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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* MANAS HARIBHAI SOMAIYA, RAJYASHREE MUKHERJEE,  
SHRISH MISHRA, and FANG-HSIANG SU

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Appeal 2019-001407  
Application 14/818,034  
Technology Center 2100

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Before BRADLEY W. BAUMEISTER, ERIC B. CHEN, and  
RUSSELL E. CASS, *Administrative Patent Judges*.

Opinion for the Board filed by *Administrative Patent Judge* CHEN.

Opinion Concurring filed by *Administrative Patent Judge* BAUMEISTER.

CHEN, *Administrative Patent Judge*.

DECISION ON APPEAL

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

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<sup>1</sup> We use the word Appellant to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as eBay, Inc. (Br. 3.)

### CLAIMED SUBJECT MATTER

The claims are directed to enhancing autocomplete search suggestions, such that a query portion with a token portion generates a first search query suggestion set having a first order based on the token portion. (Abstract.)

Claim 1, reproduced below, is illustrative of the claimed subject matter, with disputed limitations in italics:

1. A computer-implemented method, comprising:
  - receiving, by a server device, at least a query portion from a client device to conduct a search based at least in part on the received query portion;
  - generating, by the server device, at least a first search query suggestion based at least in part on a determination that at least the received query portion corresponds to at least one token portion stored in a token pool that includes a plurality of tokens generated by the server device;
  - generating, by the server device, *at least a second search query suggestion based at least in part on an expansion of at least a portion of the generated first search query suggestion*, wherein the expansion is performed by the server device *based at least in part on a session history associated with the client device*; and
  - communicating, by the server device, at least the generated first and second search query suggestions to the client device responsive to the received query portion.

### REJECTIONS

Claims 1–20 stand rejected under 35 U.S.C. § 101 as directed to patent-ineligible subject matter.

Claims 1–20 stand rejected under 35 U.S.C. § 112(a) as failing to comply with the written description requirement.

OPINION

*§ 101 Rejection*

We are persuaded by Appellant’s arguments (Br. 9) that the Examiner has not satisfied the proper burden for making a prima facie case for patent ineligibility under 35 U.S.C. § 101.

The Examiner determined that independent claims 1, 11, and 13 are directed to a judicial exception. (Final Act. 3–4.) In particular, the Examiner determined the following:

These [claimed] steps correspond to concepts identified as abstract ideas by the courts, such as collecting information, analyzing it, and displaying certain results of the collection and analysis in *Elec. Power Grp. v. Alstom S.A.*, 830 F.3d 1350 (Fed. Cir. 2016), collecting and manipulating data, as well as customizing information and presenting it to users based on particular characteristics in *Intellectual Ventures I LLC v. Capital One Fin. Co.*, 850 F.3d 1332 (Fed. Cir. March 7, 2017), searching and retrieving data in *Intellectual Ventures I LLC v. Erie Indemnity Co.*, 850 F.3d 1315 (Fed. Cir. March 7, 2017), and obtaining and comparing intangible data in *Cybersource Co. v. Retail Decisions Inc.*, 654 F.3d 1366 (Fed. Cir. 2011).

(*Id.*) We agree that the Examiner has not satisfied the proper burden for a prima facie case.

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

In determining whether a claim falls within an excluded category, we are guided by the Supreme Court’s two-step framework, described in *Mayo*

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

Concepts determined to be abstract ideas, and thus patent ineligible, include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–20; *Bilski*, 561 U.S. at 611); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 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 (1854))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

In *Diehr*, the claim at issue recited a mathematical formula, but the Supreme Court held that “[a] claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula.” *Diehr*, 450 U.S. at 176; *see also id.* at 191 (“We view respondents’ claims as nothing more than a process for molding rubber products and not as an attempt to patent a mathematical formula.”). Having said that, the Supreme Court also indicated that a claim “seeking patent

protection for that formula in the abstract . . . is not accorded the protection of our patent laws, . . . and this principle cannot be circumvented by attempting to limit the use of the formula to a particular technological environment.” *Id.* at 191 (citing *Benson* and *Flook*); *see also, e.g., id.* at 187 (“It is now commonplace that an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.”).

If the claim is “directed to” an abstract idea, we turn to the second step of the *Alice* and *Mayo* framework, where “we must examine the elements of the claim to determine whether it contains an ‘inventive concept’ sufficient to ‘transform’ the claimed abstract idea into a patent-eligible application.” *Alice*, 573 U.S. at 221 (citation omitted). “A claim that recites an abstract idea must include ‘additional features’ to ensure ‘that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].’” *Id.* (quoting *Mayo*, 566 U.S. at 77). “[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention.” *Id.*

The PTO recently published revised guidance on the application of § 101. USPTO’s 2019 REVISED PATENT SUBJECT MATTER ELIGIBILITY GUIDANCE, 84 Fed. Reg. 50 (Jan. 7, 2019); *see also* USPTO, *October 2019 Update: Subject Matter Eligibility*, 84 Fed. Reg. 55942 (Oct. 17, 2019).

Under that guidance, we first look to whether the claim recites:

- (1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activity such as a fundamental economic practice, or mental processes); and

(2) additional elements that integrate the judicial exception into a practical application (*see* MPEP § 2106.05(a)–(c), (e)–(h) (9th ed. 2019)).

84 Fed. Reg. at 52–55.

Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, do we then look to whether the claim:

(3) adds a specific limitation beyond the judicial exception that are not “well-understood, routine, conventional” in the field (*see* MPEP § 2106.05(d)); or

(4) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.

*See* 84 Fed. Reg. 56.

Although the Examiner generally states that the steps of independent claims 1, 11 and 13 “correspond to . . . collecting information, analyzing it, and displaying certain results of the collection and analysis . . . collecting and manipulating data, as well as customizing information . . . searching and retrieving data . . . and obtaining and comparing intangible data” with citations to multiple Federal Circuit cases (Final Act. 3–4), these statements neither: (a) identify the specific limitations in the claims under examination that the Examiner believes recite an abstract idea; nor (b) demonstrate the identified limitations fall within the subject matter groupings of abstract ideas of mathematical concepts, certain methods of organizing human activity, or mental processes. *See* 84 Fed. Reg. 56. In particular, the Examiner neither accounts for all the limitations recited in claim 1, nor

adequately articulates why the claimed concepts are analogous to the facts of *Electric Power Group*, *Intellectual Ventures I*, and *Cybersource*.

Moreover, the Examiner has not adequately addressed the limitation “generating, by the server device, at least a second search query suggestion . . . wherein the expansion is performed by the server device based at least in part on a session history associated with the client device,” as recited in independent claim 1. Independent claims 11 and 13 recite similar limitations.

Accordingly, we are persuaded by Appellant’s arguments that:

Appellant respectfully submits that in its attempt to find that the claim is directed to an abstract idea, the Office has focused incorrectly on, and based its conclusion on, a few concepts, while ignoring the technical claim elements and improvement in computing technology, and more specifically has incorrectly focused on a few concepts in an attempt to conclude that the claims are merely directed to “suggesting queries.” Appellant submits that the Examiner has not pointed to any evidence that the Appellant is indeed attempting to claim any abstract idea. Instead Appellant is claiming an improved search engine technology that automatically utilizes, in a unique way, a received query portion, token pools, text expansion, and client history to generate personalized and relevant search query suggestions.

(Br. 9 (footnote omitted).)

Thus, we do not sustain the rejection of independent claims 1, 11, and 13 under 35 U.S.C. § 101. Claims 2–10, 12, and 14–20 depend from independent claims 1, 11, and 13. We do not sustain the rejection of claims 2–10, 12, and 14–20 under 35 U.S.C. § 101 for the same reasons discussed with respect to independent claims 1, 11, and 13.

*§ 112(a) Rejection*

We are unpersuaded by Appellant’s arguments (Br. 22–25) that the limitation “generating . . . at least a second search query suggestion based at least in part on an expansion of at least a portion of the generated first search query suggestion,” as recited in independent claim 1, complies with the written description requirement under 35 U.S.C. § 112(a).

The Examiner found that “[i]ndependent claim[] 1 . . . recite[s] generating a second search query suggestion by expanding a first search query suggestion,” however, “[t]he specification as originally filed does not disclose expanding a first search query suggestion, but rather, expands the user query” and “is silent as to expanding a suggestion.” (Final Act. 6–7.) We agree with the Examiner’s findings.

Independent claim 1 recites “generating . . . at least a second search query suggestion *based at least in part on an expansion of at least a portion of the generated first search query suggestion . . . based at least in part on a session history*” (emphases added). With respect to the expansion of session history, Appellant’s Specification discloses the following:

In some instances, a session history server 154 stores session histories for a plurality of users (e.g., the user 106). In some example embodiments, *the session history server 154 contains one or more data structures and memory components configured to store query items, query portions, tokens, token portions, and the like associated with each user 106 of the plurality of users 106*. In some situations, the session history server 154 may additionally include data structures configured to store a global session history representative of the session histories and queries of all of the plurality of users 106. In some instances, the session history server 154 is implemented as a component of the search enhancement system 150.

(¶ 32 (emphases added).)

Generating the expansion queue may be understood as an expansion operation in which the *search enhancement system 150 enhances search query suggestions (e.g., the native queue) by first expanding the user query based on her session history and token pool.* The search enhancement system 150 utilizing *multiple expansion strategies to enhance search query suggestions* based on selections, parameters, or desires of the system developer. . . . For each potential query, *the search enhancement system 150 may retrieve corresponding query suggestion results from the session history server 154.*

(¶ 62 (emphases added).)

Because Appellant’s Specification discloses that session history server 154 stores queries from users (¶ 32) and “search enhancement system 150 enhances search query suggestions (e.g., the native queue) by first *expanding the user query* based on her session history” (¶ 62), rather than based on an expansion “of the generated first search query suggestion,” as claimed, Appellant’s Specification does not provides adequate written descriptive support for the limitation “generating . . . at least a second search query suggestion based at least in part on an expansion of at least a portion of the *generated first search query suggestion*” (emphasis added).

Appellant argues the following:

[W]hile the specification does describe that a received user query can be expanded, the specification clearly describes additional features that further enhances suggestions generated based on the user query. More specifically, the generation of the expansion queue “may be understood as an expansion operation in which the search enhancement system enhances search query suggestions (e.g., the native queue) by first expanding the user query based on her session history and token pool.” The specification further recites that “multiple expansion strategies” may be employed to enhance search query suggestions, and further “to expand the current query to a list of potential queries.”

(Br. 22–23 (emphases and footnotes omitted).) However, even if Appellant is correct that “a received user query can be expanded . . . [and additional features] further enhance[] suggestions generated based on the user query” (*id.*), Appellant has not adequately addressed the Examiner’s findings with respect to paragraph 62 of the Specification, which discloses that “search enhancement system 150 enhances search query suggestions (e.g., the native queue) by first expanding the user query based on her session history” (¶ 62). Appellant has also not sufficiently pointed to disclosure in the Specification that the second search query suggestion is generated by expanding at least a portion of the “generated first query suggestion,” as claimed.

Appellant further argues the following:

While it is true that the “expansion module generates search query suggestions using the query portion received by the receiver module 210 and the token pool associated with the client device 110,” the specification clearly recites embodiments where a first set of query suggestions can be generated based in part on the received query portion, that a quality of tokens included in the generated first set of query suggestions can be determined, and that a second search query suggestion set can be generated based on these tokens having a token quality determined to be above a predetermined quality threshold.

(Br. 25 (footnotes omitted).)

Again, even if Appellant is correct that “a second search query suggestion set can be generated based on these tokens having a token quality determined to be above a predetermined quality threshold,” the Examiner’s § 112(a) rejection for lacking adequate written was not based upon search query suggestions based upon tokens. Moreover, Appellant has not sufficiently explained how this alleged disclosure in the Specification of

generating a second search query suggestion based on these tokens discloses generating the second search query suggestion by expanding at least a portion of the “generated first query suggestion,” as claimed.

Thus, we agree with the Examiner that the Specification fails to provide written description support for the limitation “generating . . . at least a second search query suggestion based at least in part on an expansion of at least a portion of the generated first search query suggestion.”

Accordingly, we sustain the rejection of independent claim 1 under 35 U.S.C. § 112(a). Claims 2–10 depend from claim 1, and Appellant has not presented any additional substantive arguments with respect to these claims. Therefore, we sustain the rejection of claims 2–10 under 35 U.S.C. § 112(a), for the same reasons discussed with respect to independent claim 1.

Independent claims 11 and 13 recite limitations similar to those discussed with respect to independent claim 1, and Appellant has not presented any additional substantive arguments with respect to these claims. We sustain the rejection of claims 11 and 13, as well as dependent claims 12 and 14–20, for the same reasons discussed with respect to claim 1.

## DECISION

The Examiner’s decision rejecting claims 1–20 under 35 U.S.C. § 101 is reversed.

The Examiner’s decision rejecting claims 1–20 under 35 U.S.C. § 112(a) is affirmed.

DECISION

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1-20	101	Eligibility		1-20
1-20	112(a)	Written Description	1-20	
<b>Overall Outcome</b>			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)(1)(iv).

AFFIRMED

BAUMEISTER, *Administrative Patent Judge*, concurring.

I join the Majority in affirming the Examiner's ultimate decision to reject claims 1–20, but I would affirm for different reasons. I would affirm the rejection under 35 U.S.C. § 101 because Appellant has not established that the Examiner erred in determining that the claims are directed to a judicial exception to patent-eligible subject matter (an abstract idea) without reciting significantly more. I would reverse the rejection under 35 U.S.C. § 112(a) (pre-AIA § 112, ¶ 1) because the Examiner has not established that the claims fail to comply with the written description requirement. My reasons follow.

## THE SECTION 101 REJECTION

### *The Representative Claim*

Independent claim 1 represents the appealed claims.<sup>2</sup> Claim 1 is reproduced below with paragraph designators added for ease of reference and emphasis added to the claim language that recites an abstract idea:

1. A computer-implemented method, comprising:

[(a)] *receiving*, by a server device, *at least a query portion* from a client device *to conduct a search based at least in part on the received query portion*;

[(b)] *generating*, by the server device, *at least a first search query suggestion based at least in part on a determination that at least the received query portion corresponds to at least one token portion stored in a token pool that includes a plurality of tokens generated by the server device*;

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<sup>2</sup> Appellant argues all of the claims together as a group. Br. 8–21. Accordingly, independent claim 1 can be designated as representative. 37 C.F.R. § 41.37(c)(1)(iv).

[(c)] *generating, by the server device, at least a second search query suggestion based at least in part on an expansion of at least a portion of the generated first search query suggestion, wherein the expansion is performed by the server device based at least in part on a session history associated with the client device; and*

[(d)] *communicating, by the server device, at least the generated first and second search query suggestions to the client device responsive to the received query portion.*

*Step 2A, Prong 1*

Under step 2A, prong 1, of the 2019 Guidance, we first look to whether the claim recites any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activities such as a fundamental economic practice, or mental processes). 2019 Guidance, 84 Fed. Reg. at 52–54.

Limitation (a) of claim 1 recites, “receiving . . . at least a query portion . . . to conduct a search based at least in part on the received query portion.” Receiving a query for data or information constitutes a certain method of organizing human activity. More specifically, receiving a search query constitutes a method of managing interactions between people because the received query provides parameters that constrain or instruct the search that subsequently is to be performed after the generated first and second search queries are communicated in step (d), discussed below. The 2019 Guidance expressly recognizes this certain method of organizing human activity as constituting a patent-ineligible abstract idea. 2019 Guidance, 84 Fed. Reg. at 52.

Receiving a query portion also constitutes a mental process. More specifically, receiving such a query or a communication entails a person making a mental observation. In addition to the category of “certain

methods of organizing human activity,” the 2019 Guidance also recognizes mental processes, including observations, as constituting a patent-ineligible abstract idea. 2019 Guidance, 84 Fed. Reg. at 52.

Accordingly, limitation (a) recites a patent-ineligible abstract idea.

Limitations (b) and (c) recite,

(b) generating . . . at least a first search query suggestion based at least in part on a determination that at least the received query portion corresponds to at least one token portion stored in a token pool that includes a plurality of tokens generated by the server device;

(c) Generating . . . at least a second search query suggestion based at least in part on an expansion of at least a portion of the generated first search query suggestion, wherein the expansion is performed by the server device based at least in part on a session history associated with the client device.

Generating search query suggestions constitutes a mental process, such as an evaluation, judgment, or opinion that can be performed in the human mind. For example, prior to the advent of the Internet, a researcher might ask a librarian or the like for assistance in how to go about searching for a particular topic, and the librarian could provide the researcher search strategies that entail synonyms and related topics and concepts. The 2019 Guidance expressly recognizes such mental processes as constituting patent-ineligible abstract ideas. 2019 Guidance, 84 Fed. Reg. at 52. The “mental processes” judicial exception also includes concepts that can be performed by a human with a pen and paper as well as those that can be performed entirely in the mind. *See* October 2019 Guidance Update at 9 (“A claim that encompasses a human performing the step(s) mentally with the aid of a pen and paper recites a mental process”) (emphasis omitted). Accordingly, limitations (b) and (c) recite a patent-ineligible abstract idea.

Limitation (d) recites, “communicating . . . at least the generated first and second search query suggestions . . . responsive to the received query portion.” For the reasons set forth in relation to limitation (a) above, communicating search query suggestions constitute certain methods of organizing human activity entailing both managing interactions between people and also mental processes that entail expressing judgments or opinions. Accordingly, limitations (d) recites a patent-ineligible abstract idea. 2019 Guidance, 84 Fed. Reg. at 52.

For these reasons, each of limitations (a) through (d) recite judicial exceptions to patent-eligible subject matter under step 2A, prong 1, of the 2019 Guidance. *See RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017) (“Adding one abstract idea . . . to another abstract idea . . . does not render the claim non-abstract.”)

*Step 2A, Prong 2*

Under step 2A, prong 2, of the 2019 Guidance, we next analyze whether claim 1 recites additional elements that individually or in combination integrate the judicial exception into a practical application. 2019 Guidance, 84 Fed. Reg. at 53–55. The 2019 Guidance identifies considerations indicative of whether an additional element or combination of elements integrate the judicial exception into a practical application, such as an additional element reflecting an improvement in the functioning of a computer or an improvement to other technology or technical field. *Id.* at 55; MPEP § 2106.05(a).

The only additional elements in claim 1 beyond the recited abstract ideas noted above consist of the preamble’s recitation that the method is “computer-implemented,” and the claim limitations’ recitations of “a server

device” and “a client device.” These additional elements do not integrate the abstract ideas into a practical application.

For example, the entirety of limitation (a), including the additional elements, recites, “receiving, by a server device, at least a query portion from a client device to conduct a search based at least in part on the received query portion.” This limitation merely is directed to insignificant pre-solution activity.

An example of pre-solution activity is a step of gathering data for use in a claimed process, *e.g.*, a step of obtaining information about credit card transactions, which is recited as part of a claimed process of analyzing and manipulating the gathered information by a series of steps in order to detect whether the transactions were fraudulent.

MPEP § 2106.05(g).

Similarly, claim 1’s final step, “communicating, by the server device, at least the generated first and second search query suggestions to the client device responsive to the received query portion,” does not add any meaningful limitations to the abstract idea because it merely is directed to the insignificant post-solution activity of transmitting data. *See, e.g., Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1241–42 (Fed. Cir. 2016) (holding that printing or downloading generated menus constituted insignificant extra-solution activity).

Appellant argues, for example, that the Examiner overgeneralized the claims, and that the claims, instead, are directed to “an improved search engine technology that automatically utilizes, in a unique way, a received query portion, token pools, text expansion, and client history to generate personalized and relevant search query suggestions.” Br. 9.

This argument is unpersuasive for two reasons. First, the level of abstraction at which the Examiner describes the invention does not change the accuracy of the Examiner’s determination. *Apple v. Ameranth Inc.*, 842 F.3d 1229, 1240 (Fed. Cir. 2016) (“An abstract idea can generally be described at different levels of abstraction.”)

Second, Appellant’s arguments improperly conflate the purported improvements to the abstract idea (using received query portion, token pools, text expansion, and client history to generate personalized and relevant search query suggestions) with the purported improvements to the additional elements (the server and client devices). *See BSG Tech LLC v. BuySeasons, Inc.*, 899 F.3d 1281, 1290 (Fed. Cir. 2018) (“It has been clear since *Alice* that a claimed invention’s use of the ineligible concept to which it is directed cannot supply the inventive concept that renders the invention ‘significantly more’ than that ineligible concept”); *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1151 (Fed. Cir. 2016) (“[A] claim for a new abstract idea is still an abstract idea”); *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1168 (Fed. Cir. 2018) (“What is needed is an inventive concept in the non-abstract application realm”).

Appellant further argues, “the claims automate a process that was previously **not performed by humans or by a computer**. At a minimum, this fact is supported by a finding the Office that the claimed combination of steps are not anticipated or rendered obvious over the prior art.” Br. 16. This argument is unpersuasive. “The ‘novelty’ of any element or steps in a process, or even of the process itself, is of no relevance in determining whether the subject matter of a claim falls within the § 101 categories of possibly patentable subject matter.” *Diamond v. Diehr*, 450 U.S. 175, 188–

89 (1981). A novel and nonobvious claim directed to a purely abstract idea is, nonetheless, patent ineligible. *See Mayo*, 566 U.S. at 90.

For these reasons, Appellant does not persuasively demonstrate that claim 1 is directed to an improvement in the function of a computer or to any other technology or technical field. MPEP § 2106.05(a). Nor does Appellant persuasively demonstrate that claim 1 is directed to a particular machine or transformation, or that claim 1 adds any other meaningful limitations for the purposes of the analysis under Section 101. MPEP §§ 2106.05(b), (c), (e). Accordingly, Appellant does not persuasively demonstrate that claim 1 integrates the recited abstract ideas into a practical application within the meaning of the 2019 Guidance. *See* 2019 Guidance, 84 Fed. Reg. at 52–55.

#### *Step 2B*

Under step 2B of the 2019 Guidance, we are to next analyze whether claim 1 adds any specific limitations beyond the judicial exception that, either alone or as an ordered combination, amount to more than “well-understood, routine, conventional” activity in the field. 2019 Guidance, 84 Fed. Reg. at 56; MPEP § 2106.05(d).

Appellant’s Specification, by describing computer-related components at a high level without details of structure or implementation, indicates that the recited additional elements—a computer-implemented method that includes a server device, and a client device—are well understood, routine and conventional:

FIG. 10 is a block diagram illustrating components of a machine 1000, according to some example embodiments, able to read instructions 1016 from a machine-readable medium (*e.g.*, a machine-readable storage medium) and perform any one or more

of the methodologies discussed herein. . . . [I]nstructions 1016 transform the general, non-programmed machine 1000 into a particular machine programmed to carry out the described and illustrated functions in the manner described. In alternative embodiments, the machine 1000 operates as a standalone device or may be coupled (*e.g.*, networked) to other machines. In a networked deployment, the machine 1000 may operate in the capacity of a server machine or a client machine in a server-client network environment, or as a peer machine in a peer-to-peer (or distributed) network environment. In various embodiments, the machine 1000 may comprise, but not be limited to, a server computer, a client computer, a personal computer (PC), a tablet computer, a laptop computer, a netbook, a set-top box (STB), a personal digital assistant (PDA), an entertainment media system, a cellular telephone, a smart phone, a mobile device, a wearable device (*e.g.*, a smart watch), other smart devices, a web appliance, a network router, a network switch, a network bridge, or any machine capable of executing the instructions 1016, sequentially or otherwise, that specify actions to be taken by machine 1000. Further, while only a single machine 1000 is illustrated, the term “machine” shall also be taken to include a collection of machines 1000 that individually or jointly execute the instructions 1016 to perform any one or more of the methodologies discussed herein.

The machine 1000 may include processors 1010, memory 1030, and I/O components 1050, which may be configured to communicate with each other such as via a bus 1002. In an example embodiment, the processors 1010 (*e.g.*, a central processing unit (CPU), a reduced instruction set computing (RISC) processor, a complex instruction set computing (CISC) processor, a graphics processing unit (GPU), a digital signal processor (DSP), an application specific integrated circuit (ASIC), a radio-frequency integrated circuit (RFIC), another processor, or any suitable combination thereof) may include, for example, processor 1012 and processor 1014 that may execute instructions 1016. The term “processor” is intended to include multi-core processor 1010 that may comprise two or more independent processors 1012, 1014 (sometimes referred to as “cores”) that may execute instructions 1016 contemporaneously.

Although FIG. 10 shows multiple processors 1012, 1014, the machine 1000 may include a single processor 1010 with a single core, a single processor 1010 with multiple cores (*e.g.*, a multi-core process), multiple processors 1010 with a single core, multiple processors 1010 with multiples cores, or any combination thereof.

The memory/storage 1030 may include a memory 1032, such as a main memory, or other memory storage, and a storage unit 1036, both accessible to the processors 1010 such as via the bus 1002. The storage unit 1036 and memory 1032 store the instructions 1016 embodying any one or more of the methodologies or functions described herein. The instructions 1016 may also reside, completely or partially, within the memory 1032, within the storage unit 1036, within at least one of the processors 1010 (*e.g.*, within the processor 1010's cache memory), or any suitable combination thereof, during execution thereof by the machine 1000. Accordingly, the memory 1032, the storage unit 1036, and the memory of processors 1010 are examples of machine-readable media.

Spec. ¶¶ 157–59. Paragraphs 160 through 166 of Appellant's Specification further support the Examiner's finding that Appellant's Specification indicates that a generic computer can perform the claimed invention. Final Act. 4 (citing Spec. ¶¶ 157–64).

Furthermore, Appellant's Specification does not indicate that consideration of these conventional elements as an ordered combination adds any significance beyond the additional elements, as considered individually. Rather, Appellant's Specification indicates that the invention is directed to an abstract idea that is made more efficient with generic computer components:

In various example embodiments, search query suggestions are enhanced and personalized to a user by a search enhancement system based on prior search queries entered by the user. The methods and systems employed by the search enhancement

system to enhance search query suggestions may bias (*e.g.*, expand, remove, and re-rank) the standard search query suggestions with the user's past search queries so as to bring more relevant and personalized search query suggestions. The user's preferences along several dimensions like brand, size, gender, etc. are already captured via her past searches. Utilizing this information and modifying the standard search query suggestions to take into account such implicit preferences may delight the user, and reduce her time to quickly reach relevant search queries. For example, if the user previously entered the search query "gucci handbag," responsive to typing "belt" in the search box a search query suggestion for "gucci belt" may be shown.

Spec. ¶ 18.

For these reasons, claim 1 does not recite additional elements that, either individually or as an ordered combination, amount to significantly more than the judicial exception within the meaning of the 2019 Guidance. 2019 Guidance, 84 Fed. Reg. at 52–55; MPEP § 2106.05(d).

Accordingly, I would affirm the Examiner's rejection of claim 1 under 35 U.S.C. § 101 as being directed to an exception to patent-eligible subject matter without reciting significantly more. I, likewise, would affirm the section 101 rejection of claims 2–20, which Appellant does not argue separately. Br. 8–21.

#### THE SECTION 112(a) REJECTION

The Examiner bases the written-description rejection on the rationale, "[i]ndependent claim[] 1 . . . recite[s] generating a second search query suggestion by expanding a first search query suggestion," however, "[t]he specification as originally filed does not disclose expanding a first search

query suggestion, but rather, expands the user query” and “is silent as to expanding a suggestion.” Final Act. 6–7.

Appellant argues that the originally filed Specification recites, *inter alia*,

The native results may indicate the method 300, 500, or 600 having been partially performed, as in operations 320, 340, 620, and 640. As shown, after performing operation 320 or 620, the native results lack query suggestions related to or including Gucci, in some embodiments. The expansion result module 250 may perform the operations 340 or 640. **The expansion result module 250 generates two query items “Gucci shoes” and “Gucci shoes men,” which may be determined to have a higher relative relevance than the query suggestion of the native result module 220.**

Br. 25 (citing Spec. ¶ 110) (emphasis added in Appellant’s Brief).

This passage indicates that in at least this embodiment, the second suggestion is compared to the first suggestion, is found to have a higher relevance, and, for that reason, is used to expand the first suggestion. Accordingly, the Examiner has not established that the disputed claim language is unsupported. I, therefore, would reverse the written description rejection under 35 U.S.C. § 112(a).