UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/984,244	11/15/2007	Hans Marius Holtan	00008-0187-00000	6508

114629	7590	09/16/2019	

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ART UNIT	PAPER NUMBER
3696	

NOTIFICATION DATE	DELIVERY MODE
09/16/2019	ELECTRONIC

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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 HANS MARIUS HOLTAN
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Appeal 2018-006766
Application 11/984,244
Technology Center 3600
————————

Before KARA L. SZPONDOWSKI, SCOTT B. HOWARD, and
STEVEN M. AMUNDSON, *Administrative Patent Judges*.

AMUNDSON, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant[1] seeks our review under 35 U.S.C. § 134(a) from a final
rejection of claims 1, 4–16, 19, 20, and 22–25, i.e., all pending claims. We
have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

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[1] 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
Oath (Americas) Inc. Appeal Br. 1.

STATEMENT OF THE CASE

The Invention

According to the Specification, the invention relates to "facilitating the interaction of parties engaged in electronic market transactions, and more specifically, to allocating electronic advertising opportunities to a plurality of advertisers in an economically efficient manner," e.g., "in a way that maximizes . . . profit." Spec. ¶¶ 1, 4.[2] The Specification explains that a "problem for a facilitator of electronic advertising is choosing how to allocate an inventory of advertising spaces among a plurality of available advertisements." *Id.* ¶ 4.

Hence, according to the Specification, the invention endeavors to provide improved "advertising space inventory allocation techniques." *Id.* ¶ 7. The invention "allocat[es] advertisements for display" by, among other things, "creating a qualified advertisement ranking by sorting the qualified advertisements by bid price" and "selecting advertisements from the qualified advertisement ranking until the sum of target inventory percentages of selected advertisements is equal to or greater than 100 percent." *Id.* ¶ 8, Abstract; *see also id.* ¶¶ 9–10.

Exemplary Claim

Independent claim 1 exemplifies the claims at issue and reads as follows:

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[2] This decision uses the following abbreviations: "Spec." for the Specification, filed November 15, 2007; "Final Act." for the Final Office Action, mailed May 4, 2017; "Appeal Br." for the Appeal Brief, filed January 8, 2018; "Ans." for the Examiner's Answer, mailed April 20, 2018; and "Reply Br." for the Reply Brief, filed June 20, 2018.

1. A computer-implemented method of allocating advertisements for display on a web page, the method comprising the following operations performed by one or more processors:

collecting a plurality of advertising spaces, each advertising space having associated advertising space variables that indicate a first Internet web browser type and a first internet protocol (IP) address;

collecting a media inventory, the media inventory comprising a plurality of advertisements, each of the plurality of advertisements having associated advertisement variables that indicate a second Internet web browser type and a second IP address;

receiving, over a communications network, initial bid information and initial target inventory percentage information for each of the plurality of advertisements, wherein the initial target inventory percentage information indicates a percentage of the plurality of advertising spaces that an advertiser is willing to purchase;

collecting data related to a performance of the plurality of advertisements, the plurality of advertising spaces, at least one advertiser, and at least one publisher;

calculating an optimized bid price and an optimized target inventory percentage based on the at least one advertising space variable associated with one of the plurality of advertising spaces, the at least one advertisement variable associated with each of the plurality of advertisements, and the collected data;

identifying qualified advertisements from the plurality of advertisements that are qualified to receive an impression at one of the plurality of advertising spaces based on a match between:

the first Internet web browser type and the second Internet web browser type; and

a geographic region determined from the first IP address and the second IP address;

creating a qualified advertisement ranking by sorting the qualified advertisements by optimized bid price and optimized target inventory percentage;

selecting qualified advertisements from the qualified advertisement ranking until the sum of optimized target inventory percentages of the selected qualified advertisements is equal to or greater than 100 percent, wherein if two or more qualified advertisements from the qualified advertisement ranking have the same optimized bid price and the addition of any one of such qualified advertisements would cause the sum of the optimized target inventory percentages of selected qualified advertisements to be greater than or equal to 100 percent, all qualified advertisements having the same optimized bid price become selected qualified advertisements; and

allocating advertising impressions to the selected qualified advertisements.

Appeal Br. 25–26 (Claims App.).

The Rejection on Appeal

Claims 1, 4–16, 19, 20, and 22–25 stand rejected under 35 U.S.C. § 101 as directed to patent-ineligible subject matter. Final Act. 5–8.

ANALYSIS

We have reviewed the rejection in light of Appellant's arguments that the Examiner erred. For the reasons explained below, we agree with the Examiner's conclusion concerning ineligibility under § 101. We adopt the Examiner's findings and reasoning in the Final Office Action and Answer. *See* Final Act. 3–8; Ans. 3–10. We provide the following to address and emphasize specific findings and arguments.

Introduction

The Patent Act defines patent-eligible subject matter broadly: "Whoever invents or discovers any new and useful process, machine,

manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title." 35 U.S.C. § 101. In *Mayo* and *Alice*, the Supreme Court explained that § 101 "contains an important implicit exception" for laws of nature, natural phenomena, and abstract ideas. *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 70 (2012); *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014); *see Diamond v. Diehr*, 450 U.S. 175, 185 (1981). In *Mayo* and *Alice*, the Court set forth a two-step analytical framework for evaluating patent-eligible subject matter. *Mayo*, 566 U.S. at 77–80; *Alice*, 573 U.S. at 217–18.

Under *Mayo/Alice* step one, we "determine whether the claims at issue are directed to" a judicial exception, i.e., an abstract idea, a law of nature, or a natural phenomenon. *Alice*, 573 U.S. at 217. Step one involves looking at the "focus" of the claims at issue and their "character as a whole." *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1167 (Fed. Cir. 2018).

In January 2019, the PTO issued revised guidance for determining whether claims are directed to a judicial exception. *See 2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (Jan. 7, 2019) ("2019 Guidance"). The 2019 Guidance applies to the Board. *Id.* at 50–51, 57 n.42; *see* 35 U.S.C. § 3(a)(2)(A) (investing the Director with responsibility "for providing policy direction" for the PTO). Neither the Examiner nor Appellant had the benefit of the 2019 Guidance when presenting their respective positions concerning subject-matter eligibility.

The 2019 Guidance specifies two prongs for the analysis under *Mayo/Alice* step one (PTO step 2A). 84 Fed. Reg. at 54–55. Prong one requires evaluating "whether the claim recites a judicial exception, *i.e.*, an

abstract idea, a law of nature, or a natural phenomenon." *Id.* at 54. "If the claim does not recite a judicial exception, it is not directed to a judicial exception," and it satisfies § 101. *Id.* "If the claim does recite a judicial exception, then it requires further analysis" under prong two. *Id.* Prong two requires evaluating "whether the claim as a whole integrates the recited judicial exception into a practical application of the exception." *Id.* "When the exception is so integrated, then the claim is not directed to a judicial exception," and it satisfies § 101. *Id.* "If the additional elements do not integrate the exception into a practical application, then the claim is directed to the judicial exception," and it "requires further analysis" under *Mayo/Alice* step two (PTO step 2B). *Id.*

Under *Mayo/Alice* step two, we "consider the elements of each claim both individually and 'as an ordered combination' to determine whether the additional elements" add enough to transform the "nature of the claim" into "significantly more" than the judicial exception. *Alice*, 573 U.S. at 217–18, 221–22 (quoting *Mayo*, 566 U.S. at 78–79). Step two involves the search for an "inventive concept." *Alice*, 573 U.S. at 217–18, 221; *Univ. of Fla. Research Found., Inc. v. Gen. Elec. Co.*, 916 F.3d 1363, 1366 (Fed. Cir. 2019). "[A]n inventive concept must be evident in the claims." *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017).

Mayo/Alice Step One: PTO Step 2A Prong One

For *Mayo/Alice* step one, the Federal Circuit has noted that "[a]n abstract idea can generally be described at different levels of abstraction." *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1240 (Fed. Cir. 2016). Here, the Examiner determines that the claims are directed to an "economic practice[] in which monetary transactions between people are managed," in

particular, "allocating advertisements for display on a web page." Final Act. 3–4, 6; Ans. 4–5, 8. The Examiner reasons that the concept does not differ meaningfully from "those economic concepts found by the courts to be abstract ideas." Final Act. 4, 6; Ans. 5.

Appellant disputes that independent claims 1, 20, and 22 are directed to an abstract idea. *See* Appeal Br. 14–21. Specifically, Appellant asserts that the Examiner overgeneralizes the claims and "only considers certain portions of the claims." Appeal Br. 14–18; *see* Reply Br. 3–7.

We disagree. In determining that the claims are directed to an abstract idea, the Examiner accurately assesses the "focus" of the claims and their "character as a whole." *See* Final Act. 5–8; Ans. 4–7, 8–10; *see also SAP Am.*, 898 F.3d at 1167.

In addition, we determine that the claims recite abstract ideas falling within two of the three groupings of abstract ideas specified in the 2019 Guidance, i.e., "certain methods of organizing human activity" and "mental processes." *See* 84 Fed. Reg. at 51–52. First, according to the 2019 Guidance, "certain methods of organizing human activity" include "advertising, marketing or sales activities or behaviors." *Id.* at 52. As explained below, each independent claim recites "advertising, marketing or sales activities or behaviors" in various limitations.

Specifically, claim 1 recites the following limitations:

- "collecting a plurality of advertising spaces, each advertising space having associated advertising space variables that indicate a first Internet web browser type and a first internet protocol (IP) address";

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- "collecting a media inventory, the media inventory comprising a plurality of advertisements, each of the plurality of advertisements having associated advertisement variables that indicate a second Internet web browser type and a second IP address";

- "receiving . . . initial bid information and initial target inventory percentage information for each of the plurality of advertisements, wherein the initial target inventory percentage information indicates a percentage of the plurality of advertising spaces that an advertiser is willing to purchase";

- "collecting data related to a performance of the plurality of advertisements, the plurality of advertising spaces, at least one advertiser, and at least one publisher";

- "calculating an optimized bid price and an optimized target inventory percentage based on the at least one advertising space variable associated with one of the plurality of advertising spaces, the at least one advertisement variable associated with each of the plurality of advertisements, and the collected data";

- "identifying qualified advertisements from the plurality of advertisements that are qualified to receive an impression at one of the plurality of advertising spaces based on a match between: the first Internet web browser type and the second Internet web browser type; and a geographic region determined from the first IP address and the second IP address";

- "creating a qualified advertisement ranking by sorting the qualified advertisements by optimized bid price and optimized target inventory percentage";

- "selecting qualified advertisements from the qualified advertisement ranking until the sum of optimized target inventory percentages of the selected qualified advertisements is equal to or greater than 100 percent, wherein if two or more qualified advertisements from the qualified advertisement ranking have the same optimized bid price and the addition of any one of such qualified

> advertisements would cause the sum of the optimized
> target inventory percentages of selected qualified
> advertisements to be greater than or equal to 100 percent,
> all qualified advertisements having the same optimized
> bid price become selected qualified advertisements"; and
>
> - "allocating advertising impressions to the selected
>   qualified advertisements."

Appeal Br. 25–26. Claims 20 and 22 recite similar limitations. *Id.* at 29–33.

The above-identified limitations encompass "advertising, marketing or sales activities or behaviors" because they specify allocating advertising impressions to qualified advertisements that are selected based on rankings from bid prices and target-inventory percentages. As noted above, the 2019 Guidance identifies "advertising, marketing or sales activities or behaviors" as among the enumerated methods of organizing human activity, and thus an abstract idea. 84 Fed. Reg. at 52; *see also OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1361–63 (Fed. Cir. 2015) (deciding that the claimed concept of "offer-based price optimization" is an abstract idea "similar to other 'fundamental economic concepts' found to be abstract ideas by the Supreme Court and this court").

Second, the 2019 Guidance describes "mental processes" as "concepts performed in the human mind," such as "an observation, evaluation, judgment, [or] opinion." 84 Fed. Reg. at 52 (footnote omitted). As explained below, each independent claim recites "mental processes" in various limitations.

For instance, claim 1 recites the following limitations:

- "identifying qualified advertisements from the plurality of advertisements that are qualified to receive an impression at one of the plurality of advertising spaces based on a match between: the first Internet web browser type and the second Internet web browser type; and a geographic region determined from the first IP address and the second IP address";

- "creating a qualified advertisement ranking by sorting the qualified advertisements by optimized bid price and optimized target inventory percentage";

- "selecting qualified advertisements from the qualified advertisement ranking until the sum of optimized target inventory percentages of the selected qualified advertisements is equal to or greater than 100 percent, wherein if two or more qualified advertisements from the qualified advertisement ranking have the same optimized bid price and the addition of any one of such qualified advertisements would cause the sum of the optimized target inventory percentages of selected qualified advertisements to be greater than or equal to 100 percent, all qualified advertisements having the same optimized bid price become selected qualified advertisements"; and

- "allocating advertising impressions to the selected qualified advertisements."

Appeal Br. 25–26. Again, claims 20 and 22 recite similar limitations. *Id.* at 29–33.

The above-identified limitations encompass evaluations practically performed by a human mentally or with pen and paper. For example, a person could identify qualified advertisements for an advertising space by mentally matching web browser types and mentally matching geographic regions. If that mental matching resulted in, for instance, five qualified advertisements, the person could rank the qualified advertisements by

arranging them based on bid price or target-inventory percentage. From that ranking of qualified advertisements, the person could mentally select a sufficient number of qualified advertisements, for instance, three qualified advertisements, to reach or exceed 100 percent of the advertising space. After mentally selecting a sufficient number of qualified advertisements, the person could allocate advertising impressions to the selected qualified advertisements, e.g., with pen and paper.

For these reasons, the above-identified limitations encompass evaluations practically performed by a human mentally or with pen and paper. The 2019 Guidance identifies an evaluation practically performed by a human mentally or with pen and paper as a mental process, and thus an abstract idea. 84 Fed. Reg. at 52 & nn.14–15; *see also Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1318 (Fed. Cir. 2016) ("[W]ith the exception of generic computer-implemented steps, there is nothing in the claims themselves that foreclose them from being performed by a human, mentally or with pen and paper.") ("*Symantec*").

Mayo/Alice Step One: PTO Step 2A Prong Two

Because we determine that each independent claim recites abstract ideas, we consider whether each claim as a whole integrates the recited abstract ideas into a practical application. *See* 84 Fed. Reg. at 54–55. "Only when a claim recites a judicial exception and fails to integrate the exception into a practical application, is the claim 'directed to' a judicial exception . . . ." *Id.* at 51.

As additional elements, claims 1, 20, and 22 recite computer-system components, in particular, a "processor" or "processors," a "storage device," a "communications network," and interfaces, i.e., a "publisher interface" and

an "advertiser interface." Appeal Br. 25, 29–32. Claim 22 also recites an "exchange." *Id.* Broadly but reasonably interpreted in light of the Specification, an "exchange" encompasses a software program. *See*, *e.g.*, Spec. ¶ 23. For example, the Specification explains that "[e]xchange 105 may be a software program." *Id.*

We determine that each independent claim as a whole does not integrate the recited abstract ideas into a practical application because the additional elements do not impose meaningful limits on the abstract ideas. *See* 84 Fed. Reg. at 53–54; *see also* Final Act. 6–8. The claimed computer-system components constitute generic computer-system components that perform generic computer functions. *See* Final Act. 6–7; Ans. 5–6, 8–9; *see also* Spec. ¶ 23.

Appellant contends that the claims "use computer-implemented algorithms and rules to 'select[] qualified advertisements' and then 'allocat[e] advertising <u>impressions</u>,' which improves over subjective, manual techniques and existing methods of auctioning advertising <u>spaces</u>." Appeal Br. 19 (citing Spec. ¶ 5). Appellant also contends that the claims "are 'necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks.'" *Id.* at 20 (quoting *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014)). Further, Appellant asserts that the claims are "specific to the realm of the Internet" and "address a problem that does not arise in traditional advertising because the use of impressions in advertising is unique to the Internet." *Id.*

We disagree. The Specification explains that the invention endeavors to provide improved "advertising space inventory allocation techniques."

Spec. ¶ 7. The Specification analogizes advertisements on web pages "to rented billboard space in highways and cities or commercials broadcasted during television or radio programs." *Id.* ¶ 2. The claims concern the tailoring of content, i.e., identifying qualified advertisements for advertising spaces based on matching web browser types and matching geographic regions. Appeal Br. 25–26, 29–33. The "tailoring of content based on information about the user," e.g., "where the user lives," is "an abstract idea that is as old as providing different newspaper inserts for different neighborhoods." *Affinity Labs of Tex., LLC v. Amazon.com Inc.*, 838 F.3d 1266, 1271 (Fed. Cir. 2016). Thus, the Examiner correctly reasons that the claims do not "overcome a problem specifically arising in the realm of computer networks." Ans. 10.

Appellant asserts that the claims recite "an unconventional technological solution," i.e., "allocating advertising <u>impressions</u>," to "address a technological problem," i.e., "inefficient allocation of advertisements using traditional methods." Appeal Br. 22.

We disagree that "inefficient allocation of advertisements" constitutes a technological problem. In *Bilski*, for example, the Supreme Court did not view shortcomings in balancing risk positions as a technological problem. *See Bilski v. Kappos*, 561 U.S. 593, 599, 609–13 (2010). And in *Alice*, the Court did not view shortcomings in mitigating settlement risk as a technological problem. *See Alice*, 573 U.S. at 212–14 & n.2, 219–23. Similarly, in *Ultramercial*, the Federal Circuit did not view shortcomings in "displaying an advertisement in exchange for access to copyrighted media" as a technological problem. *See Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 712, 714–16 (Fed. Cir. 2014).

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Appellant analogizes the claims here to the claims in the following cases: *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288 (Fed. Cir. 2016); *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299 (Fed. Cir. 2016); and *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014). *See*, *e.g.*, Appeal Br. 14–15, 19–21. But the claims here do not resemble the claims in any of those cases.

In *Amdocs*, the patents concerned network components "arrayed in a distributed architecture" that "collect[ed] and process[ed] data close to its source," and thus enabled "load distribution" and reduced network congestion. *Amdocs*, 841 F.3d at 1291–92, 1300, 1303, 1306. The Federal Circuit decided that the claims satisfied § 101 under *Mayo/Alice* step two because they either (1) "entail[ed] an unconventional technological solution . . . to a technological problem" that required generic computer components to "operate in an unconventional manner to achieve an improvement in computer functionality" or (2) "recite[d] a technological solution to a technological problem specific to computer networks—an unconventional solution that was an improvement over the prior art." *Id.* at 1299–1306.

Unlike the claims in *Amdocs*, the claims here do not require generic computer components to "operate in an unconventional manner to achieve an improvement in computer functionality." For instance, the claims do not require an unconventional arrangement of components or an uncommon network configuration. Further, the claims do not recite an advance in hardware or software that causes a computer itself or a network itself to operate faster or more efficiently.

Instead, the claims use a "communications network" in its ordinary capacity to communicate data. The claims use a "processor" in its ordinary

capacity to manipulate data. The claims use a "storage device" in its ordinary capacity to store data. And the claims use an "interface" in its ordinary capacity to receive data. Thus, the Examiner correctly determines that the claims do not "improve the functioning of the computer itself" or "improve any other technology or technical field." Final Act. 4, 7; Ans. 6, 9–10.

And unlike the claims in *Amdocs*, the claims here do not recite a technological solution to a technological problem. As discussed above, "inefficient allocation of advertisements" does not constitute a technological problem.

In *McRO*, the claims recited a "specific . . . improvement in computer animation" using "unconventional rules" that related "sub-sequences of phonemes, timings, and morph weight sets" to automatically animate lip synchronization and facial expressions for three-dimensional characters that only human animators could previously produce. *McRO*, 837 F.3d at 1302–03, 1307–08, 1313–15. In *McRO*, "the incorporation of the claimed rules" improved an existing technological process. *Id.* at 1314.

Unlike the claims in *McRO*, the claims here do not improve an existing technological process. *See Alice*, 573 U.S. at 223 (explaining that "the claims in *Diehr* were patent eligible because they improved an existing technological process"); *see also* Final Act. 6–7; Ans. 5–6, 8–10. As discussed above, the Examiner correctly determines that the claims do not "improve the functioning of the computer itself" or "improve any other technology or technical field." Final Act. 4, 7; Ans. 6, 9–10. Instead, the claims encompass steps to identify qualified advertisements, rank the qualified advertisements, select certain qualified advertisements based on

their ranking, and assign the selected advertisements to advertising spaces, all of which a person can perform mentally or with pen and paper.

In *DDR Holdings*, the Federal Circuit determined that certain claims satisfied § 101 under *Mayo/Alice* step two because "the claimed solution amount[ed] to an inventive concept for resolving [a] particular Internet-centric problem," i.e., a challenge unique to the Internet. *DDR Holdings*, 773 F.3d at 1257–59; *see also Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1151 (Fed. Cir. 2016) (noting that "[i]n *DDR Holdings*, we held that claims 'directed to systems and methods of generating a composite web page that combines certain visual elements of a "host" website with content of a third-party merchant' contained the requisite inventive concept"). The Federal Circuit explained that the patent-eligible claims specified "how interactions with the Internet are manipulated to yield a desired result . . . that overrides the routine and conventional sequence of events ordinarily triggered by the click of a hyperlink." *DDR Holdings*, 773 F.3d at 1258. The court reasoned that those claims recited a technological solution "necessarily rooted in computer technology" that addressed a "problem specifically arising in the realm of computer networks." *Id.* at 1257.

According to the Federal Circuit, "*DDR Holdings* does not apply when . . . the asserted claims do not 'attempt to solve a challenge particular to the Internet.'" *Smart Sys. Innovations, LLC v. Chi. Transit Auth.*, 873 F.3d 1364, 1375 (Fed. Cir. 2017) (quoting *In re TLI Commc'ns LLC Patent Litig.*, 823 F.3d 607, 613 (Fed. Cir. 2016)). Unlike the patent-eligible claims in *DDR Holdings*, the claims here do not attempt to solve a challenge particular to the Internet.

Instead, the claims here encompass assigning "a plurality of advertisements" to "a plurality of advertising spaces" based on matching web browser types and matching geographic regions. To accomplish the assigning, the claims receive "information" via a "communications network," e.g., the Internet. *See* Spec. ¶ 45. But receiving "information" via a "communications network" does not mean that the claims address a problem specifically arising in the realm of computer networks. Appellant identifies nothing unconventional about receiving "information" via a "communications network."

Moreover, matching web browser types does not mean that the claims address a problem specifically arising in the realm of computer networks. The Specification identifies "browser type" as one of several "advertiser-specified target variables" for an advertising campaign. Spec. ¶¶ 24, 27. It states, "A campaign goal may define its associated advertising campaign by setting one or more advertiser-specified target variables for the associated advertising campaign." *Id.* ¶ 24. It also states, "Target variables may be any combination of, e.g., advertising publication, publication type, connection speed, browser type, geographic region of the connection's IP address, industry, seasonal or other calendar or time restraints, or any other distinguishing feature," such as "gender, age, [or] income." *Id.*; *see id.* ¶ 27. Hence, "advertiser-specified target variables" for an advertising campaign predate the Internet.

The 2019 Guidance identifies exemplary considerations indicating that additional elements in claims "may have integrated the [judicial] exception into a practical application." 84 Fed. Reg. at 55 & nn.25–29 (citing Manual of Patent Examining Procedure §§ 2106.05(a)–(c),

2106.05(e)). As the above analysis indicates, we have evaluated Appellant's arguments in light of those exemplary considerations. For the reasons discussed above, however, we determine that each independent claim as a whole does not integrate the recited abstract ideas into a practical application. Thus, each claim is directed to a judicial exception and does not satisfy § 101 under *Mayo/Alice* step one.

Mayo/Alice Step Two: PTO Step 2B

Because we determine that each independent claim is directed to a judicial exception, we "consider the elements of each claim both individually and 'as an ordered combination' to determine whether the additional elements" add enough to transform the "nature of the claim" into "significantly more" than the judicial exception. *See Alice*, 573 U.S. at 217–18, 221–22 (quoting *Mayo*, 566 U.S. at 78–79). Under *Mayo/Alice* step two, we "look with more specificity at what the claim elements add, in order to determine 'whether they identify an "inventive concept" in the application of the ineligible subject matter' to which the claim is directed." *Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1258 (Fed. Cir. 2016) (quoting *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016)). An "inventive concept" requires more than "well-understood, routine, conventional activity already engaged in" by the relevant community. *Rapid Litig. Mgmt. Ltd. v. CellzDirect, Inc.*, 827 F.3d 1042, 1047 (Fed. Cir. 2016) (quoting *Mayo*, 566 U.S. at 79–80). But a "non-conventional and non-generic arrangement of known, conventional pieces" may provide an "inventive concept" satisfying step two. *BASCOM Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1350 (Fed. Cir. 2016).

As discussed above, the independent claims recite computer-system components, in particular, a "processor" or "processors," a "storage device," a "communications network," and interfaces, i.e., a "publisher interface" and an "advertiser interface." Appeal Br. 25, 29–32. The Examiner correctly finds that the claimed computer-system components perform "computer functions" that "are 'well understood, routine, conventional activities' previously known to the industry (collecting, comparing, organizing information)." Final Act. 6–7; Ans. 5–6, 8–10. Further, the Examiner correctly finds that a "computer is employed for its most basic functions and does not impose meaningful limits on the scope of the claims." Final Act. 4, 7; Ans. 6, 9. The Examiner properly reasons that "the claims do no more than implement the abstract idea on a generic computer." Final Act. 4, 6; Ans. 8.

Consistent with the Examiner's findings and reasoning, the Specification describes the claimed computer-system components generically and evidences their conventional nature. *See*, *e.g.*, Spec. ¶¶ 23, 45, 47. For example, the Specification describes a "communications network" as "any computer data network that allows communication to occur amongst any/all components of the system," such as "any network and/or combination of networks, including, for example, the Internet." *Id.* ¶ 45. Further, the Specification discusses implementing certain system components as "a software program and/or a computer server." *Id.* ¶ 23. The Specification also discusses using "a machine such as a personal computer with picture making software to create advertisements suitable for display." *Id.* ¶ 47.

Simply implementing an abstract idea using conventional machines or devices "add[s] nothing of substance." *See Alice*, 573 U.S. at 226–27; *see also Mayo*, 566 U.S. at 84–85 (explaining that "simply implementing a mathematical principle on a physical machine" does not suffice for patent eligibility) (citing *Gottschalk v. Benson*, 409 U.S. 63, 64–65, 71 (1972)).

In addition, the claimed computer-system components operate to collect, manipulate, and communicate data. Appeal Br. 25–26, 29–33. Court decisions have recognized that generic computer-system components operating to collect, manipulate, and communicate data are well understood, routine, and conventional to a skilled artisan. *See*, *e.g.*, *Alice*, 573 U.S. at 226–27; *SAP Am.*, 898 F.3d at 1164–65 & n.1, 1170; *Symantec*, 838 F.3d at 1316–20; *Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1334 (Fed. Cir. 2015); *Ultramercial*, 772 F.3d at 715–16; *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014).

For example, the system claims in *Alice* recited a "data processing system" (e.g., a "processor" or "processors") with a "communications controller" and a "data storage unit" (e.g., a "storage device"). *Alice*, 573 U.S. at 226. The Supreme Court decided that the system claims failed to satisfy § 101 because "[n]early every computer" includes those generic components for performing "basic calculation, storage, and transmission functions" and the system claims simply implemented the same abstract idea as the method claims. *Id.* at 226–27. The Court reasoned that (1) "the system claims are no different from the method claims in substance"; (2) "[t]he method claims recite the abstract idea implemented on a generic computer"; and (3) "the system claims recite a handful of generic computer components configured to implement the same idea." *Id.* at 226.

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Here, the claimed computer-system components perform "basic calculation, storage, and transmission functions" that nearly every computer system performs. Appeal Br. 25–26, 29–33; *see* Final Act. 6–7; Ans. 5–6, 8–10. For instance, nearly every computer system includes a "processor" for manipulating data, a "storage device" for storing data, and a "communications network" for communicating data. Hence, those generic computer-system components do not satisfy the "inventive concept" requirement. *See*, *e.g.*, *Mortg. Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1324–25 (Fed. Cir. 2016) (holding that "generic computer components such as an 'interface,' 'network,' and 'database'" did not satisfy the "inventive concept" requirement); *FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1095–96 (Fed. Cir. 2016) (describing the claimed "microprocessor" and "user interface" as "generic computer elements"); *Prism Techs. LLC v. T-Mobile USA, Inc.*, 696 F. App'x 1014, 1016–17 (Fed. Cir. 2017) (describing the claimed "authentication server," "access server," "Internet Protocol network," "client computer device," and "database" as "indisputably generic computer components").

Appellant "notes that all prior art rejections have been withdrawn." Appeal Br. 22. Appellant then contends that the "claims recite novel, technological features that are neither taught nor suggested by the prior art— amounting to 'significantly more' than any alleged abstract idea." *Id.* at 23.

But the absence of anticipation and obviousness "does not resolve the question of whether the claims embody an inventive concept" under *Mayo*/*Alice* step two. *Symantec*, 838 F.3d at 1315; *see SAP Am.*, 898 F.3d at 1163. "The search for a § 101 inventive concept" differs "from demonstrating § 102 novelty." *Synopsys*, 839 F.3d at 1151; *see Two-Way*

Media Ltd. v. Comcast Cable Commc'ns, LLC, 874 F.3d 1329, 1340
(Fed. Cir. 2017). "The 'novelty' of any element[s] or steps" in a claim or
even the claim itself "is of no relevance in determining whether the subject
matter of a claim" satisfies § 101. *Diehr*, 450 U.S. at 189–90.

Further, insofar as Appellant relies on the recited abstract ideas to
satisfy the "inventive concept" requirement, he wrongly does so.
A "claimed invention's use of the ineligible concept," e.g., an abstract idea,
"cannot supply the inventive concept that renders the invention 'significantly
more' than that ineligible concept." *BSG Tech LLC v. BuySeasons, Inc.*,
899 F.3d 1281, 1290 (Fed. Cir. 2018). "[U]nder the *Mayo/Alice* framework,
a claim directed to a newly discovered" abstract idea "cannot rely on the
novelty of that discovery for the inventive concept necessary for patent
eligibility." *Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369, 1376
(Fed. Cir. 2016).

Appellant asserts that the Examiner cites "no documentary or prior art
support" when finding that certain elements "are 'well understood, routine,
conventional activities' previously known to the industry." Appeal Br. 23.
Similarly, based on PTO guidance about *Berkheimer v. HP*,[3] Appellant
asserts that the Answer and previous Office Actions "contain[] an
insufficiently supported allegation that the claims are 'well-understood,
routine [or] conventional.'" Reply Br. 8–9.

But Appellant concedes that "[o]ne or more citations of a court
decision" may demonstrate that additional elements are well understood,

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[3] USPTO Memorandum, Changes in Examination Procedure Pertaining
to Subject Matter Eligibility, Recent Subject Matter Eligibility Decision
(*Berkheimer v. HP, Inc.*) (Apr. 19, 2018).

routine, and conventional to a skilled artisan. *Id.* at 8. As discussed above, court decisions have recognized that generic computer-system components operating to collect, manipulate, and communicate data are well understood, routine, and conventional to a skilled artisan. *See*, *e.g.*, *Alice*, 573 U.S. at 226–27; *SAP Am.*, 898 F.3d at 1164–65 & n.1, 1170; *Symantec*, 838 F.3d at 1316–20; *Versata*, 793 F.3d at 1334; *Ultramercial*, 772 F.3d at 715–16; *buySAFE*, 765 F.3d at 1355.

"Whether a combination of claim limitations supplies an inventive concept that renders a claim 'significantly more' than an abstract idea to which it is directed is a question of law." *BSG Tech*, 899 F.3d at 1290. Given the claimed generic computer-system components that perform generic computer functions, we conclude that the combination of limitations in each independent claim does not supply an "inventive concept" that renders the claim "significantly more" than an abstract idea. Thus, each claim does not satisfy § 101 under *Mayo/Alice* step two.

Summary for the Independent Claims

For the reasons discussed above, each independent claim fails to satisfy § 101 under *Mayo/Alice* step one and step two. Hence, we sustain the § 101 rejection of the independent claims.

Dependent Claims 4–16, 19, and 23–25

We also sustain the § 101 rejection of dependent claims 4–16, 19, and 23–25 because Appellant does not argue eligibility separately for them. *See* Appeal Br. 13–23; Reply Br. 2–9; 37 C.F.R. § 41.37(c)(1)(iv).

CONCLUSION

We affirm the Examiner's decision to reject claims 1, 4–16, 19, 20, and 22–25.

In summary:

Claims Rejected	Basis	Affirmed	Reversed
1, 4–16, 19, 20, and 22–25	§ 101	1, 4–16, 19, 20, and 22–25	

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv). *See* 37 C.F.R. § 41.50(f).

AFFIRMED