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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* XIANG YANG LI and YIGANG CAI

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Appeal 2017-008548  
Application 12/947,928<sup>1</sup>  
Technology Center 3600

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Before LARRY J. HUME, JENNIFER L. McKEOWN, and  
NORMAN H. BEAMER, *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 1–3 and 5–16, which are all claims pending in the application. Appellants have canceled claim 4. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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<sup>1</sup> According to Appellants, the real party in interest is Alcatel-Lucent USA, Incorporated. App. Br. 3.

STATEMENT OF THE CASE<sup>2</sup>

*The Invention*

Appellants' disclosed embodiments and claimed invention relate "generally to the field of communication networks, and, more particularly, to a method and billing system used in charging for communication services, which, in implementation, is expected to lower the cost of implementing a communication network by reducing the number of hardware components required to perform certain rating calculations." Spec. 1, ll. 5–9.

*Exemplary Claim*

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

1. A communication system for assigning a service quota, comprising:
  - a charging trigger function (CTF) to receive a service request associated with a device;
  - an online charging system (OCS) coupled to the CTF and configured to use a processor to:
    - determine subscriber information relating to a subscriber associated with the device;
    - compare the service request with a policy rules database;
    - determine whether reverse rating is to be performed based on the comparison;

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<sup>2</sup> Our decision relies upon Appellants' Appeal Brief ("App. Br.," filed Jan. 17, 2017); Reply Brief ("Reply Br.," filed May 25, 2017); Examiner's Answer ("Ans.," mailed Mar. 28, 2017); Final Office Action ("Final Act.," mailed Oct. 3, 2016); and the original Specification ("Spec.," filed Nov. 17, 2010).

perform reverse rating if it is determined that reverse rating is to be performed; and

assign a dummy service unit quota if it is determined that reverse rating is not to be performed, wherein the dummy service quota sets a limit on an amount of the requested service to be provided.

### *Rejection on Appeal*

Claims 1–3 and 5–16 stand rejected under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter. Final Act. 2.

### CLAIM GROUPING

Based on Appellants' arguments (App. Br. 6–9) and our discretion under 37 C.F.R. § 41.37(c)(1)(iv), we decide the appeal of patent-ineligible subject matter Rejection R1 of claims 1–3 and 5–16 on the basis of representative claim 1.<sup>3</sup>

### ISSUE

Appellants argue (App. Br. 6–9; Reply Br. 2–4) 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:

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<sup>3</sup> "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 governing case law concerning 35 U.S.C. § 101, did the Examiner err in concluding claim 1 is directed to a judicial exception, i.e., an abstract idea, without significantly more, and thus is patent-ineligible under § 101?

#### ANALYSIS

In reaching this decision, we consider all evidence presented and all arguments actually made by Appellants. To the extent Appellants have not advanced separate, substantive arguments for particular claims, or other issues, such arguments are waived. 37 C.F.R. § 41.37(c)(1)(iv).

We disagree with Appellants' arguments with respect to claim 1 and, unless otherwise noted, we incorporate by reference herein and adopt as our own: (1) the findings and reasons set forth by the Examiner in the action from which this appeal is taken, and (2) the reasons and rebuttals set forth in the Examiner's Answer in response to Appellants' arguments. We highlight and address specific findings and arguments regarding claim 1 for emphasis as follows.

#### *Alice Framework*

Section 101 provides that anyone who "invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof" may obtain a patent. 35 U.S.C. § 101. The Supreme Court has repeatedly emphasized that patent protection should not extend to claims that monopolize "the basic tools of scientific and technological work." *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 71 (2012); *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. 208; 134 S. Ct. 2347, 2354

(2014). Accordingly, laws of nature, natural phenomena, and abstract ideas are not patent-eligible subject matter. *Alice Corp.*, 573 U.S. 208; 134 S. Ct. at 2354.

The Supreme Court's two-part *Alice* framework guides us in distinguishing between patent claims that impermissibly claim the "building blocks of human ingenuity" and those that "integrate the building blocks into something more." *Alice Corp.*, 573 U.S. 208; 134 S. Ct. at 2354 (internal quotation marks, citation, and bracketing omitted). First, we "determine whether the claims at issue are directed to [a] patent-ineligible concept[]." *Id.* at 2355. If so, we "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." *Id.* at 2357 (quoting *Mayo*, 566 U.S. at 72, 79). Although the two steps of the *Alice* framework are related, the "Supreme Court's formulation makes clear that the first-stage filter is a meaningful one, sometimes ending the § 101 inquiry." *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016). We note the Supreme Court "has not established a definitive rule to determine what constitutes an 'abstract idea'" for the purposes of step one. *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334 (Fed. Cir. 2016) (citing *Alice*, 573 U.S. 208; 134 S. Ct. at 2357).

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, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1330 (Fed. Cir. 2016). 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.

In *McRO*, the claims were not held to be abstract because they recited a "specific . . . improvement in computer animation" using "unconventional rules that relate[d] sub-sequences of phonemes, timings, and morph weight sets." *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1302–03, 1307–08, 1314–15 (Fed. Cir. 2016). In *McRO*, "the incorporation of the claimed rules, not the use of the computer," improved an existing technological process. *Id.* at 1314.

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).

However, our reviewing court has held claims ineligible as directed to an abstract idea when they merely collect electronic information, display information, or embody mental processes that could be performed by humans. *Elec. Power Grp.*, 830 F.3d at 1353–54 (collecting cases). At the same time, "all inventions at some level embody, use, reflect, rest upon, or

apply laws of nature, natural phenomena, or abstract ideas." *Mayo*, 566 U.S. at 71. Abstract ideas may include, but are not limited to, fundamental economic practices, methods of organizing human activities, an idea of itself, and mathematical formulas or relationships. *Alice*, 573 U.S. 208; 134 S. Ct. at 2355–57. 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 2354 ("[W]e tread carefully in construing this exclusionary principle lest it swallow all of patent law.").

Under the "abstract idea" step we must evaluate "the 'focus of the claimed advance over the prior art' to determine if the claim's 'character as a whole' is directed to excluded subject matter." *Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016) (internal citation omitted). If the claims are not directed to a patent-ineligible concept, the inquiry ends. *See Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253, 1262 (Fed. Cir. 2017). If the concept is directed to a patent-ineligible concept, we proceed to the "inventive concept" step. For that second step 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*, 838 F.3d at 1258 (quoting *Elec. Power Grp.*, 830 F.3d at 1353).

*Alice Step 1 — Abstract Idea*

The Examiner concludes "[t]he claims are directed to a judicial exception (i.e., . . . [an] abstract idea), specifically the abstract idea of billing a customer." Final Act. 2. "The reason that the limitations are considered abstract idea is that evaluating customer data against policy rules and billing

customers accordingly is a well-understood, routine, and conventional activity previously known to the industry." *Id.*

Appellants generally contend, "the [c]laims 1-3 and 5-16 are not directed to a judicial exception of an abstract idea because the Examiner fails to establish that the Claims are directed to a concept that the court have [sic] identified as an abstract idea." App. Br. 6.

More specifically, Appellants argue:

In the Final Rejection, the Examiner suggests that the Claims are directed to an abstract idea of billing a customer, which is similar to the concept identified by the court in *Alstom*<sup>[4]</sup> as abstract. The Claims, however, are not directed to such a broad concept or even to a method as suggested by the Examiner. Instead, the Claims are directed to an efficient system for assigning a service quota by selectively performing a reverse rating and assigning a dummy service unit quota when a reverse rating is not performed. Moreover, the Claims are different the claims in *Alstom*, which are directed to a method for detecting events on an interconnected electric power grid in real time over a wide area and automatically analyzing those events. As the Claims of the current application and those in *Alstom* are not directed to a similar concept, the Examiner has failed to set forth that the Claims are directed to a concept that the courts have identified as an abstract idea.

App. Br. 6–7.

In addition, Appellants contend:

When a claim is directed to an improvement in computer-related technology, the claim does not recite a concept similar to previously identified abstract ideas . . . Here the Claims are directed to an improvement in computer-related technology

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<sup>4</sup> Appellants refer to *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, (Fed. Cir. 2016) as "*Alstom*."

because the specification teaches how the claimed invention improves the functioning of the computer itself.

App. Br. 7.

In response, the Examiner states:

"[T]he Examiner did provide evidence that the claims are directed to a concept that the Courts have identified as an abstract idea [by citing *Electric Power Group*].

Furthermore, the Courts consider the determination of whether a claim is eligible (which involves identifying whether an exception such as an abstract idea is being claimed) to be a question of law.

Ans. 2.

Appellants' suggestion of the absence of evidence supporting the § 101 rejection also does not persuade us of Examiner error. App. Br. 6. "Patent eligibility under § 101 presents an issue of law." *Accenture Glob. Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1340 (Fed. Cir. 2013). There is no requirement that an examiner cite evidentiary support to conclude that a claim is directed to a patent-ineligible concept, such as an abstract idea.

The courts consider the determination of whether a claim is eligible (which involves identifying whether an exception such as an abstract idea is being claimed) to be a question of law. *Rapid Litig. Mgmt. v. CellzDirect*, 827 F.3d 1042, 1047, 119 USPQ2d 1370, 1372 (Fed. Cir. 2016); *OIP Techs. v. Amazon.com*, 788 F.3d 1359, 1362, 115 USPQ2d 1090, 1092 (Fed. Cir. 2015); *DDR Holdings v. Hotels.com*, 773 F.3d 1245, 1255, 113 USPQ2d 1097, 1104 (Fed. Cir. 2014); *In re Roslin Institute (Edinburgh)*, 750 F.3d 1333, 1335, 110 USPQ2d 1668, 1670 (Fed. Cir. 2014); *In re Bilski*, 545 F.3d 943, 951, 88 USPQ2d 1385, 1388 (Fed. Cir. 2008) (*en banc*), *aff'd by Bilski v. Kappos*, 561 U.S. 593, 95 USPQ2d 1001 (2010). Thus, the

court does not require "evidence" that a claimed concept is a judicial exception, and generally decides the legal conclusion of eligibility without resolving any factual issues. *FairWarning IP, LLC v. Iatric Sys.*, 839 F.3d 1089, 1097, 120 USPQ2d 1293, 1298 (Fed. Cir. 2016) (citing *Genetic Techs. Ltd. v. Merial LLC*, 818 F.3d 1369, 1373, 118 USPQ2d 1541, 1544 (Fed. Cir. 2016)); *OIP Techs.*, 788 F.3d at 1362, 115 USPQ2d at 1092; *Content Extraction & Transmission LLC v. Wells Fargo Bank, N.A.*, 776 F.3d 1343, 1349, 113 USPQ2d 1354, 1359 (Fed. Cir. 2014).

MPEP § 2106.07(a) (III).

Under the "abstract idea" step we must evaluate "the 'focus of the claimed advance over the prior art' to determine if the claim's 'character as a whole' is directed to excluded subject matter." *Affinity Labs*, 838 F.3d at 1257 (citation omitted).

Turning to the claimed invention, claim 1 recites: "[a] communication system for assigning a service quota." Claim 1 (preamble). Limitations in system claim 1 also require elements including (a) "a charging trigger function (CTF) to receive a service request associated with a device;" and (b) "an online charging system (OCS) coupled to the CTF."

The OCS is recited as using "a processor to" carry out functions including "determine subscriber information," "compare the service request with a policy rules database;" "determine whether reverse rating is to be performed based on the comparison;" "perform reverse rating if it is determined that reverse rating is to be performed;" and "assign a dummy service unit quota if it is determined that reverse rating is not to be performed, wherein the dummy service quota sets a limit on an amount of the requested service to be provided." Claim 1.

Our reviewing courts have often identified abstract ideas by referring to earlier precedent, e.g., by comparing a claimed concept to the concepts previously identified as abstract ideas by the courts. *Amdocs (Israel), Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1294 (Fed. Cir. 2016); *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334 (Fed. Cir. 2016). For example, in *Alice*, the Supreme Court identified the claimed systems and methods as describing the concept of intermediated settlement, and then compared this concept to the risk hedging concept identified as an abstract idea in *Bilski*. Because this comparison revealed "no meaningful distinction between the concept of risk hedging in *Bilski* and the concept of intermediated settlement at issue here", the Court concluded that the concept of intermediated settlement was an abstract idea. *Alice*, 573 U.S. 208; 134 S. Ct. at 2356–57. Similarly, the Federal Circuit in *Amdocs* compared the claims at issue with "eligible and ineligible claims of a similar nature from past cases" as part of its eligibility analysis. *Amdocs*, 841 F.3d at 1295–1300.

Under step one, we agree with the Examiner that the invention claimed in independent claim 1 is directed to an abstract idea, i.e., "billing a customer." Final Act. 2. We further conclude the claims are directed to the abstract idea of billing a customer in response to a service request by comparing the request with a policy rules database and assigning a service quota. We further conclude this may be considered a fundamental economic practice, e.g., a concept relating to agreements between people or performance of financial transactions or, alternatively, it may be considered a method of organizing human activity, i.e., a concept relating to managing relationships or transactions between people, or satisfying or avoiding a legal obligation.

As the Specification discloses, "[t]he present invention relates generally to the field of communication networks, and, more particularly, to a method and billing system used in charging for communication services, which, in implementation, is expected to lower the cost of implementing a communication network by reducing the number of hardware components required to perform certain rating calculations." Spec. 1, ll. 5–9.<sup>5</sup> We find this type of activity, i.e., choosing how to bill a customer, for example, includes longstanding conduct that existed well before the advent of computers and the Internet, and could be carried out by a human with pen and paper. *See CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1375 (Fed. Cir. 2011) ("That purely mental processes can be unpatentable,

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<sup>5</sup> *See also* Spec. 25 ("Abstract"):

A method and system for charging for services delivered by a communication network. After receiving a request for service in the network, usually initiated by a UE, an online charging system retrieves subscriber information, typically including subscriber account balance information, and compares the retrieved subscriber information with reverse rating policy rules to determine if reverse rating is to be performed prior to responding to the request for service. If so, the online charging system is directed to perform the reverse rating. If not, the service is provided without performing reverse rating. A dummy quota may be generated if reverse rating is not performed. In one embodiment, reverse rating may be performed after a service session was allowed to commence without reverse-rating if the session consumes an amount of service reaching a threshold determined after the operation of determining whether reverse rating is to be performed.

even when performed by a computer, was precisely the holding of the Supreme Court in *Gottschalk v. Benson*.").<sup>6</sup>

Our reviewing court has previously held other patent claims ineligible for reciting similar abstract concepts. For example, while the Supreme Court has enhanced the § 101 analysis since *CyberSource* in cases like *Mayo* and *Alice*, the Federal Circuit continues to "treat[ ] analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, as essentially mental processes within the abstract-idea category." *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1146–47 (Fed. Cir. 2016) (alteration in original) (quoting *Elec. Power Grp.*, 830 F.3d at 1354).

In addition, our reviewing court has concluded that abstract ideas include the concepts of collecting data, recognizing certain data within the collected data set, and storing the data in memory. *Content Extraction & Transmission LLC v. Wells Fargo Bank, N.A.*, 776 F.3d 1343, 1347 (Fed. Cir. 2014). Additionally, the collection of information and analysis of information (e.g., recognizing certain data within the dataset) are also abstract ideas. *Elec. Power*, 830 F.3d at 1353–54 (collecting information and "analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, [are] essentially mental processes within the abstract-idea category"). Similarly, "collecting, displaying, and manipulating data" is an abstract idea. *Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1340 (Fed. Cir. 2017). Also,

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<sup>6</sup> *CyberSource* further guides that "a method that can be performed by human thought alone is merely an abstract idea and is not patent-eligible under § 101." *CyberSource*, 654 F.3d at 1373.

collecting and comparing known information has been determined to be an abstract idea. *Classen Immunotherapies, Inc. v. Biogen IDEC*, 659 F.3d 1057, 1067 (Fed. Cir. 2011) ("Claim 1 of the #283 patent states the idea of collecting and comparing known information"). Further, a process that employs mathematical algorithms to manipulate existing information to generate additional information is abstract. *Digitech Image Techs., LLC v. Elec. for Imaging, Inc.*, 758 F.3d 1344, 1351 (Fed. Cir. 2014). Also, more recently, our reviewing court has also concluded that acts of parsing, comparing, storing, and editing data are abstract ideas. *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1367 (Fed. Cir. 2018).

Appellants also suggest claim 1 is patent-eligible because its practice does not preempt practice by others. App. Br. 8 ("[T]he claims as a whole are clearly not attempting to tie up the purported abstract idea of 'billing a customer.' The eligibility of the Claims is thus self-evident."). We agree with the Examiner's response, which we incorporate herein by reference. *Ans. 5 and see buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014) (collecting cases); *Accenture Global Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1345 (Fed. Cir. 2013); *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015) ("While preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility").

Further, in *Intellectual Ventures I*, similar in key respects to the claims before us on appeal, tailoring content based on information about the user has also been determined as being directed to an abstract idea and, thus, patent-ineligible.

At step one of the *Alice* framework, it is often useful to determine the breadth of the claims in order to determine whether the claims extend to cover a "fundamental . . . practice long prevalent in our system . . . ." *Alice*, [573 U.S. 208] 134 S. Ct. at 2356. As noted, the claim relates to customizing information based on (1) information known about the user and (2) navigation data . . . . [T]ailoring is "a fundamental . . . practice long prevalent in our system . . . ." *Id.* There is no dispute that newspaper inserts had often been tailored based on information known about the customer—for example, a newspaper might advertise based on the customer's location. Providing this minimal tailoring—e.g., providing different newspaper inserts based upon the location of the individual—is an abstract idea.

*Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1369 (Fed. Cir. 2015).

Appellants argue the claims are an improvement in computer-related technology, similar to those held patent-eligible in *McRO*. App. Br. 7(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*, 134 S. Ct. at 2358 (explaining that "the claims in *Diehr* were patent eligible because they improved an existing technological process"). Rather, claim 1 concerns a "communication system for assigning a service quota." In

addition, Appellants do not direct us to any *evidence* that the claimed data request, storage, and generating steps correspond to unconventional rules.

Therefore, in agreement with the Examiner, we conclude claim 1 involves nothing more than identifying, collecting, storing, comparing, and generating data, without any particular inventive technology — an abstract idea. *See Elec. Power Grp.*, 830 F.3d at 1354.<sup>7</sup>

Accordingly, on this record, and under step one of *Alice*, we agree with the Examiner's conclusion the claims are directed to an abstract idea.

*Alice Step 2—Inventive Concept*

If the claims are directed to a patent-ineligible concept, as we conclude above, we proceed to the "inventive concept" step. For that step 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*, 838 F.3d at 1258 (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. *Ulramercial, 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. 208; 134 S. Ct. at 2357. Those "additional

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<sup>7</sup> Merely automating previously manual processing by using computers does not qualify as an eligibility-rejection-defeating improvement. *Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044 (Fed. Cir. 2017).

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 idea;<sup>8</sup> mere instructions to implement an abstract idea on a computer;<sup>9</sup> 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.<sup>10</sup>

Evaluating representative claim 1 under step 2 of the *Alice* analysis, we agree with the Examiner that it lacks an inventive concept that transforms the abstract idea of billing a customer by, for example, assigning a service quota, into a patent-eligible application of that abstract idea. *See* Ans. 6.<sup>11</sup>

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<sup>8</sup> *Alice*, 573 U.S. 208; 134 S. Ct. at 2357–58.

<sup>9</sup> *Alice*, 573 U.S. 208; 134 S. Ct. at 2357, *e.g.*, simply implementing a mathematical principle on a physical machine, namely a computer (citing *Mayo*, 566 U.S. at 84–85).

<sup>10</sup> *Alice*, 573 U.S. 208; 134 S. Ct. at 2359, *e.g.*, using a computer to obtain data, adjust account balances, and issue automated instructions.

<sup>11</sup> The Examiner concludes:

[S]imply utilizing a generic computer system to assign/classify information and to perform operations on the information faster and more efficiently is not enough to transform a patent ineligible claim into a patent-eligible invention. . . . In order for the addition of a machine to impose a meaningful limit on the scope of a claim, it must play a significant part in permitting the claimed method to be performed, rather than function solely as an obvious mechanism for permitting a solution to be achieved more quickly.

The Examiner concludes, "[a]dditional elements include comparing data using a processor, and assigning a dummy service unit quota if reverse rating is not to be performed. The processor, as claimed, performs generic computer functions. Furthermore, assigning a value to set a limit on an amount of service requested does not significantly add more to the abstract idea since it is usage control for billing." Final Act. 2.

We note 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*, 881 F.3d at 1368.

As evidence of the conventional nature of the claimed network components and processes, we note Appellants' Specification at page 14, lines 11–23, page 14, line 28 through page 15, line 12. For example:

OCS 300 includes a network interface 305 for communicating with other network components such as a CTF or other service element. Also present is a processor 310 for controlling the 15 components of OCS 300 and performing the process of the present invention according to instructions stored in a memory device within or accessible to OCS 300. Memory device 315 is

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Here there is no improvement to the communication network since sending and receiving data is a generic function of a communication network. The Courts have already recognized as generic computer functions: receiving, processing, and storing data, electronic recordkeeping, automating mental tasks, and receiving or transmitting data over a network, e.g., using the Internet to gather data.

Ans. 6.

present in the OCS 300 in this embodiment. Illustrated separately is a subscriber information module 320, where subscriber information such as subscriber accounts balances may be store. A reverse rating determination module 20 325 is present and also depicted separately, and its operation according on one embodiment is described above. This and the other functions of the present inventions are implemented in hardware or software stored in (non-transitory) storage media, or both.

Spec. 14, ll. 12–23.

We agree with the Examiner that the claim limitations may be broadly but reasonably construed as reciting conventional computer components and techniques, particularly in light of Appellant's Specification, as quoted above.<sup>12</sup>

With respect to the Step 2 analysis, we agree with the Examiner because, as in *Alice*, the recitation of either a "communication system for assigning a service quota" using a "charging trigger function" and an "online charging system" that uses a processor to carry out functions that may be carried out in the human mind or by pen and paper (claim 1) is simply not enough to transform the patent-ineligible abstract idea here into a patent-eligible invention. *See Alice*, 573 U.S. 208; 134 S. Ct. at 2357 ("[C]laims,

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<sup>12</sup> 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).

which merely require generic computer implementation, fail to transform [an] abstract idea into a patent-eligible invention."').<sup>13</sup>

Accordingly, based upon the findings above, on this record, we are not persuaded of error in the Examiner's conclusion that the appealed claims are directed to patent-ineligible subject matter. Therefore, we sustain the Examiner's § 101 rejection of independent claim 1, and grouped claims 2, 3 and 5–16, 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. 2–4) 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

The Examiner did not err with respect to patent-ineligible subject matter Rejection R1 of claims 1–3 and 5–16 under 35 U.S.C. § 101, and we sustain the rejection.

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<sup>13</sup> Appellants merely allege:

Here, when the [c]laims are considered as a whole, the limitations of the Claims as an ordered combination amount to significantly more than an abstract idea because they significantly reduce the amounts of resources and expenses necessary in operating a communication network and also prevent potential billing issues in the network.

Reply Br. 4.

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DECISION

We affirm the Examiner's decision rejecting claims 1–3 and 5–16.

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