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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DAVID SKIBA, GEORGE ERHART, LEE BECKER, and
VALENTINE C. MATULA

Appeal 2019-003051
Application 14/080,618
Technology Center 2600

Before JOSEPH L. DIXON, MAHSHID D. SAADAT, and
DONNA M. PRAISS, *Administrative Patent Judges*.

DIXON, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1–20. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ We use the word Appellant to refer to “applicant” as defined in 37 C.F.R. § 1.42(a) (2017). Appellant identifies the real party in interest as Avaya, Inc. Appeal Br. 2.

CLAIMED SUBJECT MATTER

The claims are directed to deep language attribute analysis in a contact center where the contact center may benefit from routing messages to agents who have similar, or complementary, attributes as the customer of the message. Abstract. Claim 1, reproduced below with emphases added, is illustrative of the claimed subject matter:

1. A method, comprising:

receiving, via a network interface of a contact center, a message from a device utilized by a customer, the message having message elements and the customer is unknown to the contact center at the time the message is received;

deriving, by a processor, a conversational attribute of a customer based on a semantic attribute describing the message elements;

selecting, by the processor, an agent from a plurality of agents in the contact center to interact with the customer based, at least in part, on the derived conversational attribute being associated with the selected agent; and

enabling, by the processor, a communication session between the selected agent and the customer and routing the message to the selected agent.

REFERENCES

The prior art relied upon by the Examiner is:

Dedrick	US 5,696,965	Dec. 9, 1997
Bodin et al.	US 2005/0131703 A1	June 16, 2005
Mezo et al.	US 2007/0255611 A1	Nov. 1, 2007
Bangalore et al.	US 2009/0076795 A1	Mar. 19, 2009
Seah	US 2013/0085870 A1	Apr. 4, 2013
Kim et al.	US 2014/0111689 A1	Apr. 24, 2014

REJECTIONS

Claims 1–20 stand rejected under 35 U.S.C. § 101 because the claimed invention is directed to a judicial exception (i.e., a law of nature, a natural phenomenon, or an abstract idea) without significantly more.

Claims 1, 2, 9, 11–14, 16–18, and 20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Kim in view of Bangalore.

Claims 3 and 10 stand rejected under 35 U.S.C. § 103 as being unpatentable over Kim and Bangalore further in view of Seah.

Claims 4, 5, 7, and 19 stand rejected under 35 U.S.C. § 103 as being unpatentable over Kim and Bangalore further in view of Bodin.

Claim 6 stands rejected under 35 U.S.C. § 103 as being unpatentable over Kim and Bangalore further in view of Mezo.

Claims 8 and 15 stand rejected under 35 U.S.C. § 103 as being unpatentable over Kim and Bangalore further in view of Dedrick.

OPINION

35 U.S.C. § 101

1. 35 U.S.C. § 101

a. Legal Principles

An invention is patent eligible if it claims a “new and useful process, machine, manufacture, or composition of matter.” 35 U.S.C. § 101. However, the Supreme Court has long interpreted 35 U.S.C. § 101 to include implicit exceptions: “[l]aws of nature, natural phenomena, and abstract ideas” are not patentable. *E.g., Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014).

In determining whether a claim falls within an excluded category, we are guided by the Supreme Court’s two-step framework, described in *Mayo* and *Alice*. *Alice*, 573 U.S. at 217–18 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 75–77 (2012)). In accordance with that framework, under Step 2A, we first determine what concept the claim is “directed to.” *See Alice*, 573 U.S. at 219 (“On their face, the claims before us are drawn to the concept of intermediated settlement, *i.e.*, the use of a third party to mitigate settlement risk.”); *see also Bilski v. Kappos*, 561 U.S. 593, 611 (2010) (“Claims 1 and 4 in petitioners’ application explain the basic concept of hedging, or protecting against risk.”).

Concepts determined to be abstract ideas and, thus, patent ineligible include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–20; *Bilski*, 561 U.S. at 611); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as “molding rubber products” (*Diamond v. Diehr*, 450 U.S. 175, 191 (1981)); “tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores” (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S. 252, 267–68 (1853))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

If, under Step 2A, the claim is “directed to” an abstract idea, then, under Step 2B, “we must examine the elements of the claim to determine whether it contains an ‘inventive concept’ sufficient to ‘transform’ the claimed abstract idea into a patent-eligible application.” *Alice*, 573 U.S. at 221 (quotation marks omitted). “A claim that recites an abstract idea must

include ‘additional features’ to ensure ‘that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].’” *Id.* (quoting *Mayo*, 566 U.S. at 77). “[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention.” *Id.*

On January 7, 2019, the U.S. Patent and Trademark Office (“USPTO”) published revised patent subject matter eligibility guidance. *See* 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50, 2019 (“Revised Guidance”). Under the Revised Guidance, Step 2A of the *Alice* two-step framework is divided in two prongs. For Step 2A, Prong 1, we look to whether the claim recites any judicial exceptions falling into certain groupings of abstract ideas (*e.g.*, mathematical concepts, certain methods of organizing human activity such as a fundamental economic practice, or mental processes). For Step 2A, Prong 2, if the claim recites such a judicial exception, we look to whether the claim recites any additional elements that integrate the judicial exception into a practical application (*see* Manual of Patent Examining Procedure (“MPEP”) § 2106.05(a)–(c), (e)–(h)).

Only if a claim recites a judicial exception and does not integrate that exception into a practical application, do we then determine, under Step 2B of the *Alice* two-step framework, whether the claim adds a specific limitation beyond the judicial exception that is not “well-understood, routine, conventional” in the field (*see* MPEP § 2106.05(d)) or simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.

b. Examiner's Findings and Conclusions²

The Examiner identifies all of the claimed steps as part of the recited abstract idea. Final Act. 5 (“selecting an agent to speak to a customer based on the customer’s derived semantic conversational attributes. All the steps of Applicant’s claims 1, 9 and 13 are an abstract concept that could be performed in the human mind, or by a human using a pen and paper”); *see also* Ans. 3.

The Examiner finds that the recited “processor” and “network interface” components merely provide a generic environment in which to carry out the abstract idea. Final Act. 6. The Examiner finds that none of recited steps refer to a “specific machine by reciting structural limitations of any apparatus or to any specific operations that would cause a machine to be the mechanism to perform these steps.” Final Act. 6. The Examiner further finds the “communication network” is described in the Specification in such a conventional way such that the communication network behaves in a conventional manner of providing for communication between a customer and an agent. Ans. 4.

The Examiner also finds that the behavior of the network can be rooted in past network technologies, such as switchboard operators. These

² We note that the Final Action, Appeal Brief, and the Examiner’s Answer were mailed before or contemporaneously with the USPTO published the Revised Guidance and, therefore, do not rely on or apply the Revised Guidance. However, Appellant’s arguments in the Reply Brief indeed rely on the Revised Guidance. While recognizing the Examiner’s conclusions in the Final Action, our analysis is based on the Revised Guidance. Patent eligibility under 35 U.S.C. § 101 is a question of law that is reviewable *de novo*. *See Dealertrack, Inc. v. Huber*, 674 F.3d 1315, 1333 (Fed. Cir. 2012).

human switchboard operators would enable a communication session by manually switching network connections in order to establish a connection between telephone lines. Ans. 4. The Examiner further finds that simply enabling a communication session between a customer and an agent based upon a customer conversational attribute is an abstract idea because there is a lack of specificity in the derivation of the customer conversational attribute, and the routing of messages to the selected agent does not constitute significantly more than the abstract idea. Ans. 5–6.

The Examiner finds that the claims are not directed to “an improvement to computer technology.” Final Act. 7.

The Examiner analogizes the recited claim limitations to the *TLI* and *Mortgage Grader* cases, where the abstract idea of deriving a conversational attribute and selecting an agent based on the derived conversational attribute claims with an “interface,” “network,” and a “database” are nevertheless directed to an abstract idea.³ Ans. 3–6.

The Examiner finds that the “additional elements” and computer functions of the communication network and processor to be well-understood, routine, and conventional functions when claimed in a merely generic manner. Final Act. 6. The Examiner also concludes the claims, when considered individually and in ordered combination, are directed to ineligible subject matter. Final Act. 4.

³ *In re TLI Commc’ns LLC*, 823 F.3d 607, 613 (Fed. Cir. 2016); *Mortg. Grader, Inc. v. First Choice Loan Serv. Inc.*, 811 F.3d 1314, 1324–25 (Fed. Cir. 2016).

Appellant's Arguments

Appellant argues that “the specification and claims at-issue, and *as a whole, do* describe a new system” because the claim recites “enabling, by the processor, a communication session between the selected agent and the customer **and routing the message to the selected agent.**”⁴ Appeal Br. 5–6.

In distinguishing the *TLI* and *Mortgage Grader* cases, Appellant contends that “claims here are entirely based on a problem arising from the advent of communication networks. Namely, a communication over a network is to be established, and it is this advent of networking technology where the problem to be solved lies.” Appeal Br. 7. Appellant further argues that

[t]he claims plainly recite limitations beyond the ability of an unaided human. Claim 1, for example, recites in part, “*receiving, via a network interface of a contact center, a message from a customer [. . .] enabling, by the processor, a communication session between the selected agent and the customer and routing the message to the selected agent.*” A human, alone or with pencil and paper, has no such ability.

Appeal Br. 11; *see also* Reply Br. 2–5.

⁴ The Specification discloses:

Embodiments . . . enable an automated system to analyze the customer’s comments/questions and identify the customer as a technical expert. Specifically, the customer uses terms like POP3 and IMAP which indicate an understanding of e-mail protocols that should label this as a technically savvy customer. It is likely that this customer should be routed to a higher level tier of support where the expectation is that the user is capable of talking in more technical terms.

Spec. ¶ 10.

Appellant also argues that the Examiner does not present a prima facie case of subject matter ineligibility in the rejection. Appeal Br. 6; Reply Br. 2.

c. Discussion

With respect to independent claims 1, 9, and 13, Appellant does not set forth separate arguments for patentability. As a result, we select independent claim 1 as the representative claim and address Appellant's arguments thereto. 37 C.F.R. § 41.37(c)(1)(iv). Independent claims 9 and 13 will fall with independent claim 1. Arguments which Appellant could have made but chose not to make in the Briefs have not been considered and are deemed to be waived.⁵ See 37 C.F.R. § 41.37 (c)(1)(iv).

i. Step 2A, Prong 1

For Step 2A, Prong 1, of the Revised Guidance, we find that the emphasized portions of claim 1, reproduced above, recite elements that fall within the abstract idea grouping of mental processes. The Revised Guidance requires us to evaluate whether the claim recites a judicial exception (e.g., an abstract idea). According to the Revised Guidance, to determine whether a claim recites an abstract idea, we must identify limitations that fall within one or more of the designated subject matter groupings of abstract ideas. According to the October 2019 Patent

⁵ We note that independent claim 9 is drafted in "means plus function" format, but Appellant did not argue this claim separately and provides the same general correlation to the Specification as independent claim 1. Appeal Br. 2–3 (Summary of Claim Subject Matter). Therefore, any arguments thereto are waived.

Eligibility Guidance Update produced by the USPTO, “a claim recites a judicial exception when the judicial exception is ‘set forth’ or ‘described’ in the claim.” *See* October 2019 Patent Eligibility Guidance Update Revised Patent Subject Matter Eligibility Guidance, https://www.uspto.gov/sites/default/files/documents/peg_oct_2019_update.pdf (“October Update”). The Revised Guidance lists mental processes as one such grouping and characterizes mental processes as including, *inter alia*, “concepts performed in the human mind (including observation, evaluation, judgment, opinion).” 84 Fed. Reg. at 52. We find that the elements of independent claim 1 describe this judicial exception.

We note that the Appellant has not identified that the Specification specifically defines “enabling a communication session.” *See generally* Appeal Br. 5–14; Reply Br. 1–8.

We further note that the express language of representative independent claim 1 does not recite “automatic” and merely recites “enabling, by the processor, a communication session between the selected agent and the customer and routing the message to the selected agent.”⁶

⁶ The Specification discloses:

[E]nable an automated system to analyze the customer’s comments/questions and identify the customer as a technical expert. Specifically, the customer uses terms like POP3 and IMAP which indicate an understanding of e-mail protocols that should label this as a technically savvy customer. It is likely that this customer should be routed to a higher level tier of support where the expectation is that the user is capable of talking in more technical terms.

Arguments must be commensurate in scope with the actual claim language. *In re Self*, 671 F.2d 1344, 1348 (CCPA 1982); *see In re Hiniker Co.*, 150 F.3d 1362, 1369 (Fed. Cir. 1998) (“[The] proffered facts . . . are not commensurate with the claim scope and are therefore unpersuasive.”).

In the Reply Brief, Appellant addresses the Revised Guidance and responds to the Examiner’s conclusion that independent claim 1 recites an abstract idea of a mental process and does not address math or certain methods of organizing human behavior. Reply Br. 2. Appellant further contends that the Revised Guidance Footnote 14 states “If a claim, under its broadest reasonable interpretation, covers performance in the mind but for the recitation of generic computer components, then it is still in the mental processes category **unless the claim cannot practically be performed in the mind.**” Reply Br. 2.

Appellant contends that the Examiner proffers a hypothetical association with past human operated switchboards to illustrate the mental processes involved and such an example merely illustrates that the prior art can utilize humans for routing calls, if one ignores the technology that allowed the call to be received, alerted, and presented to an operator and how the electrical connections are made in order to present the call to the desired party’s telephone, and is not germane to a rejection under 35 U.S.C. § 101. Reply Br. 3.

We note that claim 1 does not recite specific technology by a step of presenting of the message to an operator or how the electrical connections are made in order to present the call to the desired party’s telephone. Consequently, Appellant’s argument is not commensurate in scope with the

express claim language and is not persuasive of error in the Examiner's conclusion of obviousness.

Appellant also contends the Examiner mischaracterizes what is claimed and the mischaracterization portrays a usage or "gist" of what is claimed rather than what is actually recited in the claim by omitting the processing and communication hardware, and the interactions therebetween. Reply Br. 4.

Again, Appellant's argument is not commensurate in scope with the express language of independent claim 1 and is not persuasive of error.

Appellant contends that the Examiner's switchboard example would require substantial hardware infrastructure, without which a human would be unable to do more than occupy a chair and that no unaided human can practically receive a message from a device via a network interface. Reply Br. 5. Appellant further argues that "[t]he claims plainly recite limitations beyond the ability of an unaided human . . . [and a] human, alone or with pencil and paper, has no such ability." Appeal Br. 11; *see also* Reply Br. 2–5.

We disagree with Appellant and note that under the broadest reasonable interpretation of claim 1, the claim does not set forth specific details of the user device, the communication network, or the processor. We find the Examiner's switchboard example may be as broad as the operator receiving a message on paper (because the claimed message is recorded), making a decision to route the message to a specific agent based upon the content or way the message is stated, and forwarding the copy of the message (on the paper) to the specific agent for addressing/responding to the

message which would enable a communication session and route the message to the selected agent.

Appellant has not identified that the Specification specifically defines the act of routing, and Appellant has not identified that the Specification specifically describes or defines “routing.”⁷ Specifically, we find that the emphasized portions of claim 1 set forth the basic mental steps a human would take when evaluating the abstract idea in the human mind. We find that the limitations of claim 1 recite the steps of a mental process.

Although we acknowledge that claim 1 specifies a network interface and a processor, these additional device elements do not further define or

⁷ The Specification discloses:

[I]mmediate routing, such as when a particular customer attribute is detected in a message, which has not yet been processed, as well as future routings. For example, a particular message exchange with an agent exchange may reveal a particular customer attribute. However, rerouting the contact to another agent may not be an option or may not be a desired business practice. As a result, future messages from the customer may be routed according to embodiments described herein.

Spec. ¶ 28. The Specification also discloses “the specific cut-off point of what is, or is not, a strong enough indicator to justify a routing decision being made on such a factor, is a matter of implementation choice.” Spec. ¶¶ 31; 36 “routing decision”; 38 “*Routing engine 206 then routes* the message to one of agents 206 in accord with the determined customer conversational attribute as well as other attributes that have been determined for the customer 202” (emphasis added); 41 “[r]outing engine 206 may make routing decisions based on a number of attributes, including availability of agents 208 to process a message.”

otherwise limit these additional device elements to any particular thing or environment. Thus, we find claim 1 recites elements that fall within the abstract idea grouping of mental processes.

ii. Step 2A, Prong 2

For Step 2A, Prong 2, of the Revised Guidance, we find that claim 1, as a whole, does not integrate the recited mental process into a practical application of the abstract idea. The Revised Guidance states that “[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.” 84 Fed. Reg. at 53. The Revised Guidance further states that integration should be evaluated by “[i]dentifying whether there are any additional elements recited in the claim beyond the judicial exception(s)” and, based on certain considerations, “evaluating those additional elements individually and in combination to determine whether they integrate the exception into a practical application.” 84 Fed. Reg. at 54–55. The Revised Guidance identifies considerations such as whether additional elements yield an improvement to a particular technology or a computer itself, correspond to the implementation of the judicial exception with a particular machine, and/or apply the judicial exception in some way beyond simply linking the judicial exception to a particular technological environment. *See* MPEP § 2106.05(a)–(c), (e)–(h).

Here, as discussed above, claim 1 incorporates additional device elements. The additional elements recited in claim 1 beyond the recited

abstract idea, are “a network interface of a contact center,” “a device utilized by a customer,” “a processor,” and “a communication session.”

For the practical application analysis, Appellant contends that no express consideration of the claim as a whole has been provided in rendering the rejection. Reply Br. 5. Appellant contends that the Examiner must (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. Reply Br. 6. Under step “a,” Appellant submits that at least one, or even each, claimed limitation is an additional element that goes beyond a judicial exception, and under step “b,” the combination of elements also results in an integration into a practical application. Reply Br. 6.

We disagree with Appellant and find that the nominal recitation “via a network interface of a contact center,” “from a device utilized by a customer,” “by a processor,” and “a communication session” individually and in combination do not integrate the recited abstract idea into a practical application. Moreover, Appellant’s argument that “the communications improved by the claimed invention which enable, among other things, the technical field to be enhanced with automated means to route a communication to an appropriate resource” is not commensurate in scope with the express language of independent claim 1 because the claim does not necessarily improve the communication or the communication network, and the claim is not recited as an “automated” “means” to route a communication to an appropriate resource. The claim merely recites “enabling, by the processor, a communication session between the selected

agent and the customer and routing the message to the selected agent.” See Summary of Claim Subject Matter, Appeal Br. 2–3; Spec. ¶¶ 5–7 and 48. Additionally, the Specification indicates the native vs. non-native speakers determination may be used for a “routing decision” based on native language.⁸

⁸ The Specification discloses: “Native vs. non-native speakers: A non-native/non-fluent speaker tends to drop words and have a lower vocabulary level for his or her non-native language. This lack of language vocabulary and aptitude might be used to route to an appropriate agent or to an agent that speaks his or her native language, if detected.” Spec. ¶ 7. The Specification further discloses:

“As a result, future contact using that particular word may be slightly weighted as a female. Other words with a higher distinction, say 87% male/13% female, may cause the gender indicator be highly weighted towards male and routed accordingly. The specific cut-off point of what is, or is *not*, a strong enough indicator to justify a *routing decision* being made on such a factor, *is a matter of implementation choice*. “

Spec. 31 (emphasis added). The Specification also discloses “a customer conversational attribute for which a *routing decision* may be based. Routing engine 206 then routes the message to one of agents 206 in accord with the determined customer conversational attribute as well as other attributes that have been determined for the customer 202.” Spec. ¶ 38 (emphasis added).

The Specification discloses:

Routing engine 206 may make *routing decisions* based on a number of attributes, including availability of agents 208 to process a message. In one embodiment, routing engine 206 utilizes the customer category to route the message to the best qualified agent 208. As one example, if customer 202 provided message 204 which indicated a certain customer category (e.g., age, gender, expertise, nationality, language fluency, formality,

Under the broadest reasonable interpretation of the claimed steps of “enabling” and “routing” are merely “decisions” in the enabling and routing, but not the further use of the communication network as specifically limited in the receiving step.⁹

However, we find that these additional device-type elements do not integrate the mental process of claim 1 into a practical application. For instance, we do not find that these additional device-type elements yield an improvement in the functioning of a computer itself or to the particular technology of the claimed generic “method,” neither do we find that these additional device-type elements are any particular machine that is necessary to implement the judicial exception or transform something to a different state. Additionally, we do not find that these additional device-type elements apply the abstract idea in a meaningful way to any particular technological environment of the claimed generic “method.” Based on the cited record in this appeal, we find the preponderance of the evidence supports the Examiner’s finding for Step 2B of the *Alice* two-step framework that these additional device-type elements, as claimed,

etc.), a specific agent 208A-208n may be selected based on familiarity and/or similarity with such a customer category.

Spec. ¶ 41 (emphasis added).

⁹ 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). “In the patentability context, claims are to be given their broadest reasonable interpretations . . . limitations are not to be read into the claims from the specification.” *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993) (citations omitted).

correspond at most to a generic computing structure. *See* Final Act. 6; *see also* Ans. 3, 5.

In addition, we determine that claim 1 recites insignificant pre-solution activity (“receiving. . . a message”) and insignificant post-solution activity (“enabling a communication session . . . and routing . . .”). *See Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1241–42 (Fed. Cir. 2016) (addressing insignificant post-solution activity); *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1363–64 (Fed. Cir. 2015) (addressing insignificant pre-solution activity). The recited insignificant extra-solution activity does not help integrate the recited mental process into a practical application of the abstract idea and because the received message may be stored data and enabling may merely be giving authorization and handing a note to an agent. We further find that the claimed invention merely includes insignificant extra-solution activity which does not result in a “practical application.” *Parker v. Flook*, 437 U.S. 584, 585–86 (1978) (“In essence, the method consists of three steps: an initial step which merely measures the present value of the process variable (*e.g.*, the temperature); an intermediate step which uses an algorithm to calculate an updated alarm-limit value; and a final step in which the actual alarm limit is adjusted to the updated value. The only difference between the conventional methods of changing alarm limits and that described in respondent’s application rests in the second step—the mathematical algorithm or formula.”). Moreover, Appellant’s arguments fail because the arguments are not commensurate with the scope of claim 1.

Thus, we conclude that claim 1, as a whole, does not integrate the recited mental process into a practical application of the abstract idea.

Therefore, based on our analysis under the Revised Guidance, we agree with the Examiner that claim 1 is directed to an abstract idea. Specifically, we find that claim 1 is directed to the abstract idea of a mental process. As a result, we focus our attention on Step 2B of the *Alice* two-step framework.

iii. Step 2B

For Step 2B, we are not persuaded by Appellant’s argument that claim 1 recites significantly more than the abstract idea itself. Step 2B of the *Alice* two-step framework requires us to determine whether any element, or combination of elements, in the claim is sufficient to ensure that the claim amounts to significantly more than the judicial exception. *Alice*, 573 U.S. at 221. As discussed in the previous section, we agree with the Examiner’s conclusion that the additional device elements, when considered individually and in an ordered combination, correspond to nothing more than a generic computing structure used to implement the mental process. In other words, these components, as claimed, are well-understood, routine, and conventional and “behave exactly as expected according to their ordinary use.” *See TLI*, 823 F.3d at 615. As discussed in the previous section, Appellant’s Specification describes the computing environment in which the invention is performed. *See Spec.* ¶¶ 38, 52, 55.¹⁰ “Network interface” is

¹⁰ The Specification discloses:

Upon receiving the message 204, analysis engine 110 determines which semantic attributes 106 are present in message 204 and indicative of a customer conversational attribute for which a routing decision may be based. Routing engine 206 then routes the message to one of agents 206 in accord with the determined

customer conversational attribute as well as other attributes that have been determined for the customer 202.

Spec. ¶ 38. The Specification also discloses:

It should be appreciated that in alternate embodiments, the methods may be performed in a different order than that described. It should also be appreciated that the methods described above may be performed by hardware components or may be embodied in sequences of machine-executable instructions, which may be used to cause a machine, such as a *general purpose or special-purpose processor (GPU or CPU)* or logic circuits programmed with the instructions to perform the methods (FPGA). These machine-executable instructions may be stored on one or more machine readable mediums, such as CD-ROMs or other type of optical disks, floppy diskettes, ROMs, RAMs, EPROMs, EEPROMs, magnetic or optical cards, flash memory, or other types of machine-readable mediums suitable for storing electronic instructions. Alternatively, the methods may be performed by a combination of hardware and software.

Spec. ¶ 52 (emphasis added). The Specification further discloses:

Furthermore, embodiments may be implemented by hardware, software, firmware, middleware, microcode, hardware description languages, or any combination thereof. When implemented in software, firmware, middleware or microcode, the program code or code segments to perform the necessary tasks may be stored in a machine readable medium such as storage medium. A processor(s) may perform the necessary tasks. A code segment may represent a procedure, a function, a subprogram, a program, a routine, a subroutine, a module, a software package, a class, or any combination of instructions, data structures, or program statements. A code segment may be coupled to another code segment or a hardware circuit by passing and/or receiving information, data, arguments, parameters, or memory contents. Information, arguments, parameters, data, etc.

not specifically described in the Specification and the Summary of the Claimed Subject Matter section merely identifies Figure 4's flowchart. Therefore, the broadest reasonable interpretation of network interface encompasses any interface, including generic ones, to a communication network.

Appellant's Specification also gives no indication that such a computing environment is anything other than a well-understood, routine, and conventional computing environment. Thus, implementing the abstract idea with these generic computer components "fail[s] to transform that abstract idea into a patent-eligible invention." *Alice*, 573 U.S. at 221.

As a result, Appellant's Specification is drafted at a high level and does not indicate that the computer, processor, or communication network interface is more than well-known, routine, and conventional hardware to perform the claimed method. Therefore, we agree with the Examiner that claim 1 does not provide significantly more than the abstract idea itself.

With respect to well-known, routine, and conventional hardware, the Examiner finds that the recited "processor" and "network interface" components that are included in the current claims merely provide a generic environment in which to carry out the abstract idea, and that none of recited steps refer to a specific machine by reciting structural limitations of any

may be passed, forwarded, or transmitted via any suitable means including memory sharing, message passing, token passing, network transmission, etc.

Spec. ¶ 55 (emphasis added).

apparatus or to any specific operations that would cause a machine to be the mechanism to perform these steps. Final Act. 6; *see also* Ans. 3, 5.

Because Appellant’s representative claim 1, and grouped claims 2–20, are directed to a patent-ineligible abstract concept and do not recite an “inventive concept” under the second step of the *Alice* analysis, we sustain the Examiner’s § 101 rejection of claims 1–20.

35 U.S.C. § 103

With respect to independent claims 1, 9, and 13, Appellant argues the claims together. Appeal Br. 16. Based on Appellant’s arguments and our discretion under 37 C.F.R. § 41.37(c)(1)(iv), we select independent claim 1 as the representative claim for the group and will address Appellant’s arguments presented in both the Appeal Brief and Reply Brief. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2017). Arguments which Appellant could have made but did not make in the Briefs are deemed to be waived.¹¹ *See* 37 C.F.R. § 41.37(c)(1)(iv).

Appellant sets forth separate arguments for patentability of dependent claims 2, 3, 4 (with claims 5, 7, 9), 6, and 8. Appeal Br. 17. We address those claims separately below.

Claim 1

Appellant argues that “[t]he art of record may recite deriving a meaning of *a message* (*see*, Bangalore) or selecting an agent (*see*, Kim), the

¹¹ We note that independent claim 9 is drafted in “means plus function” format, but Appellant does not set forth separate arguments for patentability of independent claim 9. Arguments to the “means” limitations are waived.

art does not teach or suggest obtaining a customer conversational attribute *of the customer* for use in selecting and connecting to a particular agent.”

Reply Br. 8 (in step 2B of the patent eligibility argument). Appellant also argues “conversation attribute fails to teach a customer’s conversational attribute. As Bangalore teaches in ¶ 0072, a customer may require more information, instruction, apology or other response. What does this tell us about a customer’s conversational attributes?” Reply Br. 8. Appellant argues “[i]n Bangalore, it is the message’s meaning that is determined and responded to and not a customer’s conversational attribute.” Reply Br. 8–9.

We note that Appellant has not identified a specific definition in the Specification of “customer conversational attribute.” *See* Appeal Br. 2 (Summary of Claimed Subject Matter “Fig. 4, ref 412; ¶¶ 0005-0007, 0033, 0042, 0046);” *see also* Spec. ¶¶ 33, 38. We disagree with Appellant’s argument and find the argument unpersuasive of error.

We further find that, under the broadest reasonable interpretation of the claimed “conversational attribute of a customer,” the meaning of the conversation or the language with which the message is spoken would be a conversational attribute of a customer. As a result, the teachings and suggestions of the Bangalore reference regarding the meaning of the conversation teaches or suggests a conversational attribute of the specific customer regarding the specific issue.

Moreover, Bangalore’s paragraph 71 discloses discloses “[t]he parsed clauses in 50 are preferably also analyzed to define word structure and relationships, such as predicates and arguments. The clauses are parsed into predicates and arguments using a natural language parser that extracts the verb (which serves as the predicate) and the arguments of the verb.” Thus,

the record supports the Examiner's finding that the determination of the structure and relationship of information from the syntactic analysis provides a basic customer conversational attribute of the customer communication and their communication style which goes beyond mere content and intent.

Additionally, "[e]ach semantic tag preferably summarizes or captures the writer's (i.e., the customer's or the agent's) intent and provides categories with which the clauses **50** can be grouped, sorted, searched and analyzed in how the customer conveys information." Bangalore ¶ 72. We find that the "personal details/narratives" tag described in paragraph 72 to be a "conversational attribute of a customer." We also note that the customer conversational attribute," under the broadest reasonable interpretation, is broad enough to read on a selection of a preferred language. Spec. ¶¶ 3 (Background), 37.

As a result, we find Appellant's argument that the Bangalore reference teaches determining solely conversation rather than a "customer conversational attribute" to be unpersuasive of error in the Examiner's factual findings or conclusion of obviousness of representative claim 1 and we sustain the rejection of independent claim 1 and independent claims 9 and 13 not separately argued with particularity.

Dependent claims

With respect to dependent claims 2, 3, 4 (5, 7, and 19), and 6, we find Appellant's arguments rely upon the underlying argument that the Bangalore reference does not teach the claimed "customer attribute." Appeal Br. 17–19. We found this argument to be unpersuasive with respect to independent claim 1. As a result, we find the same argument to be unpersuasive of error

for these dependent claims, and we sustain the obviousness rejections for the same reasons.

With respect to dependent claim 8, Appellant argues that the claim requires “analyzing the agent’s reply,” but the Bangalore reference does not analyze the selected agent’s reply. Appeal Br. 19–20. We disagree with Appellant and find that the Examiner relied upon the Dietrich reference to teach and suggest the required analyzing and notifying step. Final Act. 20; Ans. 8.

We further agree with the Examiner that the Bangalore reference teaches and suggests use with previous responses by agents and review of the agent’s responses. *See* Bangalore ¶¶ 7, 9, 72, 84. The Bangalore reference discloses:

Preferably, the preliminary response message is generated with little or no customer agent involvement. In other words, preferably the preliminary response message is generated exclusively through an automated process. In step **320**, the preliminary response message is preferably forwarded to a customer agent for review and/or editing . . . due to the nature of certain messages and the desire for improved readability and understanding of the responses, it can be beneficial to have the message reviewed by an agent before being sent to the customer.

Bangalore ¶ 84. Bangalore further discloses “[e]ach semantic tag preferably summarizes or captures the writer’s (i.e., the customer’s *or the agent’s*) intent and provides categories with which the clauses **50** can be grouped, sorted, searched and analyzed.” Bangalore ¶ 72 (emphasis added).

Therefore, the Bangalore reference teaches and fairly suggests a similar analysis on the agent’s response as with the customer’s initial communication. Additionally, the Examiner has relied upon the Dedrick

reference to teach or suggest the notifying step. Appellant has not responded to this portion of the Examiner's rejection. Consequently, we find Appellant's argument to be unpersuasive of error in the Examiner's conclusion of obviousness of dependent claim 8.

CONCLUSION

The Examiner's patent eligibility and obviousness rejections are affirmed.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1-20	101	Eligibility	1-20	
1, 2, 9, 11-14, 16-18, 20	103	Kim, Bangalore	1, 2, 9, 11-14, 16-18, 20	
3, 10	103	Kim, Bangalore, Seah	3, 10	
4, 5, 7, 19	103	Kim, Bangalore, Bodin	4, 5, 7, 19	
6	103	Kim, Bangalore, Mezo	6	
8, 15	103	Kim, Bangalore, Dedrick	8, 15	
Overall Outcome			1-20	

TIME PERIOD FOR RESPONSE

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

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AFFIRMED