UNITED STATES PATENT AND TRADEMARK OFFICE

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SHERIDAN ROSS P.C.
1560 BROADWAY, SUITE 1200
DENVER, CO 80202

EXAMINER
PAULSON, SHEETAL R.

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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 ROBERT C. STEINER

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Appeal 2018-006385
Application 13/836,723
Technology Center 3600

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Before CYNTHIA L. MURPHY, BRUCE T. WIEDER, and
AMEE A. SHAH, *Administrative Patent Judges*.

MURPHY, *Administrative Patent Judge*.

DECISION ON APPEAL

The Appellant[1] appeals the Examiner's rejections of claims 1–20
under 35 U.S.C. § 101 (Rejection I) and 35 U.S.C. § 103 (Rejection II).
We sustain both of these rejections. Thus, we AFFIRM.[2]

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[1] The Appellant is the "applicant" as defined by 37 C.F.R. § 1.42 (e.g., "the
inventor or all of the joint inventors"). "Avaya Inc. is the owner of the
patent application and the real party in interest." (Appeal Br. 2.)

[2] We have jurisdiction under 35 U.S.C. §§ 6(b) and 134(a).

BACKGROUND

The Appellant provides a method involving a "contact center[]" that "respond[s] to customer requests to provide sales, customer service, and technical support." (Spec. ¶ 2.) Thus, a contact center is a commercial entity that commercially interacts with customers.

"[O]bjectives" are "defined by the contact center" and an administrator (i.e., a person) monitors the "operational health" of the contact center "based on" these objectives. (Spec. ¶ 3.) As the contact center is a commercial entity, these objectives would have commercial connotations. For example, these objectives could be "best practices" such as "the business logic that will work best for the contact center." (Zhakov ¶ 1.)[3] Part of the administrator's job is to make sure that the contact center's commercial interaction with customers is aligned with best business practices.

When a customer calls a contact center, this contact will "flow in the contact center." (Spec. ¶ 6.) More particularly, the customer's call will follow a message-flow path in which certain events occur in a certain sequence. (*See id.*) As the administrator of the contact center is aware of the "objectives" of the contact center, he/she can identify message-flow paths that are consistent with these objectives (i.e., message-flow paths aligned with the contact center's best business practices). (*See id.* ¶ 32.) Thus, if these identified message-flow paths are compared to the message-flow path of a customer's call, this comparison would give the administrator insight into "[h]ow well the contact center is running." (*Id.*

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[3] US 2014/0140494 A1, published May 22, 2014.

2

¶ 4.) More particularly, this comparison would give the administrator insight into whether the contact center's commercial interaction with this customer is aligned with its best business practices.

For example, the administrator could identify the three-message flow paths, diagrammed in Figure 4 below, as message-flow paths aligned with the contact center's best business practices.
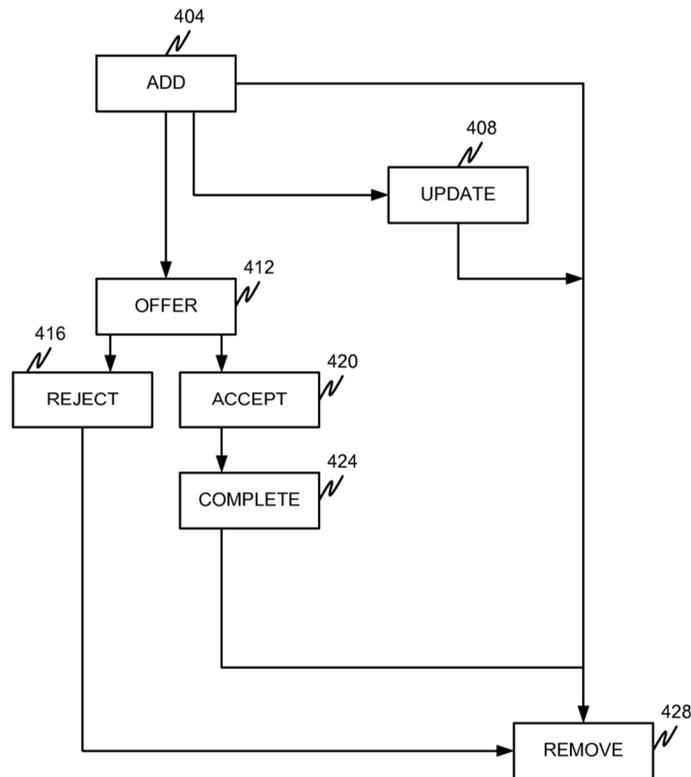
In a first message-flow path, a customer calls the contact center, a work item is added to the contact center's to-do list (event 404), the customer's information is updated (event 408), and then the work item is removed from the to do list (event 428). (*See* Spec. ¶ 42.) In a second message flow path, a customer calls the contact center, a work item is added to the contact center's to-do list (event 404), the customer is offered the opportunity to speak to an employee of the contact center (event 412), the

customer rejects this offer (event 416), and then work item is removed from the to-do list (event 428). (*See id.* ¶ 43.) In the third message-flow path, the customer calls the contact center and a work item is added (event 404), the customer is offered the opportunity to speak to an employee of the contact center (event 412), the customer accepts this offer (event 420), the customer speaks to this employee (event 424), and then the work item is removed from the to-do list (event 428). (*See id.*)

If a call received by the contact center follows one of the three message-flow paths diagrammed in Figure 4, this is symptomatic of the contact center commercially interacting with this customer in a manner aligned with its best business practices. (*See* Spec. ¶ 8.)

If a call received by the contact center does not follow one of the three message-flow paths diagrammed in Figure 4, this is symptomatic of the contact center commercially interacting with this customer in an abnormal manner that might not be aligned with its best business practices. (*See* Spec. ¶ 8.) For example, if the customer is offered the opportunity to speak to an employee of the contact center (event 412), and the customer accepts this offer (event 420), the next event should be the customer speaking to an employee to complete the work item (event 424). But if the next event is a call termination (e.g., the customer hangs up because he/she has been waiting too long to speak to an employee), the contact center may not be commercially interacting with this customer in a manner aligned with its best business practices.[4]

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[4] This abnormality could be pre-detected by a customer's wait time between accepting the offer to speak to an employee (event 420) and speaking to an employee (event 424). For example, if the customer has already waited

The Appellant's method comprises the step of "building a grammar that defines a series of events that can occur in the computation system as well as an expected order of the series of events." (Spec. ¶ 10.)[5] In other words, with the Appellant's method, a computer is programmed to contain information corresponding to the three message-flow paths diagrammed in Figure 4. And this "programming of the grammar" may be done "by a human administrator." (*Id.* ¶ 32.)

ILLUSTRATIVE CLAIM
(with bracketed text inserted)

1. A method, comprising:

[(a)] building, by a microprocessor, a tree-structured grammar that defines possible message flows associated with a plurality of events that can occur in a contact center as well as an expected order of the plurality of events;

[(b)] monitoring, by the microprocessor, message flows in the contact center by a continuous comparison of each of the monitored message flows against the possible message flows; and

[(c)] based on the continuous comparison of the monitored message flows with the possible message flows, determining, by the microprocessor, that a message flow violation has occurred in the contact center, the message flow violation being associated with an abnormality in the monitored message flows.

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several minutes to speak to an employee, the administrator knows that the customer is likely to terminate the call rather than continue waiting.

[5] "As used herein, the term 'grammar' refers to a defined order of elements (e.g., operations, steps, associations, dialogs, requests, responses, and combinations thereof)." (Spec. ¶ 11.)

REJECTION I

The Examiner rejects claims 1–20 under 35 U.S.C. § 101 as directed to a judicial exception without significantly more. (Final Action 2.) We sustain this rejection.

Judicial Exceptions

The Patent Act defines subject matter eligible for patent protection as "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." (35 U.S.C. § 101. Yet the Supreme Court has "long held" that this provision contains an important implicit exception: "[l]aws of nature, natural phenomena, and abstract ideas are not patentable." (*Ass'n for Molecular Pathology* v. *Myriad Genetics, Inc.*, 569 U. S. 576, 589 (2013).) These three concerns are "judicially created exceptions to § 101," or more concisely, "judicial exceptions." (*McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1311 (Fed. Cir. 2016).) Thus, an "abstract idea" is a judicial exception to subject matter (e.g., a process, a machine, or a system) that would otherwise be deemed patent eligible under 35 U.S.C. § 101.

The Alice Test

In *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208 (2014), the Supreme Court provided a two-step test to detect when an attempt is being made to patent an abstract idea in isolation. (*Id.* at 217–18.) In *Alice* step one, a determination is made as to whether the claim at issue is "directed to" an abstract idea. (*Id.* at 218.) When doing *Alice* step one, attention can be given to whether an abstract idea recited in the claim has been integrated into a practical application. (*See id.* at 217.) While a judicial exception (e.g., an abstract idea) cannot be patented, "an *application*" of a judicial

6

exception "to a known structure or process may well be deserving of patent protection." (*Diamond v. Diehr*, 450 U.S. 175, 187 (1981); *see also Bilski v. Kappos*, 561 U.S. 593 (2010).)

If the claim at issue is "directed to" an abstract idea, *Alice* step two must be performed. (*See Alice*, 573 U.S. at 217–18.) In the second step of the *Alice* test, a determination is made as to whether "additional elements" in the claim, both individually and as an ordered combination, contribute "significantly more" than the abstract idea. (*Alice*, 573 U.S. at 217–18.) When making this determination, attention is given to whether additional elements, and any ordered combination thereof, are "well-understood," "routine," or "conventional." (*Id.* at 225.)

The 2019 Guidance

The 2019 Revised Patent Subject Matter Eligibility Guidance ("2019 § 101 Guidance") provides us with specific steps for discerning whether a claim passes the *Alice* test for patent eligibility. (*See* 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019).) These steps are "[i]n accordance with judicial precedent" and consist of a two-pronged Step 2A and a Step 2B. (*Id.* at 52.)

Analysis

In the first prong of Step 2A (Prong One), we determine whether the claim "recites" an abstract idea. (2019 § 101 Guidance, 84 Fed. Reg. at 54.) The Guidance "extracts and synthesizes key concepts identified by the courts as abstract ideas," and these concepts include "[c]ertain methods of organizing human activity," and, more particularly "commercial or legal

interactions." (*Id.* at 52.) For example, a commercial entity's interaction with a customer for commercial reasons constitutes an abstract idea.[6]

Independent claim 1 recites a method comprising steps (a)–(c) involving a "contact center" and "message flows in the contact center." (Appeal Br., Claims App.) As discussed above, a contact center "respond[s] to customer requests to provide sales, customer service, and technical support." (Spec. ¶ 2.) Thus, a contact center is a commercial entity that commercially interacts with customers for commercial reasons.

Step (a) recites defining "possible message flows associated with a plurality of events that can occur in a contact center as well as an expected order of the plurality of events." (Appeal Br., Claims App.) Thus, step (a) sets forth defining message-flow paths (e.g., the three message-flow paths diagrammed in Figure 4) that are aligned with the contact center's best business practices. The administrator (i.e., a person) of a commercial entity is aware of its best business practices, and part of his/her job is recognizing which operational procedures are aligned with these best business practices.

Step (b) recites monitoring "message flows in the contact center by a continuous comparison of each of the monitored message flows against the possible message flows." (Appeal Br., Claims App.) Thus, step (b) sets forth comparing the flow-message paths defined in step (a) (e.g., the three message-flow paths diagrammed in Figure 4) with the message-flow path of

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[6] In *Inventor Holdings, LLC v. Bed, Bath & Beyond, Inc.* 876 F.3d 1372, 1378 (Fed. Cir. 2017), a claim reciting a merchant's interaction with a customer for item-payment reasons was held to recite an abstract idea; and in *Ultramercial, Inc. v. Hulu, LLC,* 772 F.3d 709, 715 (Fed. Cir. 2014), a claim reciting a content-sponsoring entity's interaction with a consumer for advertising reasons was held to recite an abstract idea.

a customer's call. If the customer's call follows one of the identified message-flow paths (e.g., it follows one of the three message-flow paths diagrammed in Figure 4), the administrator knows that this is symptomatic of the contact center commercially interacting with this customer in a manner aligned with its best business practices.

Step (c) recites determining, based on the comparison done in step (b), "that a message flow violation has occurred in the contact center" which is "associated with an abnormality in the monitored message flows." (Appeal Br., Claims App.) Thus, step (c) sets forth that, if the customer's call does not follow any of the message-flow paths defined in step (a) (e.g., it does not follow any of the three message-flow paths diagrammed in Figure 4), the administrator knows that this is symptomatic of the contact center commercially interacting with this customer in an abnormal manner (which might not align with its best business practices).

Consequently, independent claim 1 recites steps done by the administrator of a commercial entity to make sure that the entity's commercial interaction with customers is aligned with its best business practices. A commercial interaction is a certain method of organizing human activity that constitutes an abstract idea. (*See* 2019 § 101 Guidance, 84 Fed. Reg. at 52.)

Thus, independent claim 1 recites an abstract idea under Prong One of Step 2A of the 2019 § 101 Guidance, and so we proceed to Prong Two of Step 2A of the Guidance.

In the second prong of Step 2A (Prong Two), we determine "whether the claim as a whole integrates the recited judicial exception into a practical

application of the exception." (2019 § 101 Guidance, 84 Fed. Reg. at 54.)[7] In doing this determination, we identify "whether there are any additional elements in the claim beyond the abstract idea," and we evaluate "those additional elements individually and in combination to determine whether they integrate the exception into a practical application." (*Id.* at 54–55.)

Independent claim 1 requires "a microprocessor" to be involved in the performance of steps (a)–(c). (Appeal Br., Claims App.) When an additional element in a claim is a "computer," the relevant question is not whether the claim requires the computer to accomplish a recited function. (*Alice*, 573 U.S. at 223.) Rather, "the relevant question" is whether the claim does more than simply "instruct the practitioner to implement the abstract idea" on a computer. (*Id.* at 225.) The mere recitation of a computer in the claim, and/or words simply saying "apply" the abstract idea "with a computer," will not transform the abstract idea into a patent-eligible invention. (*Id.* at 223.) In short, the sheer introduction of a computer into the claim is not enough to "impart patent eligibility." (*Id.*)

More specifically, independent claim 1 requires the microprocessor to build "a tree-structured grammar" that defines the message-flow paths recited in step (a). (Appeal Br., Claims App.) Thus, claim 1 merely requires a computer to be somehow programmed to define message-flow paths (e.g., the three message-flow paths diagrammed in Figure 4) identified by an

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[7] "A claim that integrates a judicial exception into a practical application will apply, rely on, or use the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception." (2019 § 101 Guidance, 84 Fed. Reg. at 53.)

administrator as aligned with the contact center's best business practices. And this "programming of the grammar" may be done "by [the] human administrator." (Spec. ¶ 32.)

Independent claim 1 requires the monitoring recited in step (b), and the determining recited in step (c), to be done "by the microprocessor." (Appeal Br., Claims App.) Thus, claim 1 merely requires a computer to somehow assess whether the message-flow path of a customer's call is following a defined message-flow path (e.g., one of the three flow-message paths diagrammed in Figure 4), as this comparison will show whether the contact center is commercially interacting with a customer in a desired or abnormal manner.

Thus, the recital of a "microprocessor" and "grammar" in independent claim 1 simply instruct a practitioner to use a computer to implement steps done by a commercial entity to make sure that its commercial interaction with customers is aligned with best business practices.

Consequently, the microprocessor and the grammar recited in independent claim 1 do, not individually, integrate the abstract idea into a practical application. But, sometimes, "it is the combination of elements that provide the practical application." (2019 § 101 Guidance, 84 Fed. Reg. at 55.) As such, we must give "careful consideration" to how computer components are "used or arranged in the claim as a whole." (*Id.*)

Here, however, independent claim 1 does not require any particular relationship between the microprocessor and the grammar, other than perhaps the microprocessor being programmed (e.g., by a human administrator) to build this grammar. And, claim 1 does not require the microprocessor to coordinate with other computer components, and thus

cannot require the microprocessor to reside within a particular arrangement of coordinating computer components.

Consequently, independent claim 1 does not integrate the recited abstract idea (i.e., a commercial entity making sure that its commercial interactions with customers are aligned with its best business practices) into a practical application under Prong Two of Step 2A, and so we proceed to Step 2B.

In Step 2B, we evaluate whether the additional elements recited in the claim, individually or in combination, amount to "significantly more" than the abstract idea itself. (2019 § 101 Guidance, 84 Fed. Reg. at 56.) If the additional elements consist of a conventional arrangement of well understood, routine, conventional computer components, they will not amount to significantly more, and the claim fails the *Alice* test for patent eligibility. (*Id.*)

Here, the Specification conveys that the steps (a)–(c) are performed by a "health monitoring module" that apparently encompasses the microprocessor and the grammar-building software. (Spec. ¶ 32.) And this module can be "any known" hardware, software, firmware, artificial intelligence, fuzzy logic, or combination of hardware and software" that is "capable of performing the functionality" associated with this module. (*Id.* ¶ 13.) Moreover, as mentioned above, claim 1 does not require the microprocessor to coordinate with other computer components.[8]

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[8] Even if claim 1 did require the microprocessor to communicate with the administrator and/or customers, the Specification states that the associated computer components could be conventional; and that this communication could be accomplished via "any type of known communication medium or

12

Consequently, claim 1's additional elements, when considered individually, and when considered as an ordered combination, do not add significantly more to the abstract idea.

Thus, we agree with the Examiner that independent claim 1 does not pass the *Alice* test for patent eligibility.

The Appellant's Arguments

The Appellant advances arguments premised upon independent claim 1 not being directed to an abstract idea, but rather to "a patent eligible improvement, e.g., an improvement to *computer-related technology*." (Appeal Br. 10.) And the Appellant cites *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016), *Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253 (Fed. Cir. 2017), and *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299 (Fed. Cir. 2016) to support these arguments. (*Id.*)

In *Enfish*, the problem solved by the invention stemmed from the shortcomings of prior art computer databases due to their attendant "logic models." (*Enfish*, 822 F.3d at 1330.)[9] With the prior art models, "extensive modeling and configuration of the various tables and relationships [among the tables]" needed to be done "in advance of launching the database." (*Id.* at 1333.) And subsequent data entry had to conform to this predefined structure (*see id.* at 1337), with each data "entity" being entered into "a

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collection of communication media and may use any type of protocols to transport messages between endpoints." (Spec. ¶ 22.)

[9] "A logical model is a model of data for a computer database explaining how the various elements of information are related to one another." (*Enfish*, 822 F.3d at 1330.)

separate table" (*id*. at 1330). With the *Enfish* invention, "all data entities" could be entered into a "single table." (*Id.*) This improvement created a "self-referential" database that, among other things, could be "configured on the fly." (*Id.* at 1333.)

In *Visual Memory*, the problem solved by the invention stemmed from the shortcomings of prior art computer "memory systems." (*Visual Memory*, 867 F.3d at 1255.) Specifically, "[t]hese prior art memory systems lacked versatility because they were designed and optimized based on the specific type of processor." (*Id.*) And, inasmuch as "prior art memory systems possessed the flexibility to operate with multiple different processors, this one-size-fits-all approach frequently caused a tradeoff in processor performance." (*Id.* at 1259.) With the *Visual Memory* system, "a programmable operational characteristic" determined "a type of data stored by said cache." (*Id.* at 1257.) This improvement allowed the same memory system to be used with different types of processors without a compromise in processor performance. (*Id.* at 1259.)

Here, the Appellant is not trying to cure a shortcoming in existing computer technology. The Appellant does not contend that it was necessary to develop innovative computer hardware/software in order to perform the steps recited in independent claim 1. For example, the Appellant does not contend that known database logic models, memory systems, and/or microprocessors were incapable of building a grammar and analyzing message-flow paths based on this grammar. Indeed, with the Appellant's invention, the "module" responsible for the grammar-building, monitoring, comparing, and determining steps can be "any known" hardware, software, or combination thereof." (Spec. ¶ 13.)

The Appellant seems to be saying that it "improves" computer technology because independent claim 1 recites "features that can increase the speed at which message flow violations occur in a contact center." (Appeal Br. 8, *see also* Reply Br. 2–3.) Insofar as the Appellant is contending that a computer can compare message-flow paths faster than a human administrator (and therefore detect abnormal message-flow paths more quickly), we do not necessarily disagree with this contention. However, using a computer to perform a task "more quickly or more accurately" is not, in and of itself, a ticket into patent-eligible territory. (*OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1363 (Fed. Cir. 2015).)

The Appellant also contends that its invention can "collect and correlate information in real-time to catch abnormal or unexpected operations <u>prior to a fault</u>, and respond to the abnormal or unexpected operations <u>quickly and efficiently</u>, thereby preserving resources." (Reply Br. 4.) However, independent claim 1 only requires a determination (based on the continuous comparison) that "a message flow violation has occurred" (Appeal Br., Claims App.); it does not require the message flow violation to be detected before it occurs.[10] And claim 1 does not require any response

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[10] Dependent claim 4 (not separately argued) sets forth "a pre-event notification" that is "based on the detected at least one of the monitored message flow" which is "between two expected events in the plurality of events," and dependent claim 7 (not separately argued) sets forth the identification of a "message flow violation" by "detecting a pattern before the abnormality associated with the message flow violation occurs." (Appeal Br., Claims App.) We note that an administrator can pre-detect a potential problem by, for example, a customer's wait time between sequential events. For example, if the customer has already waited several minutes to speak to an employee, the administrator knows that the contact

15

once it has been determined that a message flow violation has occurred, much less a quick, efficient, and/or resource-preserving response.

We appreciate that, in a typical contact center, customer calls are routed (i.e., message-flow paths are controlled) by computerized call-routing technology. (*See* Spec. ¶ 2.) And claim 1 may indeed address commercial interactions "existing in the realm of [such] computation systems." (Final Action 11.) However, the claim does not "recite an improvement" that cures a technical shortcoming in computerized call routing. (*Id.*) The claimed method merely allows an administrator to more quickly and efficiently evaluate whether the contact center is performing in a manner aligned with its best business practices. Even if claim 1 links steps (a)–(c) to the technological environment of a computerized contact center, this does not render it any less abstract. (*See* 2019 § 101 Guidance, 84 Fed. Reg.at 55.)[11]

As for *McRO*, the Appellant seems to saying that this case stands for the proposition that, if a computer does a computation that was not previously done by a person, this equates to patent eligibility. According to the Appellant, independent claim 1 does not recite "methods of monitoring and comparing message flows that have been used by humans or by existing machines." (Appeal Br. 10.) Even if this interpretation of the Federal Circuit's holding in *McRO* was correct, we are not sure it helps the

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center's interaction with this customer is unlikely to follow one of the three message-flow paths diagrammed on Figure 4.

[11] For example, in *Electric Power Group, LLC v. Alstom S.A.*, 830 F.3d 1350 (Fed. Cir. 2016), the Federal Circuit held that "limiting the claims to the particular technological environment of power-grid monitoring [was], without more, insufficient to transform them into patent-eligible applications of the abstract idea at their core." (*Electric Power*, 830 F.3d. at 1354.)

Appellant's cause. In *McRO*, the claimed automation (which was achieved via a "set of rules") was not for "carrying out a fundamental economic practice" or any other abstract idea. (*McRO*, 837 F.3d at 1315.) Rather, in *McRO*, the claimed automation created a non-abstract "sequence of synchronized, animated characters." (*Id.*) Here, the claimed automation is for doing what "[a]n administrator" has traditionally done to monitor the "operational health" of a contact center "based on objects and features defined by the contact center." (Spec. ¶ 3.)

Thus, after careful consideration of the Appellant's arguments, we are not convinced that the Examiner wrongly concluded that independent claim 1 is directed to a judicial exception without significantly more.

Summary

We agree with the Examiner that independent claim 1 does not pass muster under 35 U.S.C. § 101. The Appellant argues the claims on appeal as a group for this rejection (*see* Appeal Br. 10), and thus claims 2–20 fall with claim 1.[12]

REJECTION II

The Examiner rejects claims 1–20 under 35 U.S.C. § 103 as being unpatentable over Zhakov and Nassehi.[13] (Final Action 6.) We sustain this rejection.

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[12] "When multiple claims subject to the same ground of rejection are argued as a group or subgroup by appellant, the Board may select a single claim from the group or subgroup and may decide the appeal as to the ground of rejection with respect to the group or subgroup on the basis of the selected claim alone." (37 CFR § 41.37(c) (1)(iv).)

[13] US 6,889,218 B1, issued May 3, 2005.

Obviousness

"[O]bviousness requires a suggestion of all limitations in a claim." (*CFMT, Inc. v. Yieldup Int'l Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003).) However, there need not be "precise teachings directed to the specific subject matter of the challenged claim" as "the inferences and creative steps that a person of ordinary skill in the art would employ" can be taken into account." (*KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 419 (2007).) For example, when "a structure already known in the prior art [] is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result" in order to be considered nonobvious. (*Id.* at 416.)

Analysis

Independent claim 1 recites defining "possible message flows associated with a plurality of events that can occur in a contact center as well as an expected order of the plurality of events," monitoring "message flows in the contact center by a continuous comparison of each of the monitored message flows against the possible message flows," and determining "that a message flow violation has occurred in the contact center, the message flow violation being associated with an abnormality in the monitored message flow." (Appeal Br., Claims App.)

The Examiner finds that Zhakov teaches defining "possible message flows associated with a plurality of events that can occur in a contact center as well as an expected order of the plurality of events" (Final Action 6); and the Examiner finds that Zhakov discloses "monitoring" and "compar[ing]" message flows in a contact center, and "determining" when an abnormality occurs (*id.* at 7). Zhakov discloses a method for managing a contact center

which uses a "learning algorithm" to "generate, optimize, and maintain one or more reference models of best practices for a contact center." (Zhakov ¶ 39.) Zhakov also discloses that the reference models are used to define "routing rules" for a contact center (*id.* ¶ 40), and that the contact center can be "alerted" if a "deviation in routing strategies" occurs. (*Id.* ¶ 64.)

Independent claim 1 requires "a tree-structured grammar" to define the "possible message flow paths." (Appeal Br., Claims App.)

The Examiner finds that Zhakov teaches "a tree ensemble method for the learning algorithm." (Final Action 7.) In Zhakov, "a list of business outcomes/dispositions that may indicate customer satisfaction" is maintained, and the "activities of various contact centers" are monitored to see if they "lead to one or more outcomes in the list." (Zhakov ¶ 43.) The learning algorithm "extracts patterns based on the monitored activities and associated outcomes," and these "patterns" can include, for example, "the number of transfers that were done during the call." (*Id.*) Thus, Zhakov's learning algorithm defines possible message-flow paths (i.e., event streams of certain events that occur in a certain sequence) which are aligned with customer satisfaction (i.e., best business practices).

The Examiner finds that Nassehi teaches "a tree-structured grammar for an event stream." (Final Action 7.) Nassehi discloses a method comprising the steps of "us[ing] a tree structure comprising a suffix tree and suffixes to extract a grammar (a set of rules) from a sample of normal behavior." (Nassehi 2:60–64; *see also* Fig. 1A.) Nassehi also discloses "check[ing] the event stream against the rules of the grammar to detect deviations," and "inform[ing] a system administrator of anomalies." (*Id.* 3:19–22.)

The Examiner determines that it would have been obvious to substitute Nassehi's grammar-related steps into Zhakov's method for managing the routing strategy of a contact center. (Final Action 9.) This substitution would result in Zhakov building a tree-structured grammar that defines routing rules aligned with best business practices, continuously checking the course of customer calls against this grammar, and informing an administrator if the course of a customer's call deviates from the grammar.

Thus, the Examiner adequately establishes that the method recited in independent claim 1 would have been obvious over the combined teachings of Zhakov and Nassehi.

The Appellant's Arguments

The Appellant argues that "the prior art fails to teach or suggest the claimed limitations." (Appeal Br. 11.) According to the Appellant, "Zhakov fails to teach or suggest every limitation recited by the present claims." (*Id*.) And, according to the Appellant, "Nassehi does not show or suggest that which Zhakov lacks." (*Id.* at 12.)

The Appellant contends that "Zhakov cannot be said to teach or suggest the [claimed] possible message flows." (Appeal Br. 12.) Although the Appellant acknowledges that Zhakov describes "monitor[ing] activities" of contact centers "to extract patterns," the Appellant asserts that a person of ordinary skill in the art would understand these "patterns" to be "single statistical occurrences," not "message flows" as required by the claims. (*Id.* at 11.) However, as acknowledged by the Appellant, the "patterns" extracted by Zhakov's learning algorithm include the "number of transfers done to a call," which is a series of events (in a certain sequence) beginning

20

with a customer's call and subsequent transfer events thereafter. Thus, contrary to the Appellant's contention, Zhakov is not "silent" regarding "any message flows that are associated with a plurality of events that can occur in a contact center, and any expected order of such a plurality of events." (*Id.* at 11–12.)[14]

Moreover, Nassehi teaches "extract[ing] patterns" from a stream of events possessing "normal behavior," and "reduc[ing] the patterns into rules" to build a grammar that can used for "anomaly detection." (Nassehi 3:3–13.) As for a "pattern" consisting of a "single statistical occurrence," Nassehi defines a "pattern" as a "sequence of events which occurs more than once." (*Id.* 3:48–51.) And Nassehi evidences that a "well-known" approach to the "extraction of patterns" is the "suffix-tree approach." (*Id.* 3:50–51.)

The Appellant contends that "Zhakov is silent regarding any continuous comparison as recited by the present claims." (Appeal Br. 12.) As discussed above, Zhakov discloses the detection of "deviation in routing strategies" by comparison of the "customer interactions" with established data. (*See* Zhakov ¶ 64.) Furthermore, Nassehi discloses continuously comparing an event stream (i.e., a series of events in a certain sequential order) "against the rules of grammar" to detect anomalies, so that the administrator can be "inform[ed] of the anomalies." (Nassehi 3:19–22.)

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[14] For example, Zhakov's learning algorithm could "learn" that, when a customer's call is transferred more than three times, there is a likelihood of customer dissatisfaction; but, when a customer's call is transferred three or less times, customer satisfaction is not compromised. This means that there are three possible flow-message paths that are aligned with best business practices, namely a one-transfer call (two events), a two-transfer call (three events), and a three-transfer call (four events). (*See, e.g.,* Zhakov ¶ 45.)

Thus, after careful consideration of the Appellant's arguments, we still conclude that the Examiner has established sufficiently that independent claim 1 would have been obvious over the combined teachings of Zhakov and Nassehi.

Summary

The Examiner's determination that independent claim 1 is unpatentable under 35 U.S.C. § 103 is adequately supported by the record. The Appellant argues the claims on appeal as a group for this rejection (*see* Appeal Br. 12–13), and thus claims 2–20 fall with claim 1.[15]

CONCLUSION

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–20	101	Judicial Exception	1–20	
1–20	103	Zhakov, Nassehi	1–20	
Overall Outcome			1–20	

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

AFFIRMED

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[15] "When multiple claims subject to the same ground of rejection are argued as a group or subgroup by appellant, the Board may select a single claim from the group or subgroup and may decide the appeal as to the ground of rejection with respect to the group or subgroup on the basis of the selected claim alone." (37 CFR § 41.37(c) (1)(iv).) "A statement which merely points out what a claim recites will not be considered an argument for separate patentability of the claim." (*Id.*)