that carries out assignment, accounting, and billing functions related to the allocation of computing resources to customers.

Appellants also argue:

The claims also recite far more than generic functions of a computer that are claimed in a merely generic manner. The non-generic limitations include at least:

- determining, using the computing system, a set of selected virtual computing resources from the plurality of virtual computing resources of a first particular provider among the plurality of providers, for a first customer;
- providing the first customer access to the set of selected virtual computing resources during the billing period;
- changing, using the computing system, at least one virtual computing resource assigned to the set of

selected virtual computing resources associated with the first customer during the billing period;

- limiting use of at least one virtual computing resource for a particular group account of the plurality of group accounts in response to the particular group account being debited more than a particular group budget of the plurality of group budgets, wherein the particular group account and the particular group budget correspond to a same group;

There is no evidence of record in the Office Action, about why these activities do not amount to “significantly more” than the abstract idea as framed by the Office. Moreover, the mere presence of some generic computer elements in claims is not enough to disqualify an invention. As the Federal Circuit has held, “recitation of generic computer limitations does not make an otherwise ineligible claim patent-eligible.”

App. Br. 18 (citing *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014)).

Appellants’ reliance on *DDR* (App. Br. 18) is misplaced as the recited claims do not improve the computer, but instead address a business solution to a business problem. In *DDR*, the claims at issue involved, *inter alia*, “web pages displays [with] at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants” (claim 1 of US 7,818,399). The Federal Circuit found the claims in *DDR* to be patent-eligible *under step one* of the *Alice* test because “the claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks.” *DDR Holdings*, 773 F.3d at 1257. Specifically, the Federal Circuit found the claims addressed the “challenge of retaining control over the attention of the customer in the context of the Internet.” *Id.*

at 1258. We find the rejected claims, directed to the abstract idea of allocating, pricing, and billing virtual resources, are dissimilar to *DDR*'s web page with an active link, and the Specification does not support the view that the computer related claim elements are unconventional. *See* Spec. ¶¶ 21, 23, and 76–87.

The patent eligibility inquiry may contain underlying issues of fact. *Mortg. Grader*, 811 F.3d at 1325. In particular, “[t]he question of whether a claim element or combination of elements is well-understood, routine and conventional to a skilled artisan in the relevant field is a question of fact.” *Berkheimer*, 881 F.3d at 1368.

As evidence of the conventional nature of the recited “computing system,” “allocation and pricing system,” and “one or more computing devices” in method claim 1; and the recited “one or more processors,” and “computing system” in non-transitory computer-readable medium claim 14, the Specification discloses:

[0076] For example, FIG. 10 illustrates a computer system upon which one or more embodiments may be implemented. Computer system 1000 includes a bus 1002 or other communication mechanism for communicating information, and a hardware processor 1004 coupled with bus 1002 for processing information. Hardware processor 1004 may be, for example, a general purpose microprocessor.

[0077] Computer system 1000 also includes a main memory 1006, such as a random access memory (RAM) or other dynamic storage device, coupled to bus 1002 for storing information and instructions to be executed by processor 1004. Main memory 1006 also may be used for storing temporary variables or other intermediate information during execution of instructions to be executed by processor 1004. Such instructions, when stored in non-transitory storage media

accessible to processor 1004, render computer system 1000 into a special-purpose machine that is customized to perform the operations specified in the instructions.

[0078] Computer system 1000 further includes a read only memory (ROM) 1008 or other static storage device coupled to bus 1002 for storing static information and instructions for processor 1004. A storage device 1010, such as a magnetic disk, optical disk, or solid-state drive is provided and coupled to bus 1002 for storing information and instructions.

Spec. ¶¶ 76–78.

Thus, because the Specification describes the additional elements in general terms, without describing the particulars, we conclude the claim limitations may be broadly but reasonably construed as reciting conventional computer components and techniques, particularly in light of Appellants’ Specification, as quoted above.²²

The Manual of Patent Examining Procedure, based upon our precedential guidance, provides additional considerations with respect to analysis of the well-understood, routine, and conventional nature of the claimed computer-related components.

Another consideration when determining whether a claim recites significantly more than a judicial exception is whether the additional elements amount to more than a recitation of the words “apply it” (or an equivalent) or are more than mere instructions to implement an abstract idea or other exception on a computer. As explained by the Supreme Court, in order to transform a judicial exception into a patent-eligible application, the additional element or combination of elements must do

²² Claim terms are to be given their broadest reasonable interpretation, as understood by those of ordinary skill in the art and taking into account whatever enlightenment may be had from the Specification. *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997).

“more than simply stat[e] the [judicial exception] while adding the words ‘apply it’”. *Alice Corp. v. CLS Bank*, 573 U.S. ___, 134 S. Ct. 2347, 2357, 110 USPQ2d 1976, 1982-83 (2014) (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 72, 101 USPQ2d 1961, 1965). Thus, for example, claims that amount to nothing more than an instruction to apply the abstract idea using a generic computer do not render an abstract idea eligible. *Alice Corp.*, 134 S. Ct. at 2358, 110 USPQ2d at 1983. *See also* 134 S. Ct. at 2389, 110 USPQ2d at 1984 (warning against a § 101 analysis that turns on “the draftsman’s art”)

In *Alice Corp.*, the claim recited the concept of intermediated settlement as performed by a generic computer. The Court found that the recitation of the computer in the claim amounted to mere instructions to apply the abstract idea on a generic computer. 134 S. Ct. at 2359-60, 110 USPQ2d at 1984. The Supreme Court also discussed this concept in an earlier case, *Gottschalk v. Benson*, 409 U.S. 63, 70, 175 USPQ 673, 676 (1972), where the claim recited a process for converting binary-coded decimal (BCD) numerals into pure binary numbers. The Court found that the claimed process had no substantial practical application except in connection with a computer. *Benson*, 409 U.S. at 71-72, 175 USPQ at 676. The claim simply stated a judicial exception (*e.g.*, law of nature or abstract idea) while effectively adding words that “apply it” in a computer. *Id.*

MPEP § 2106.05(f) (“Mere Instructions To Apply An Exception”) (brackets in original).

With respect to the *Step 2B* analysis, we conclude, similar to *Alice*, the recitation of a method for allocating, pricing, and billing virtual resources that includes the generic computer elements identified above, is simply not enough to transform the patent-ineligible abstract idea here into a patent-eligible invention under *Step 2B*. *See Alice*, 573 U.S. at 221 (“[C]laims,

which merely require generic computer implementation, fail to transform [an] abstract idea into a patent-eligible invention.”).

We conclude the claims fail the *Step 2B* analysis because claim 1, in essence, merely recites various computer-based elements along with no more than mere instructions to implement the identified abstract idea using the computer-based elements.

Therefore, because the claims fail under both the *Step 2A* and *Step 2B* analyses, we sustain the Examiner’s § 101 rejection of independent claims 1 and 14, and grouped claims 2–5, 7–13, 15–18, and 20–26, not argued separately, and which fall therewith. *See Claim Grouping, supra.*

REPLY BRIEF

To the extent Appellants *may* advance new arguments in the Reply Brief (Reply Br. 1–7) not in response to a shift in the Examiner’s position in the Answer, we note arguments raised in a Reply Brief that were not raised in the Appeal Brief or are not responsive to arguments raised in the Examiner’s Answer will not be considered except for good cause (*see* 37 C.F.R. § 41.41(b)(2)), which Appellants have not shown.

CONCLUSION

Under our Revised Guidance, governed by relevant case law, claims 1–5, 7–18, and 20–26, rejected under 35 U.S.C. § 101, are directed to patent-ineligible subject matter, and we sustain the rejection.

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DECISION

We affirm the Examiner's decision rejecting claims 1–5, 7–18, and 20–26.

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). *See* 37 C.F.R. § 41.50(f).

AFFIRMED