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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* DAVID A. JARED  
and DAVID M. WEINSTEIN

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Appeal 2019-006990  
Application 14/534,744  
Technology Center 3600

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Before KALYAN K. DESHPANDE, CHARLES J. BOUDREAU,  
and SHARON FENICK, *Administrative Patent Judges*.

BOUDREAU, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>1</sup> appeals from the Examiner's decision to reject claims 1, 3–6, 12–14, 16, 17, 21, and 26–34, which are all of the pending claims. We have jurisdiction under 35 U.S.C. § 6(b)(1).

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 Adobe Systems Incorporated as the real party in interest. Appeal Br. 1.

CLAIMED SUBJECT MATTER

Appellant's invention relates generally to "calculating and estimating changes in audience size" and more particularly to "near real-time estimation of audience segment sizes over time," including in marketing applications. Spec. ¶ 1; *see id.* ¶¶ 2–3.

Claims 1, 14, and 17 are independent. Claim 17, reproduced below, is illustrative of the subject matter on appeal:

17. A system comprising:

a web server configured to:

receive a request for calculation of size of an audience segment, the request comprising a segment rule that includes one or more visitor traits of members of the audience segment and a time range including at least a future time duration;

create, from the request, a plurality of database queries comprising the one or more visitor traits and corresponding to a past time period;

receive from a secondary device, a plurality of responses corresponding to the plurality of database queries, each response indicating a size of the audience segment matching the segment rule during a respective past time period;

concatenate the plurality of responses into a time series, thereby evaluating the segment rule; and

generate a prediction of a future size of the audience segment for a future time duration by applying a predictive model to the time series;

a master device configured to, on a periodic basis:

receive a sampled subset of audience data,

index the sampled subset of audience data by date and time, and

transmit a replicated set of audience data comprising the indexed data to the secondary device; and

the secondary device, wherein the secondary device is configured to:

receive the replicated set of audience data from a master device,

receive, from the web server, the plurality of database queries,

generate the plurality of responses by determining, from the replicated set of audience data and for each of the plurality of database queries, a respective one of the plurality of responses, and

transmit the plurality of responses to the web server.

Appeal Br. 21 (Claims App.).

## REJECTION

Claims 1, 3–6, 12–14, 16, 17, 21, and 26–34 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Final Act. 2–7.

## OPINION

An invention is patent-eligible if it claims a “new and useful process, machine, manufacture, or composition of matter, or [a] new and useful improvement thereof.” 35 U.S.C. § 101. However, the U.S. Supreme Court has long interpreted § 101 to “contain[] an important implicit exception: Laws of nature, natural phenomena, and abstract ideas are not patentable.” *Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014) (quoting *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 589 (2013)).

In *Alice*, the Supreme Court reiterated the two-step framework previously set forth in *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 75–77 (2012) “for distinguishing patents that claim laws of

nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts.” *Alice*, 573 U.S. at 217. The first step in this analysis is to “determine whether the claims at issue are directed to one of those patent-ineligible concepts,” e.g., to an abstract idea. *Id.* Concepts determined to be abstract ideas include certain methods of organizing human activity, such as fundamental economic practices (*id.* at 219–20; *Bilski v. Kappos*, 561 U.S. 593, 611 (2010)); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). If it is determined that the claims are directed to a patent-ineligible concept, the second step of the analysis requires consideration of the elements of the claims “individually and ‘as an ordered combination’” to determine whether there are additional elements that “‘transform the nature of the claim’ into a patent-eligible application.” *Alice*, 573 U.S. at 217 (quoting *Mayo*, 566 U.S. at 78, 79). “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.* at 221 (alterations in original) (quoting *Mayo*, 566 U.S. at 77). In other words, the claims must contain an “inventive concept,” or some element or combination of elements “sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [abstract idea] itself.” *Id.* at 217–18 (quoting *Mayo*, 566 U.S. at 72–73). “[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention.” *Id.* at 221.

In January 2019, the PTO published revised guidance on the application of § 101. 2019 Revised Patent Subject Matter Eligibility

Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) (“Revised Guidance”).<sup>2</sup> “All USPTO personnel are, as a matter of internal agency management, expected to follow the guidance.” *Id.* at 51; *see also* October 2019 Update at 1.

Consistent with<sup>3</sup> 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 fundamental economic practices, or mental processes) (“Step 2A, Prong 1”); and
- (2) additional elements that integrate the judicial exception into a practical application (*see* MPEP §§ 2106.05(a)–(c), (e)–(h) (9th ed. Rev. 08.2017, Jan. 2018)) (“Step 2A, Prong 2”).<sup>4</sup>

*See* Revised Guidance, 84 Fed. Reg. at 52–55.

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<sup>2</sup> In October 2019, in response to received public comments, the PTO issued a further memorandum clarifying the Revised Guidance. USPTO Memorandum, October 2019 Update: Subject Matter Eligibility (Oct. 17, 2019), *available at* [https://www.uspto.gov/sites/default/files/documents/peg\\_oct\\_2019\\_update.pdf](https://www.uspto.gov/sites/default/files/documents/peg_oct_2019_update.pdf) (“October 2019 Update”).

<sup>3</sup> Our reviewing court has explained that the Revised Guidance “cannot modify or supplant the Supreme Court’s law regarding patent eligibility, or [our reviewing court’s] interpretation and application thereof.” *In re Rudy*, 956 F.3d 1379, 1383 (Fed. Cir. 2020). Our decision is based upon applicable statutory authority and precedent of the United States Supreme Court and Court of Appeals for the Federal Circuit and applies the analytical framework set forth in the Revised Guidance in a manner consistent with authority and precedent.

<sup>4</sup> This evaluation is performed by (a) identifying whether there are any additional elements recited in the claim beyond the judicial exception, and (b) evaluating those additional elements individually and in combination to determine whether the claim as a whole integrates the exception into a practical application. *See* Revised Guidance, 84 Fed. Reg. at 54–55 (Section III.A.2).

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

(3) adds a specific limitation beyond the judicial exception that is not “well-understood, routine, and 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* Revised Guidance, 84 Fed. Reg. at 56.

The Examiner determines that the claims recite certain methods of organizing human activity as well as mental processes and, thus, an abstract idea. Final Act. 4; Ans. 4–5. The Examiner further determines that the abstract idea is not integrated into a practical application because the additionally recited “web server,” “master device,” and “secondary device” are generic computing devices performing generic functions of “receiving, generating, and transmitting.” Ans. 5–6. Finally, the Examiner determines that the claims do not contain an inventive concept or include additional elements that are sufficient to amount to significantly more than the abstract idea. *Id.* at 6; Final Act. 5–7. Specifically, the Examiner finds that the additionally recited elements “do not provide any improvements to the functioning of a computer/computer network itself” and amount to no more than mere instructions to apply the judicial exception using generic computer components. Ans. 6; *see* Final Act. 5–7.

Appellant argues that the claims “are directed to a unique combination of computing devices that use a set of rules that improve computer-related technology by facilitating an efficient response to queries for audience size.” Appeal Br. 5. According to Appellant, any abstract idea recited in the

claims is integrated into a practical application because the claims recite a particular machine that is integral to the claims by “requiring a particular configuration of computing devices.” *Id.* at 6–7; *see* Reply Br. 6. For example, Appellant argues that, “by using a master device and a secondary device, the system recited in claim 17 is able to more quickly service queries, resulting [i]n audience prediction being obtained more quickly.” Appeal Br. 11; *see* Reply Br. 5. Thus, Appellant argues, the claims recite a “nonconventional and non-generic arrangement of elements to provide a technical improvement” and significantly more than an abstract idea. Appeal Br. 12 (emphasis omitted); *see* Reply Br. 5. Finally, Appellant argues that the Examiner has not demonstrated that the combination of additional elements recited in the claims is well-understood, routine, or conventional. Appeal Br. 14–16; Reply Br. 1–4.

*Step 2A, Prong 1*

We agree with the Examiner that the claims recite a judicial exception, i.e., an abstract idea. *See* Ans. 5. Specifically, we agree that the claims recite mental processes. *See id.*

For example, independent claim 17 recites “creat[ing], from the request, a plurality of database queries comprising the one or more visitor traits and corresponding to a past time period,” “concatenat[ing] the plurality of responses into a time series, thereby evaluating the segment rule,” “generat[ing] a prediction of a future size of the audience segment for a future time duration by applying a predictive model to the time series,” “index[ing] the sampled subset of audience data by date and time,” and “generat[ing] the plurality of responses by determining, from the replicated set of audience data and for each of the plurality of database queries, a



respective one of the plurality of responses,” “each response indicating a size of the audience segment matching the segment rule during a respective past time period.” Under their broadest reasonable interpretation, these “creat[ing],” “concatenat[ing],” “generat[ing],” and “index[ing]” limitations cover performance of the limitations in the mind (as do corresponding limitations in independent claims 1 and 14), but for the recitation of generic components. That is, other than the “web server,” “master device,” and “secondary device” recited in claim 17 (and similar elements recited in claims 1 and 14) as performing those recited steps, nothing in the claims precludes those steps from being performed in the human mind. For example, but for the recitation of the “web server,” “master device,” and “secondary device,” claim 17 encompasses *mentally* creating a plurality of queries comprising the one or more visitor traits and corresponding to a past time period; *mentally* concatenating the plurality of responses into a time series, thereby *mentally* evaluating the segment rule; *mentally* generating a prediction of a future size of the audience segment for a future time duration by *mentally* applying a predictive model to the time series; *mentally* indexing the sampled subset of audience data by date and time; and *mentally* generating the plurality of responses indicating a size of the audience segment matching the segment rule during a respective past time period by *mentally* determining, from the replicated set of audience data and for each of the plurality of database queries, a respective one of the plurality of responses.

Accordingly, the claims recite mental processes and, thus, an abstract idea.

*Step 2A, Prong 2*

Because the claims recite an abstract idea, we next look to whether the claims recite additional elements that integrate the abstract idea into a practical application. Revised Guidance, 84 Fed. Reg. at 54. Claim limitations that indicate integration into a practical application include additional elements that reflect an improvement in the functioning of a computer, or an improvement to other technology or technical field. *Id.* at 55. When a claim recites a judicial exception and fails to integrate the judicial exception into a practical application, the claim is “directed to” the judicial exception. *Id.* at 51.

We agree with the Examiner that the additional limitations recited in the claims do not integrate the recited judicial exception into a practical application. *See* Ans. 5–6. For example, claim 17 additionally recites “receiv[ing] a request for calculation of size of an audience segment, the request comprising a segment rule that includes one or more visitor traits of members of the audience segment and a time range including at least a future time duration,” “receiv[ing] from a secondary device, a plurality of responses corresponding to the plurality of database queries,” “receiv[ing] a sampled subset of audience data,” “receiv[ing] the replicated set of audience data from a master device,” and “receiv[ing], from the web server, the plurality of database queries,” as well as “transmit[ting] a replicated set of audience data comprising the indexed data to the secondary device” and “transmit[ting] the plurality of responses to the web server.” These “receiv[ing]” and “transmit[ting]” limitations are recited at a high level of generality (i.e., as general steps of collecting various information used to predict a future size of an audience segment and transmitting information

used to predict a future size of an audience segment, respectively) and amount to insignificant pre- or post-solution activity. *See Revised Guidance*, 84 Fed. Reg. at 55; MPEP § 2106.05(g).

We further agree with the Examiner that the claims otherwise merely recite generic computer components that similarly fail to integrate the recited abstract idea into a practical application. *See Ans. 5–6*. For example, claim 17 additionally recites a “web server,” “master device,” and “secondary device.” As the Examiner points out, these limitations are recited at a high level of generality, i.e., as generic components performing generic computer functions of computer processing and communication. *See id.* at 5; Spec. ¶¶ 49–50 (describing a “master cluster” and “slave cluster” as clusters of servers). The claims merely apply the abstract idea using generic computer components and indicate a field of use or technological environment (i.e., computer software) for predicting a future size of an audience segment. *See Revised Guidance*, 84 Fed. Reg. at 55; MPEP § 2106.05(f), (h).

Appellant argues that the claims recite a particular machine that is integral to the claims (Appeal Br. 7)—“a unique combination of devices including a web server, a master device, and a secondary device that perform different functions and operate together to efficiently respond to queries for audience size” (*id.* at 9). *See Revised Guidance*, 84 Fed. Reg. at 55; MPEP § 2106.05(b). Although Appellant argues that the claims “requir[e] a particular configuration of computing devices” (Appeal Br. 7), we disagree that the claims recite a particular machine because, as discussed above, the “web server,” “master device,” and “secondary device” are generic computer components (servers) performing generic computer functions. The claims

merely implement the abstract idea with general purpose computer components, not a particular machine. *See Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 716–17 (Fed. Cir. 2014) (determining that claims tied to a general purpose computer or the Internet are not tied to a particular machine); *In re TLI Commc'ns LLC Patent Litig.*, 823 F.3d 607, 611–12 (Fed. Cir. 2016) (finding that a server “merely provide[s] a generic environment in which to carry out the abstract idea” when “described simply in terms of performing generic computer functions such as storing, receiving, and extracting data”). Moreover, the Specification provides that “[t]he systems or systems discussed herein are not limited to any particular hardware architecture or configuration. A computing device can include any suitable arrangement of components that provide a result conditioned on one or more inputs.” Spec. ¶ 132. “Any suitable programming, scripting, or other type of language or combinations of languages may be used to implement the teachings contained herein in software to be used in programming or configuring a computing device.” *Id.*

Appellant further argues that the claimed invention “improve[s] computer-related technology by facilitating an efficient response to queries for audience size.” Appeal Br. 5. For example, Appellant argues that, “by using a master device and a secondary device, the system recited in claim 17 is able to more quickly service queries, resulting [i]n audience prediction being obtained more quickly.” *Id.* at 11; *see* Reply Br. 5. We are unpersuaded by Appellant’s argument and agree with the Examiner that the claims do not recite a technological improvement in addition to the abstract idea. *See* Ans. 6; Final Act. 5–7.

As discussed above, the recited “web server,” “master device,” and “secondary device” are merely generic computer components performing generic functions of computer processing and communication. The other additionally recited elements, i.e., the “receiv[ing]” and “transmit[ing]” steps, merely involve collecting or sending data and “do not require an arguably inventive set of components or methods, such as measurement devices or techniques, that would generate new data” or “invoke any assertedly inventive programming.” *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1355 (Fed. Cir. 2016). Although Appellant argues that the claimed features “enable a more effective use of computing resources . . . . by distinguishing between different audience groups” (Appeal Br. 12 (emphasis omitted)), the differentiation between audience groups results from the recited “segment rule” including “visitor traits,” which, as discussed above in the analysis under Step 2A, Prong 1, are part of the mental processes/abstract idea. The claims simply recite an existing practice—predicting an audience size for marketing and advertisements—with the benefit of generic computer technology. *See OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1363 (Fed. Cir. 2015) (finding that “relying on a computer to perform routine tasks more quickly or more accurately is insufficient to render a claim patent eligible”). Thus, the claims do not reflect an improvement in computer functionality or to any other technology or technical field. *See Revised Guidance*, 84 Fed. Reg. at 55; MPEP § 2106.05(a).

Even in combination, the additional limitations do not integrate the abstract idea into a practical application because they do not impose any meaningful limits on practicing the abstract idea. Accordingly, we agree

with the Examiner that the claims are directed to an abstract idea. *See* Ans. 6.

*Step 2B*

Turning to Step 2B of the Revised Guidance, we agree with the Examiner that there are no specific limitations beyond the judicial exception, i.e., the abstract idea, that are not well-understood, routine, and conventional in the field. *See* Final Act. 6; Ans. 8; *Alice*, 573 U.S. at 225.

For example, the “web server,” “master device,” and “secondary device” additionally recited in claim 17 are mere recitations of generic computer components performing generic computer functions that are well-understood, routine, and conventional, and thus do not amount to significantly more than the abstract idea. *See, e.g.*, Spec. ¶¶ 13 (generally referring to “server devices” and “servers”), 48 (disclosing “web server 432 . . . implemented as an Apache Tomcat web service” and “comparable web services”), 49–50 (describing a “master cluster” and “slave cluster” as clusters of servers, such as “Solr servers”). As indicated by the Examiner, those additional elements amount to no more than mere instructions to apply the abstract idea using generic computer components, which do not provide an inventive concept. *See* Final Act. 5; Ans. 6; *Alice*, 573 U.S. at 223–24.

Reevaluating the extra-solution activity of “receiv[ing] a request for calculation of size of an audience segment, the request comprising a segment rule that includes one or more visitor traits of members of the audience segment and a time range including at least a future time duration,” “receiv[ing] from a secondary device, a plurality of responses corresponding to the plurality of database queries,” “receiv[ing] a sampled subset of audience data,” “receiv[ing] the replicated set of audience data from a

master device,” and “receiv[ing], from the web server, the plurality of database queries” (see Revised Guidance, 84 Fed. Reg. at 56 (stating that a conclusion under Step 2A that an additional element is insignificant extra-solution activity should be reevaluated in Step 2B)), we find nothing unconventional in these steps of collecting the various information used to predict a future size of an audience segment. Likewise, reevaluating the extra-solution activity of “transmit[ting] a replicated set of audience data comprising the indexed data to the secondary device” and “transmit[ting] the plurality of responses to the web server,” we find nothing unconventional in these steps of transmitting information used to predict a future size of an audience segment.

Appellant has not shown that the claims on appeal add any specific limitation beyond the judicial exception that is not well-understood, routine, and conventional in the field. While Appellant argues that the claims recite a “nonconventional and non-generic arrangement of elements to provide a technical improvement” (Appeal Br. 12 (emphasis omitted)) and that the Examiner has not demonstrated the *combination* of additional elements to be well-understood, routine, or conventional (Appeal Br. 14–16 (citing *Berkheimer v. HP, Inc.*, 881 F.3d 1360, 1368 (Fed. Cir. 2018)); Reply Br. 1–4), we are unpersuaded by Appellant that the additional elements are unconventional in combination. Specifically, we find that the combination of the additional elements (“web server,” “master device,” “secondary device,” and extra-solution steps of “receiv[ing]” and “transmit[ting]” information or data) merely reflects receiving and transmitting data across multiple generic computer components. We agree with the Examiner that “the ordered combination adds nothing that is not already present when

looking at the elements taken individually.” Final Act. 6. Thus, Appellant has not shown that the ordered combination of claim elements is unconventional or amounts to significantly more than the abstract idea to which the claims are otherwise directed.

Accordingly, considering the claim elements individually and as an ordered combination, we agree with the Examiner that there are no meaningful claim limitations that represent sufficiently inventive concepts to transform the nature of the claims into a patent-eligible application of the abstract idea. *See* Final Act. 8; Ans. 6.

For the foregoing reasons, we sustain the Examiner’s rejection of claims 1, 3–6, 12–14, 16, 17, 21, and 26–34 under 35 U.S.C. § 101.

#### CONCLUSION

We affirm the Examiner’s rejection of claims 1, 3–6, 12–14, 16, 17, 21, and 26–34 under 35 U.S.C. § 101.

#### DECISION SUMMARY

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1, 3–6, 12–14, 16, 17, 21, 26–34	101	Eligibility	1, 3–6, 12–14, 16, 17, 21, 26–34	



Appeal 2019-006990  
Application 14/534,744

**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**