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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ANTONIO FELIPE GARCIA-MARTINEZ and MARK RABKIN

Appeal 2017-009681
Application 13/764,750
Technology Center 3600

Before ROBERT E. NAPPI, JAMES W. DEJMEK, and
STEVEN M. AMUNDSON, *Administrative Patent Judges*.

AMUNDSON, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants¹ seek our review under 35 U.S.C. § 134(a) from a final rejection of claims 1–6 and 9–14, i.e., all pending claims. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

STATEMENT OF THE CASE

The Invention

According to the Specification, the “invention relates generally to advertising, and in particular to real-time bidding for advertising impressions

¹ Appellants identify the real party in interest as Facebook, Inc. App. Br. 1.

in social networking and other online systems.” Spec. ¶ 1.² The Specification explains that “[a]dvertisers may bid in real-time on advertisement presentation if the online system determines the expected revenue to the online system from real-time bids is above a threshold value,” and “[t]he expected revenue may be determined based on a probability distribution [of] bids previously placed by advertisers for presenting advertisements to the user or to users with similar characteristics as the user.” *Id.* Abstract; *see id.* ¶ 4.

Exemplary Claim

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

1. A method comprising:
 - accessing historical bid information received at an online system from a plurality of advertisers, the historical bid information received from an advertiser describing bids previously received from the advertiser for presenting advertisements to one or more users of the online system and bid values of the bids previously received from the advertiser;
 - determining using the accessed historical bid information, a probability distribution of bid values from the plurality of advertisers, the probability distribution indicating probabilities of receiving bids from the advertisers at different bid values;

² This decision uses the following abbreviations: “Spec.” for the Specification, filed February 11, 2013; “Final Act.” for the Final Office Action, mailed October 8, 2015; “App. Br.” for the Appeal Brief, filed August 3, 2016; “Ans.” for the Examiner’s Answer, mailed May 4, 2017; and “Reply Br.” for the Reply Brief, filed July 5, 2017.

determining, based on the probability distribution of bid values, an expected revenue for the online system from real-time receipt of bids for presenting an advertisement to a user of the online system to fill an opportunity to advertise to the user;

comparing by the online system, the expected revenue to a threshold value;

responsive to the comparison indicating the expected revenue exceeds the threshold value, requesting real-time bids from one or more of the advertisers for advertisements to fill the opportunity to advertise to the user of the online system;

receiving one or more real-time bids from the one or more advertisers for presenting an advertisement to the user to fill the opportunity; and

selecting the advertisement to fill the opportunity based on the received bids from the one or more of the advertisers.

App. Br. 21–22 (Claims App’x).

The Prior Art Supporting the Rejections on Appeal

As evidence of unpatentability under 35 U.S.C. § 103(a), the Examiner relies on the following prior art:

McElfresh et al.	US 6,907,566 B1	June 14, 2005
Cunningham et al.	US 2010/0241511 A1	Sept. 23, 2010

The Rejections on Appeal

Claim 1 stands provisionally rejected on the ground of nonstatutory double patenting as unpatentable over claim 7 of copending Application 13/789,463. Final Act. 3.

Claims 1–6 and 9–14 stand rejected under 35 U.S.C. § 101 as directed to patent-ineligible subject matter. Final Act. 3–4.

Claims 1–6 and 9–14 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Cunningham and McElfresh. Final Act. 5–15.

ANALYSIS

We have reviewed the rejections in light of Appellants' arguments that the Examiner erred. For the reasons explained below, we disagree with Appellants' assertions regarding Examiner error and concur with the Examiner's conclusions concerning ineligibility under § 101 and unpatentability under § 103(a). We adopt the Examiner's findings and reasoning in the Final Office Action and Answer. *See* Final Act. 3–16; Ans. 2–7. We add the following to address and emphasize specific findings and arguments.

The Provisional Double-Patenting Rejection of Claim 1

Appellants do not present arguments about the provisional double-patenting rejection. App. Br. 6. We decline to reach the provisional rejection as the issues are not ripe for decision. *See Ex parte Moncla*, 95 USPQ2d 1884, 1885 (BPAI 2010) (precedential); *see also Ex parte Jerg*, No. 2011-000044, 2012 WL 1375142, at *3 (BPAI Apr. 13, 2012) (informative).

The § 101 Rejection of Claims 1–6 and 9–14

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 Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66, 70 (2012), and *Alice Corp. v. CLS Bank International*, 134 S. Ct. 2347, 2354 (2014), the Supreme Court explained that § 101 “contains an important implicit exception” for

laws of nature, natural phenomena, and abstract ideas. *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: First, “determine whether the claims at issue are directed to” a patent-ineligible concept, such as an abstract idea. *Alice*, 134 S. Ct. at 2355. If so, “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 a patent-ineligible concept. *Id.* at 2355, 2357 (quoting *Mayo*, 566 U.S. at 79).

Step one in the *Mayo/Alice* framework involves looking at the “focus” of the claims at issue and their “character as a whole.” *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016); *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016). Step two involves the search for an “inventive concept.” *Alice*, 134 S. Ct. at 2355; *Elec. Power*, 830 F.3d at 1353. 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 “an inventive concept can be found in the non-conventional and non-generic arrangement of known, conventional pieces.” *BASCOM Global Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1350 (Fed. Cir. 2016). Under step two, “an inventive concept must be evident in the claims.” *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017).

A PRIMA FACIE CASE OF INELIGIBILITY

Appellants note that the PTO “has issued various guidance for evaluating applications for patent subject matter eligibility,” including the

“2014 Interim Guidance on Patent Subject Matter Eligibility,” 79 Fed. Reg. 74,618 (Dec. 16, 2014) (“2014 Guidance”), and the “July 2015 Update: Subject Matter Eligibility” (“2015 Update”). App. Br. 6–7. Based on the 2014 Guidance and the 2015 Update, Appellants assert that “a proper identification of a judicial exception must be similar to at least one concept previously identified by the courts.” *Id.* at 8. Appellants then contend that “the examiner has not identified how the present claims are similar to the methods of organizing human activity or fundamental economic practices previously identified by the courts and set forth in” the 2014 Guidance and the 2015 Update. *Id.*; *see* Reply Br. 7–8. Appellants urge that “the Examiner has further erred by not addressing the[] different and additional limitations” in independent claim 6 and dependent claims 2–5 and 9–14. App. Br. 17; *see* Reply Br. 15. Also, Appellants fault the Examiner for a “conclusory analysis” based on “conclusory statements.” App. Br. 8–9; *see* Reply Br. 7–8, 10.

Appellants’ arguments do not persuade us of Examiner error. A May 2016 Federal Register notice explains that the PTO’s § 101 guidance materials “were developed as a matter of internal Office management,” “do not constitute substantive rulemaking,” “do not have the force and effect of law,” and instead “set out examination policy” regarding § 101 rejections. 81 Fed. Reg. 27,381, 27,382 (May 6, 2016). The 2014 Guidance includes a similar explanation. 79 Fed. Reg. at 74,619. The May 2016 notice also explains that “[r]ejections will continue to be based upon the substantive law, and it is these rejections that are appealable.” 81 Fed. Reg. at 27,382; *see* 79 Fed. Reg. at 74,619. Thus, an Examiner’s failure to follow the § 101 guidance materials is appealable only to the extent there has been a failure

follow statutory or decisional law. If the guidance materials exceed statutory or decisional law with additional restrictions, an Examiner's failure to comply with those additional restrictions may warrant a petition to the Director.

We conclude that the Final Office Action adequately explains the § 101 rejection. “[T]he prima facie case is merely a procedural device that enables an appropriate shift of the burden of production.” *Hyatt v. Dudas*, 492 F.3d 1365, 1369 (Fed. Cir. 2007) (citing *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992)). The “PTO carries its procedural burden of establishing a prima facie case when its rejection satisfies” § 132 “in ‘notify[ing] the applicant . . . [by] stating the reasons for [its] rejection, or objection or requirement, together with such information and references as may be useful in judging of the propriety of continuing the prosecution of [the] application.’” *In re Jung*, 637 F.3d 1356, 1362 (Fed. Cir. 2011) (alterations in original) (quoting 35 U.S.C. § 132). The PTO violates § 132 “when a rejection is so uninformative that it prevents the applicant from recognizing and seeking to counter the grounds for rejection.” *Chester v. Miller*, 906 F.2d 1574, 1578 (Fed. Cir. 1990). But if the PTO “adequately explain[s] the shortcomings it perceives . . . the burden shifts to the applicant to rebut the prima facie case with evidence and/or argument.” *Hyatt*, 492 F.3d at 1370.

Here, for *Mayo/Alice* step one, the Examiner determines that the claims are directed to abstract ideas, i.e., “coordination of real time bidding,” “presenting of advertisements,” “generation of probability distributions using Gaussian techniques,” and “targeted advertising.” Final Act. 3–4, 15. The Examiner explains that the abstract ideas involve “coordinating human

activity, the fundamental business practice of marketing and the use of mathematical equations and relationships.” *Id.* at 3–4, 15. The Examiner reasons that courts have decided that similar claims were directed to abstract ideas. *Id.* at 15 (citing *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344 (Fed. Cir. 2014); *Cyberfone Sys., LLC v. CNN Interactive Grp., Inc.*, 558 F. App’x 988 (Fed. Cir. 2014); *SmartGene, Inc. v. Advanced Biological Labs., SA*, 555 F. App’x 950 (Fed. Cir. 2014)). Thus, the Examiner (1) identifies the abstract-idea judicial exception rather than the natural-phenomenon or law-of-nature judicial exception, (2) defines the abstract ideas, and (3) cites court decisions to support the analysis.

Moreover, claim 14 depends from independent claim 6 and requires “presenting the selected advertisement for display to the user.” App. Br. 25 (Claims App’x). Among the claims at issue, only claim 14 requires presenting an advertisement to a user. *Id.* at 21–25. Yet the Examiner determines that the claims are directed to the abstract idea “presenting of advertisements.” Final Act. 3–4. Thus, the Examiner analyzes the dependent claims as well as the independent claims when considering whether the claims are directed to a judicial exception.

Further, for *Mayo/Alice* step two, the Examiner determines that the “generically recited online system” requires “no more than a generic computer to perform generic computer functions that are well-understood, routine and conventional activities previously known to the industry.” Final Act. 15–16. The Examiner also determines that the additional elements do not improve “the technical field that the abstract idea is applied,” “any other technical field,” or “the functioning of the computer itself.” *Id.* at 4, 15. Accordingly, the Examiner reasons that the claims lack an “inventive

concept” sufficient to transform them into significantly more than patent-ineligible abstract ideas. *Id.* at 4, 15–16.

The Examiner’s statements satisfy § 132 because they apply the *Mayo/Alice* analytical framework and apprise Appellants of the reasons for the § 101 rejection under that framework. As discussed in more detail below, Appellants recognize the Examiner’s *Mayo/Alice* analysis and present arguments addressing the merits of that analysis. *See* App. Br. 7–17; Reply Br. 4–15.

MAYO/ALICE STEP ONE

Appellants assert that the claims are not directed to an abstract idea because they “are limited to a particular method of determining whether to request real-time bids to fill an advertising opportunity based on expected revenue from the real-time bids.” App. Br. 12. But “limiting an abstract idea to one field of use” does not impart patent eligibility. *See Bilski v. Kappos*, 561 U.S. 593, 612 (2010); *see also Parker v. Flook*, 437 U.S. 584, 589–90 (1978); *Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1259 (Fed. Cir. 2016). “[A] claim is not patent eligible merely because it applies an abstract idea in a narrow way.” *BSG Tech LLC v. BuySeasons, Inc.*, 899 F.3d 1281, 1287 (Fed. Cir. 2018).

Here, the claims cover data collection, manipulation, and display. App. Br. 21–25 (Claims App’x); *see* Final Act. 15; Ans. 3. The Federal Circuit has ruled that claims covering data collection, manipulation, and display were directed to abstract ideas. *See, e.g., SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1164–67 (Fed. Cir. 2018); *Secured Mail Sols. LLC v. Universal Wilde, Inc.*, 873 F.3d 905, 907–08, 910–11 (Fed. Cir. 2017); *Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044, 1047, 1054–56

& n.6 (Fed. Cir. 2017); *RecogniCorp*, 855 F.3d at 1324, 1326–27; *Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1339–41 (Fed. Cir. 2017); *Elec. Power*, 830 F.3d at 1351–54; *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1361–63 (Fed. Cir. 2015). “A process that start[s] with data, add[s] an algorithm, and end[s] with a new form of data [is] directed to an abstract idea.” *RecogniCorp*, 855 F.3d at 1327.

Moreover, the claims recite a series of steps for auctioning advertising space for targeted advertisements. App. Br. 21–25 (Claims App’x); see Spec. ¶¶ 4, 13, 29, 31–32, 39–41, 55–68, 75, Fig. 7; Reply Br. 11. The claimed series of steps resembles the claimed “series of steps instructing how to hedge risk” in a commodities market in *Bilski*. See 561 U.S. at 599. In *Alice*, the Supreme Court explained that the claims in *Bilski* concerned a method of organizing human activity. *Alice*, 134 S. Ct. at 2356; see also *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1367 (Fed. Cir. 2015) (deeming the claim at issue “not meaningfully different from the ideas found to be abstract in other cases before the Supreme Court and our court involving methods of organizing human activity”).

Appellants contend that a fundamental economic practice must be “long known and long prevalent” as shown by evidence. App. Br. 10. That contention does not persuade us of examiner error. Auctions have been “long known and long prevalent.” See, e.g., Heber Leonidas Hart, *Auctions and Auctioneers*, 2 ENCYCLOPÆDIA BRITANNICA 895 (11th ed. 1910). Targeted advertising and the “tailoring of content based on information about the user—such as where the user lives or what time of day the user

views the content—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).

Additionally, in *OIP Technologies, Inc. v. Amazon.com, Inc.*, the claims concerned offer-based price optimization, and a representative claim required “(1) testing a plurality of prices; (2) gathering statistics generated about how customers reacted to the offers testing the prices; (3) using that data to estimate outcomes . . . ; and (4) automatically selecting and offering a new price based on the estimated outcome.” *OIP Techs.*, 788 F.3d at 1361–62. The Federal Circuit concluded that “the claims describe[d] the automation of the fundamental economic concept of offer-based price optimization through the use of generic-computer functions.” *Id.* at 1363. In reaching that conclusion, the Federal Circuit did not cite any evidence other than the patent in suit and its prosecution history. *Id.* at 1360–63. Similarly, in *Credit Acceptance Corp. v. Westlake Services*, the Federal Circuit did not cite any evidence other than the patent at issue when deciding that claims covering “processing an application for financing a purchase” involved a fundamental economic practice. *Credit Acceptance*, 859 F.3d at 1054–55.

Appellants assert that the Examiner erred under *Mayo/Alice* step one because the Examiner did not identify “any specific claim limitations” reciting the abstract ideas and then analyze them separately from the limitations “not reciting the judicial exception but as failing to provide an inventive application of the idea.” App. Br. 12. That assertion does not persuade us of examiner error. For *Mayo/Alice* step one, the Examiner

accurately assesses the “focus” of the claims and their “character as a whole.” Final Act. 3–4, 15; Ans. 3; *see Elec. Power*, 830 F.3d at 1353.

Appellants urge that “‘the use of mathematical equations and relationships,’ and more specifically the involvement of Gaussian techniques in a single step of the claim, is not sufficient to establish the claims as being patent-ineligible.” App. Br. 11. But the Examiner’s analysis does not rest on only “the use of mathematical equations and relationships.” Final Act. 3–4, 15; Ans. 3. The Examiner explains that the abstract ideas encompassed by the claims also involve “coordinating human activity, [and] the fundamental business practice of marketing.” Final Act. 3–4. Adding abstract ideas together “does not render the claim[s] non-abstract.” *RecogniCorp*, 855 F.3d at 1327; *see also FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1093–94 (Fed. Cir. 2016) (determining that the claims were directed to a combination of abstract ideas).

Appellants contend that the claims here “like the claims in *McRO* do not generically recite an abstract result, or simply automate any existing human process,” but instead “are directed to a very specific computer-implemented process.” Reply Br. 6–7 (citing *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299 (Fed. Cir. 2016)). Appellants misplace their reliance on *McRO*.

The claims in *McRO*—unlike the claims here—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.

In contrast to the claims in *McRO*, the claims here do not improve an existing technological process. *See Alice*, 134 S. Ct. at 2358 (explaining that “the claims in *Diehr* were patent eligible because they improved an existing technological process”); *see also* Final Act. 4, 15; Ans. 4. Instead, the claims concern auctioning advertising space for targeted advertisements. App. Br. 21–25 (Claims App’x); *see* Spec. ¶¶ 4, 13, 29, 31–32, 39–41, 55–68, 75, Fig. 7; Reply Br. 11. Rather than reciting “unconventional rules,” the claims require evaluating the expected revenue from a real-time auction vis-à-vis a specified criterion, i.e., “a threshold value” in claim 1, “a clearing price” in claim 2, and “a threshold amount above the clearing price” in claim 6.

MAYO/ALICE STEP TWO

Appellants contend that “when viewed as a whole, the claims clearly do not tie up all possible ways of presenting recommendation units to a user and are not directed to this idea, itself.” App. Br. 13–14. That contention does not persuade us of Examiner error. While preemption may denote patent ineligibility, its absence does not demonstrate patent eligibility. *See FairWarning*, 839 F.3d at 1098. For claims covering a patent-ineligible concept, preemption concerns “are fully addressed and made moot” by an analysis under the *Mayo/Alice* framework. *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015); *see* Ans. 4.

As additional elements, the claims expressly recite an “online system” and implicitly require a processor, a memory, and a display. App. Br. 21–25 (Claims App’x). The Examiner determines that the “generically recited

online system” requires “no more than a generic computer to perform generic computer functions that are well-understood, routine and conventional activities previously known to the industry.” Final Act. 15–16; Ans. 4–5.

Consistent with that determination, the Specification describes the “online system” and its computer components generically. *See, e.g.*, Spec. ¶¶ 21–22, 83–84. For example, the Specification explains that “[t]he network 110 is typically the Internet, but may be any communication pathway, such as a local area network (LAN), a metropolitan area network (MAN), a wide area network (WAN), a mobile wired or wireless network, a private network, or a virtual private network.” *Id.* ¶ 21. The Specification also explains that “[t]he client device 102 may be a desktop computer, laptop computer, portable computer, personal digital assistant (PDA), smart phone, or any other device including computing functionality and data communication capabilities.” *Id.* ¶ 22. The Specification does not describe an unconventional arrangement of any conventional computer components.

In addition, court decisions have recognized that conventional computer components operating to collect, manipulate, and display data are well understood, routine, and conventional to a skilled artisan. *See, e.g.*, *Alice*, 134 S. Ct. at 2360; *SAP Am.*, 898 F.3d at 1164–65 & n.1, 1170; *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1318–20 (Fed. Cir. 2016); *Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1334 (Fed. Cir. 2015); *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715–16 (Fed. Cir. 2014); *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014); *Cyberfone Sys., LLC v. CNN Interactive Grp., Inc.*, 558 F. App’x 988, 993 (Fed. Cir. 2014).

Appellants assert that the claims “are analogous to the claims at issue in the *DDR Holdings* case.” App. Br. 15 (citing *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014)); Reply Br. 13. *DDR Holdings* does not help Appellants.

In *DDR Holdings*, the Federal Circuit determined that certain claims satisfied *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 *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.

The claims here do not address a similar problem and do not contain a similar inventive concept as the patent-eligible claims in *DDR Holdings*. See App. Br. 21–25 (Claims App’x); Ans. 4–5. Instead, the claims concern auctioning advertising space for targeted advertisements. App. Br. 21–25 (Claims App’x); see Spec. ¶¶ 4, 13, 29, 31–32, 39–41, 55–68, 75, Fig. 7; Reply Br. 11. Applying the abstract ideas encompassed by the claims to the

particular technological environment of a network, e.g., the Internet, does not suffice for patent eligibility. *See Ultramercial*, 772 F.3d at 712, 715–16. “[T]he use of the Internet is not sufficient to save otherwise abstract claims from ineligibility under § 101.” *Id.* at 716; *see Ans. 5* (citing *Ultramercial*).

Appellants contend that “the claimed invention provides a technical improvement to the computing processes associated with Internet advertising, and therefore also constitutes ‘significantly more’ than merely presenting advertisements via the Internet.” App. Br. 14; *see Reply Br. 10*. Specifically, Appellants assert that the claimed invention “uses less bandwidth” and “decreases latency” when selecting an ad compared to prior-art real-time bidding systems “by not requesting real-time bids each time an ad space is accessed, while still maintaining the ability to selectively request real-time bids” for an ad space. App. Br. 15; Reply Br. 3, 10–11, 17. But the Specification does not describe reduced bandwidth or decreased latency as an improvement over prior-art real-time bidding systems. Although the Specification discusses an embodiment that compares the expected revenue from a real-time auction to the revenue from a standard auction plus the bandwidth price for the real-time auction, the Specification does not explain how that embodiment improves over prior-art real-time bidding systems. Spec. ¶ 62; *see id.* ¶¶ 2–4; App. Br. 14–15. Rather, the Specification describes increased “revenue to the social networking system” as the invention’s advantage. Spec. ¶ 4.

Further, unclaimed features do not support patent eligibility under *Mayo/Alice* step two. *See, e.g., Berkheimer v. HP Inc.*, 881 F.3d 1360, 1369–70 (Fed. Cir. 2018); *Two-Way Media Ltd. v. Comcast Cable Commc’ns, LLC*, 874 F.3d 1329, 1338–39 (Fed. Cir. 2017); *Intellectual*

Ventures I LLC v. Erie Indem. Co., 850 F.3d 1315, 1331–32 (Fed. Cir. 2017). “[A]n inventive concept must be evident in the claims.” *RecogniCorp*, 855 F.3d at 1327.

Here, however, independent claims 1 and 6 do not specify what happens when the expected revenue from a real-time auction fails to satisfy the evaluation criterion. Also, claim 1’s evaluation criterion “a threshold value” may correspond to “a clearing price” that does not account for the bandwidth price for a real-time auction. App. Br. 21–22 (claims 1–2); *see* Spec. ¶¶ 4, 58, 66–68, 70. Further, claim 6’s evaluation criterion “a threshold amount above the clearing price” does not necessarily equal the bandwidth price for a real-time auction. As for the dependent claims, in the Appeal Brief Appellants do not argue patent eligibility separately for any dependent claim. *See* App. Br. 6–17.

Appellants cite the “July 2015 Update Appendix 1: Examples” (“2015 Update App.”) and assert that patent-eligible claim 4 in Example 23 resembles the claims here. App. Br. 11–12. In particular, Appellants contend that the claimed invention “does not just recite a calculation, but includes numerous steps that do not recite a calculation, and when considered as [an] ordered combination, amount to significantly more than any abstract idea that might be included.” *Id.* at 11–12.

Appellants’ arguments do not persuade us of Examiner error. The claims here differ from claim 4 in Example 23 because claim 4 improves the “basic display function of the computer itself.” 2015 Update App. 12; *see* Ans. 3–4. The claims here do not improve the “basic display function of the computer itself” or any other function of the computer itself. *See* Final Act. 4, 15; Ans. 4. Appellants do not describe an advance in hardware or

software that, for example, causes a computer itself to operate faster or more efficiently. Instead, Appellants rely on alleged improvements in network performance, i.e., reduced bandwidth and decreased latency. *See* App. Br. 14–15; Reply Br. 3, 10–11, 17.

Also, Appellants’ arguments about the similarity of the claims here to claim 4 in Example 23 undermine their arguments that the claims here are not directed to abstract ideas. Claim 4 “is directed to an abstract idea.” 2015 Update App. 11.

SUMMARY

For the reasons discussed above, Appellants’ arguments have not persuaded us of any error in the Examiner’s findings or conclusions under *Mayo/Alice* step one or step two. Hence, we sustain the § 101 rejection of claims 1–6 and 9–14.

The § 103(a) Rejection of Claims 1–6 and 9–14

INDEPENDENT CLAIM 1: “REQUESTING REAL-TIME BIDS” RESPONSIVE TO A COMPARISON

Appellants argue that the Examiner erred in rejecting claim 1 because Cunningham does not teach or suggest the following limitation in claim 1: “responsive to the comparison indicating the expected revenue exceeds the threshold value, requesting real-time bids from one or more of the advertisers for advertisements to fill the opportunity to advertise to the user of the online system.” *See* App. Br. 17–20; Reply Br. 16–23. In particular, Appellants contend that “in Cunningham, **regardless** of whether the expected clearing price is greater than the publisher-specified reserve price, the real-time bidding market conducts a real-time auction.” App. Br. 18; *see* Reply Br. 16–19. Appellants also contend that “Cunningham describes a

method to optimize the reserve price (based on prior price reporting periods) to maximize the price paid to the publisher, but ultimately, Cunningham still conducts a real time auction regardless of whether the expected clearing price is greater than the publisher-specified reserve price.” App. Br. 19. Further, Appellants assert that “Cunningham does not disclose any conditions for conducting the real-time auction, whereas claim 1 recites ‘requesting real time bids . . .’ in response ‘to the comparison indicating the expected revenue exceeds the threshold value.’” Reply Br. 17.

Appellants’ arguments do not persuade us of Examiner error because, as the Examiner explains, claim 1 “does not preclude an auction from being conducted whether or not the expected clearing price is greater than the publisher-specified reserve price.” Ans. 6. Claim 1 uses the transitional term “comprising.” App. Br. 21 (Claims App’x). The transitional term “comprising” is “inclusive or open-ended” and “does not exclude unrecited elements.” *See Regeneron Pharm., Inc. v. Merus N.V.*, 864 F.3d 1343, 1352 (Fed. Cir. 2017) (citing *Manual of Patent Examining Procedure* § 2111.03). As noted above, claim 1 does not specify what happens when the expected revenue from a real-time auction fails to satisfy the evaluation criterion.

Further, the Examiner correctly finds that Cunningham teaches or suggests requesting real-time bids responsive to a comparison exceeding a threshold value. *See* Final Act. 5, 16; Ans. 6. Specifically, Cunningham discloses an online marketplace for ad space that “brings together content publishers with an available inventory of ad space and advertisers who desire to have display ads presented in the ad spaces” of the content publishers. Cunningham ¶ 15. The online marketplace includes a “real-time bidding market” and “external markets,” i.e., “one or more alternative

markets, such as other ad networks or ad exchanges.” *Id.* ¶¶ 15–17, 22, Fig. 1; *see id.* ¶ 4. Those ad networks or ad exchanges may “use[] an auction system.” *Id.* ¶ 6.

During selected periods, an ad market server tests a publisher-established reserve price for the real-time bidding market by offering some of the publisher’s ad space “to advertisers participating in one or more external markets to determine the price that the advertisers participating in the external markets are willing to pay for the publisher’s ad space.” Cunningham ¶¶ 16–17, 34, 37, Abstract, Fig. 4. If advertisers are willing to pay more than the publisher-established reserve price for the real-time bidding market, the ad market server replaces that reserve price with “a market reserve price that is based on an analysis of the results of the price optimization process” for the external markets. *Id.* ¶¶ 16–17, 34, 38, 46, Abstract, Fig. 4. Additionally, the ad market server calculates the actual average clearing price for each external market during prior periods and uses that price to determine an expected clearing price for each external market in the current period. *Id.* ¶¶ 38–39. Then, in the current period, the ad market server selects a winning bidder for the publisher’s ad space by (1) selecting an external market and (2) determining whether the expected clearing price for the selected external market “exceeds the highest active bid from a bidder in the real-time bidding market, whose bid exceeds the market reserve price.” *Id.* ¶ 40, Fig. 4; *see id.* ¶ 34. “If the highest active bid in the real-time bidding market exceeds the expected clearing price” for the selected external market, the real-time bidding market processes the publisher’s ad space. *Id.* ¶ 40, Fig. 4. But “[i]f the expected clearing price for the selected external market is higher than the highest active bid” in the

real-time bidding market, the selected external market processes the publisher's ad space. *Id.* ¶ 40, Fig. 4.

Hence, Cunningham describes a comparison between the expected clearing price for the selected external market and the highest active bid in the real-time bidding market. Cunningham ¶¶ 16, 34–40, 46, Fig. 4. The highest active bid in the real-time bidding market corresponds to claim 1's "threshold value." *See* Final Act. 16; Ans. 6. If the expected clearing price for the selected external market exceeds that "threshold value," the selected external market processes publisher's ad space. Cunningham ¶ 40, Fig. 4. The selected external market may "use[] an auction system." *Id.* ¶ 6. Because the selected external market may "use[] an auction system," Cunningham teaches or suggests requesting real-time bids responsive to a comparison exceeding a threshold value. *See* Final Act. 5, 16; Ans. 6.

INDEPENDENT CLAIM 6: DETERMINING WHETHER "EXPECTED REVENUE IS GREATER THAN A THRESHOLD AMOUNT ABOVE THE CLEARING PRICE"

Appellants argue that the Examiner erred in rejecting claim 6 because Cunningham does not teach or suggest the following limitation in claim 6: "determining whether the expected revenue is greater than a threshold amount above the clearing price." *See* App. Br. 20; Reply Br. 23. In particular, Appellants contend that "[w]hile Cunningham describes comparing an expected clearing price to a publisher-specified reserve price, Cunningham does not disclose determining the expected clearing price is greater than the publisher-specified reserve price by at least a threshold amount." App. Br. 20. Further, Appellants assert that Cunningham's "publisher-specified reserve price is neither of the claim 6 elements of a computed expected revenue determined based on probability distributions or

a clearing price determined based on bid values in ad requests” but instead “just a minimum value set by the publisher for the real-time bidding market.” Reply Br. 23.

Appellants’ arguments do not persuade us of Examiner error because they attack the references individually, while the Examiner relies on the combined disclosures in the references to reject claim 6. *See* Final Act. 9–12, 16; Ans. 6–7. Where a rejection rests on the combined disclosures in the references, Appellants cannot establish nonobviousness by attacking the references individually. *See In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). Here, the combined disclosures in Cunningham and McElfresh teach or suggest the disputed limitation in claim 6. *See* Final Act. 9–12, 16; Ans. 6–7.

For instance, McElfresh teaches or suggests a probability distribution of bid values. *See* Final Act. 11–12 (citing McElfresh 3:8–11, 3:55–64, 11:18–25, 11:40–45, 12:15–18, 12:30–32). Further, Cunningham discloses determining the “fee charged by the operator of the real-time bidding market for brokering the transaction” and considering that fee when comparing a price in an external market to a price in the real-time bidding market. Cunningham ¶ 46. Hence, Cunningham teaches or suggests claim 6’s “threshold amount above” feature. *See* Final Act. 10–11 (citing Cunningham ¶¶ 16–17, 34, 37–40, 46, Fig. 4).

SUMMARY FOR INDEPENDENT CLAIMS 1 AND 6

For the reasons discussed above, Appellants’ arguments have not persuaded us that the Examiner erred in rejecting the independent claims under § 103(a). Thus, we sustain the § 103(a) rejection of the independent claims.

DEPENDENT CLAIMS 2–5 AND 9–14

Claims 2–5 depend from claim 1, and claims 9–14 depend from claim 6. App. Br. 22, 24–25 (Claims App’x). In the Appeal Brief, Appellants do not argue patentability separately for any dependent claim. *See* App. Br. 17–20. Because Appellants do not argue the claims separately, we sustain the § 103(a) rejection of these dependent claims for the same reasons as the independent claims. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2016).

In the Reply Brief, Appellants argue for the first time that dependent claim 13 differs from Cunningham “because claim 13 recites ‘responsive to the expected revenue not exceeding the threshold value, selecting the advertisement based on the bid values included in the stored ad requests.’” Reply Br. 24. This new argument is not responsive to an argument in the Answer, and Appellants have not shown good cause for us to consider it. *See* Ans. 6–7; Reply Br. 24. Hence, we decline to consider this new argument. *See* 37 C.F.R. § 41.41(b)(2); *see also Ex parte Borden*, 93 USPQ2d 1473, 1475 (BPAI 2010) (informative) (discussing procedural difficulties with belated arguments). “Considering an argument advanced for the first time in a reply brief . . . is not only unfair to an appellee, but also entails the risk of an improvident or ill-advised opinion on the legal issues tendered.” *McBride v. Merrell Dow & Pharm., Inc.*, 800 F.2d 1208, 1211 (D.C. Cir. 1986).

DECISION

We affirm the rejection of claims 1–6 and 9–14 under 35 U.S.C. § 101.

We affirm the rejection of claims 1–6 and 9–14 under 35 U.S.C. § 103(a).

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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