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EXAMINER
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NETZLOFF, ERIC R

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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* ZAINAB JAMAL, KAY-YUT CHEN, and  
FILIPPO BALESTRIERI

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Appeal 2017-003090  
Application 13/457,668  
Technology Center 3600

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Before JOHN A. JEFFERY, BRUCE R. WINSOR, and  
JUSTIN BUSCH, *Administrative Patent Judges*.

JEFFERY, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellants<sup>1</sup> appeal from the Examiner's decision to reject claims 1, 3–9, 11–13, 15–19, and 23–25, which constitute all the claims pending in this application.<sup>2</sup> Claims 2, 10, 14, and 20–22 were cancelled. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse. We also enter a new ground of rejection under 37 C.F.R. § 41.50(b) (2016).

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<sup>1</sup> Appellants identify the real party in interest as Hewlett Packard Enterprise Development LP. App. Br. 3.

<sup>2</sup> On the record before us, we presume claims 16–19 are pending. Despite the Examiner indicating “claims 1, 3–9, 11–13, 15 and 23–25” as currently

## STATEMENT OF THE CASE

Appellants' invention "estimates a customer's product preference propensities among sub-groups in a social network." Spec. ¶ 9. According to the Specification, "[marketing] messages, banner ads, product referrals, [the] customer's sharing of choices, and surveys may be used to gather information about [the] customer's product preference propensities." Spec. ¶ 28. "[The] customer is targeted . . . with an electronic display that includes a product that corresponds to the customer's product preference propensities within [a] sub-group." Spec. ¶ 39.

Claim 1, reproduced below, is illustrative:

1. A method comprising:
  - determining sub-groups in an online social network for a customer, wherein the customer is a member of a plurality of members in each sub-group;
  - for each sub-group, collecting, by at least one hardware processor, online customer action data for actions of the customer performed while in the sub-group, the customer action data including product purchase data and product response data;
  - for each sub-group, storing the collected customer action data in a dataset of the customer in a data storage device;
  - for each sub-group, clustering the customer action data from the dataset of the customer into at least one cluster according to a data pattern identified in the customer action data for the sub-group;

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pending on [??]pages 1 and 2 in the Final Action, the Examiner indicates claims 16–19 "have been entered" on page 2 of the Final Action. Claims 16–19 further appear in the body of the rejection under 35 U.S.C. § 103(a) as unpatentable over Gemmell and Kendall. Final Act. 32–42. And Appellants indicate these claims as pending. App. Br. 44–46 (Claims App'x). Accordingly, for clarity, we indicate here claims 16–19 are pending, and deem the Examiner's omissions [??] in this regard harmless.

analyzing, by the at least one hardware processor, the customer action data collected in each sub-group to determine a product preference propensity of the customer for a product in each sub-group, wherein the analyzing comprises, for each sub-group, determining at least one common attribute in the at least one cluster; and determining the customer's product preference propensity based on the at least one common attribute, wherein the determined product preference propensity of the customer for the product varies across different ones of the sub-groups;

for each sub-group, determining a product preference propensity across the plurality of members of the sub-group;

determining a target sub-group of the sub-groups in which to target the customer based on the product preference propensities of the customer for the product across the subgroups and the product preference propensities across the plurality of members for the subgroups;

determining the customer is currently in the target sub-group instead of another one of the sub-groups based on controlled communications of the customer in the target sub-group to invoke the targeting of the customer with the electronic display, wherein the sub-groups are kept separate in the online social network through features or functionalities of the online social network; and

in response to determining the customer is in the target sub-group, providing the customer when within the target sub-group with an electronic display for the product.

(App. Br. Claims Appendix, 39–40.)

### THE REJECTIONS

The Examiner rejected claims 1, 3–9, 11–13, 15, and 23–25 under 35 U.S.C. § 101 as being directed to ineligible subject matter. Final Act. 3–5.<sup>3,4</sup>

The Examiner rejected claims 1, 3–9, 11–13, 15–19, and 23–25 under 35 U.S.C. § 103(a) as being unpatentable over Gemmell et al., (US 2011/0320250 A1, published Dec. 29, 2011; hereinafter “Gemmell”) and Kendall et al., (US 2010/0257023 A1, published Oct. 7, 2010; hereinafter “Kendall ’023”). Final Act. 6–45.<sup>5</sup>

### THE INELIGIBILITY REJECTION

The Examiner concludes that the claims constitute an abstract idea. Final Act. 3. The Examiner further concludes the claims do not include additional elements that amount to significantly more than the abstract idea.

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<sup>3</sup> Throughout this opinion, we refer to (1) the Final Rejection mailed Dec. 18, 2015 (“Final Act.”); (2) the Appeal Brief filed Aug. 10, 2016 (“App. Br.”); (3) the Examiner’s Answer mailed Oct. 20, 2016 (“Ans.”); and (4) the Reply Brief filed Dec. 13, 2016 (“Reply Br.”).

<sup>4</sup> On the record before us, we presume that the Examiner did not reject claims 16–19 under 35 U.S.C. § 101. Unlike the obviousness rejection, claims 16–19 do not appear anywhere related to the § 101 rejection of claims 1, 3–9, 11–13, 15, and 23–25 in the Final Rejection and the Answer. *See* Final Act. 2–5, 47–50; Ans. 3–9.

<sup>5</sup> On the record before us, we presume that the Examiner rejected claims 16–19 under 35 U.S.C. § 103(a) as unpatentable over Gemmell and Kendall. Although claims 16–19 do not appear in the header for this rejection (Final Act. 6), they nonetheless appear in the body of the rejection (*id.* at 32–42). Accordingly, based on the record before us, we presume that the Examiner intended to reject claims 16–19 under § 103 and deem the Examiner’s error in this regard as harmless.

*Id.* at 4–5. Accordingly, the Examiner ultimately concludes the claims are ineligible under § 101. *Id.* at 3–5.

Appellants argue that the claimed invention is not directed to an abstract idea. App. Br. 11–16; Reply Br. 3–8. Appellants further argue the elements of Appellants’ claims amount to significantly more than an abstract idea. App. Br. 17–26; Reply Br. 8–16. According to Appellants, the independent claims are comparable to those in *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014) because Appellants’ independent claims each recite a combination of technical elements necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks. App. Br. 19–22; Reply Br. 11–12.

#### ISSUE

Has the Examiner erred in rejecting claims 1, 3–9, 11–13, 15, and 23–25 by concluding that they are directed to ineligible subject matter under § 101.

#### ANALYSIS

To determine whether claims are patent eligible under § 101, we apply the Supreme Court’s two-step test articulated in *Alice Corp. Proprietary Ltd. v. CLS Bank International*, 134 S. Ct. 2347 (2014). First, we determine whether the claims are directed to a patent-ineligible concept: laws of nature, natural phenomena, and abstract ideas. *Id.* at 2354–55. If so, we then proceed to the second step and examine the claim’s elements—both individually and as an ordered combination—to determine whether the claim

contains an “inventive concept” sufficient to transform the claimed abstract idea into a patent-eligible application. *Id.* at 2357.

### *Alice Step One*

We begin by noting that the Examiner concludes the claims are directed to two separate abstract ideas—(1) a longstanding business practice of targeted advertising; and (2) an “idea of itself” that our reviewing court has found abstract: A process for using categories to organize, store, and transmit information, *Cyberfone Sys., LLC v. CNN Interactive Grp.*, 558 F. App’x 988 (Fed. Cir. 2014) (unpublished); and mental steps of comparing new and stored information, *SmartGene, Inc. v. Advanced Biological Labs., SA*, 555 F. App’x 950 (Fed. Cir. 2014), *cert. denied*, 135 S. Ct. 58 (2014). Final Act. 3.

In the Appeal Brief, Appellants argue only the Examiner’s second—not the first—reason why the claims are directed to an abstract idea under *Alice* step one. *See* App. Br. 11–15. But on pages 4–6 of the Reply Brief, Appellants argue in detail the Examiner’s first reason why the claims are directed to an abstract idea under *Alice* step one. Accordingly, these newly-raised arguments on pages 4–6 of the Reply Brief are deemed to be waived as untimely. *See* 37 C.F.R. § 41.41(b)(2) (noting that any argument raised in the Reply Brief which was not raised in the Appeal Brief, or is not responsive to an argument raised in the Examiner’s Answer will not be considered by the Board for purposes of the present appeal, unless good cause is shown).

The dispute implicates the “directed to” inquiry. *Alice* step one’s “‘directed to’ inquiry applies a stage-one filter to claims, considered in light

of the specification, based on whether ‘their character as a whole is directed to excluded subject matter.’” *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016) (quoting *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015)). The Specification discusses the problem to be solved by the invention—estimating a customer’s product preference propensities among different sub-groups of a social network. Spec. ¶ 9. According to the Specification, a customer possesses multiple preferences and purchase propensities for the same product among the different sub-groups. *Id.* According to the Specification, the inventors solved the problem by determining which product to display to the customer in which sub-group. *Id.* ¶ 10.

Here, claim 1 requires six distinct steps: (A) collecting customer action data for a customer’s actions performed while in a determined sub-group; (B) clustering the customer action data according to a data pattern; (C) determining product preference propensities of a product based on the customer’s customer action data and other members of the sub-group; (D) determining a target sub-group based on the determined product preference propensities; (E) determining the customer is currently in the target sub-group based on the customer’s controlled communications; and (F) providing the customer a display of the product. Thus, even assuming that the arguments on pages 4–6 of the Reply Brief are timely, which they are not, contrary to Appellants’ arguments, we agree with the Examiner that in light of the Specification discussed above, claim 1 as a whole, is directed to the abstract idea of targeted advertising—a fundamental economic and business practice. Final Act. 3. Nor do we find availing Appellants’ unfounded contention that only abstract ideas similar to what courts have

identified can properly support a § 101 rejection. *Id.* at 4. *See Alice*, 134 S. Ct. at 2357 (recognizing that “we need not labor to delimit the precise contours of the ‘abstract ideas’ category in this case”).

“[C]onventional business practices are often found to be abstract ideas, even if performed on a computer.” *Enfish*, 822 F.3d at 1335 (citing *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1362–63 (Fed. Cir. 2015)); *see also DDR Holdings*, 773 F.3d at 1256. For the reasons discussed above, Appellants do not persuasively rebut the Examiner’s specific findings and conclusions in this regard. Accordingly, we find the claims are directed to an abstract idea under the first step of *Alice*.

#### *Alice Step Two*

Turning to the step two of the *Alice* analysis, Appellants compare the claims to those of *DDR Holdings*. App. Br. 19–22. In response, the Examiner finds Appellants’ claims are not comparable to *DDR Holdings* because the abstract idea of targeted advertising is a problem faced by all content providers. Ans. 7. In support of this finding, the Examiner provides an example involving a user viewing a live football game at a stadium who is shown advertising for team merchandise, where team merchandise advertisements are directed to the respective fans of each team, namely in the direction of those particular fans. *Id.*; *see also* Final Act. 49.

These findings, however, are conclusory and unsupported and, therefore, insufficient to show that the purported facts are well-understood, routine, and conventional. *See Berkheimer v. HP Inc.*, 881 F.3d 1360, 1369 (Fed. Cir. 2018) (“Whether something is well-understood, routine, and

conventional to a skilled artisan at the time of the patent is a factual determination.”).

In *DDR Holdings*, the Federal Circuit held eligible claims addressing the problem of retaining website visitors who, if adhering to the well-understood, routine, and conventional functioning of Internet hyperlink protocol, would be transported instantly away from a host’s website after clicking on an advertisement and activating a hyperlink. *DDR Holdings*, 773 F.3d at 1257. In reaching this determination, the court noted that the claims “specify how interactions with the Internet are manipulated to yield a desired result—a result that overrides the routine and conventional sequence of events ordinarily triggered by the click of a hyperlink.” *Id.* at 1258. The court held that claims were eligible because they recited a solution “necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks.” *Id.* at 1257.

Given this holding, we agree with Appellants (App. Br. 20) that the claimed steps of determining a customer’s various product preference propensities, and then determining when the customer is currently in a target sub-group—steps (D) and (E) of claim 1 discussed above—is a challenge that is particular to the Internet and, therefore, the claimed invention is necessarily rooted in computer technology to overcome that problem.

For the foregoing reasons, then, the recited elements—considered both individually and as an ordered combination—contain an “inventive concept” sufficient to transform the recited abstract idea into a patent-eligible application. Therefore, we are persuaded that the Examiner erred in rejecting claims 1–20 under § 101.

### THE OBVIOUSNESS REJECTION

We also do not sustain the Examiner's obviousness rejection of independent claim 1. The Examiner finds that Gemmell discloses many recited elements of claim 1 including, among other things, collecting customer action data for each sub-group of a social network of which a customer is determined to be a member. Final Act. 6–7. The Examiner acknowledges that Gemmell does not store in a data storage device the collected customer action data in a dataset of the customer. *Id.* at 7–8. The Examiner, however, quotes language from Kendall '023's paragraphs 28 and 50 as teaching this feature in concluding that the claim would have been obvious. *Id.* at 8–9. Thus, the Examiner's rejection is premised on the purported existence of particular quoted language in Kendall '023's paragraphs 28 and 50. Yet the quoted language does not exist in paragraphs 28 and 50 of Kendall '023, much less elsewhere in Kendall '023.

Equally puzzling is Appellants' apparent acknowledgement that the non-existent quoted language exists in Kendall '023 by also quoting the non-existent language. App. Br. 37. Moreover, Appellants quote paragraph 8 of Kendall '023 that is in fact paragraph 5 of Kendall '023. *Id.* Although Appellants do not identify the Examiner's apparent oversight in citing Kendall '023, Appellants nevertheless contest the Examiner's reliance on that reference. *Id.* at 31–32, 37. Given these contested findings, and the fact that the Examiner's reliance on Kendall '023 is erroneous on its face, the Examiner failed to satisfy the requisite burden of production. *See In re Jung*, 637 F.3d 1356, 1362 (Fed. Cir. 2011). Thus, we must reverse this rejection. To do otherwise would sustain a rejection that is not based on substantial evidence, for no reasonable mind would accept the Examiner's

findings as adequate to support the Examiner's obviousness conclusion. *See In re Gartside*, 203 F.3d 1305, 1312 (Fed Cir. 2000).

Accordingly, we are persuaded that the Examiner erred in rejecting (1) independent claim 1; (2) independent claims 13 and 17 which recite commensurate limitations; and (3) dependent claims 3–9, 11, 12, 15, 16, 18, 19, and 23–25 for similar reasons.

#### NEW GROUND OF REJECTION

Under 37 C.F.R. § 41.50(b), we enter the following new ground of rejection. Claims 1, 13, and 17 are rejected under 35 U.S.C. § 103(a) as unpatentable over Gemmell and Kendall et al., (US 2009/0119167 A1; May 7, 2009) (hereinafter “Kendall ’167”). Although the Examiner’s quoted language does not exist in Kendall ’023’s paragraphs 28 and 50 as noted previously, this language nevertheless exists in Kendall ’167’s paragraphs 28 and 50. Therefore, we adopt as our own the Examiner’s findings regarding claims 1, 13, and 17, and merely replace the Examiner’s quoted language that does not exist in Kendall ’023’s paragraphs 28 and 50 with Kendall ’167’s paragraphs 28 and 50.

Claim 1 recites, in pertinent part, for each sub-group, clustering customer action data from a dataset of a customer into at least one cluster according to a data pattern identified in the customer action data for the sub-group. In the rejection, the Examiner finds that each of Gemmell’s users individually performs actions in a social group, and the user’s actions form a cluster of actions relating to a data pattern associated with a product. *See* Ans. 9 (citing Gemmell ¶ 21; Fig. 2); *see also* Final Act. 9 (additionally citing Gemmell ¶¶ 10, 28–29).

We see no error in this finding. Gemmell’s users share messages with other users of a social group including, “e.g., questions, comments, user reviews or user ratings, product recommendations, or product recommendation requests.” Gemmell ¶ 21. Gemmell’s social network monitors the users’ messages of a social group and detects when the users’ messages indicate a “user interest” in a product. *Id.* ¶¶ 21, 28. For example, Gemmell’s user interest is detected by monitoring the users’ search queries associated with the product, “which may indicate a user interest **84** of the user **14** that may be shared with other users **14** of the social group **24**.” *Id.* ¶ 28 (emphasis added). In another example, “if the user review comprises a positive user review of the product **38**, the user **14** . . . may have a user interest **84** in the product **38**.” *Id.* (emphasis added). Thus, contrary to Appellants’ contention that Gemmell does not detect a particular user’s interest (App. Br. 32), determining *the user* having an interest in a product that is shared with the social group at least suggests determining a particular user’s interest in the product. And contrary to Appellants’ contention that no data pattern for a particular user is identified in Gemmell (*id.*), determining the user having an interest in *one particular product* across the user’s various forms of communication discussed above (e.g., a user’s search queries or user review in the user’s social group) (the claimed “customer action data”) at least suggests identifying a data pattern in the user’s various forms of communication for the user’s social group.

Claim 1 further recites, in pertinent part, determining a product preference propensity of a customer for a product in each sub-group, the product preference propensity varying across different ones of the customers’ sub-groups. In the rejection, the Examiner finds Gemmell’s user

receives different offers for a product in each social group, and thus each offer for the product varies across different ones of the user's social groups. *See* Ans. 10 (citing Gemmell ¶¶ 21, 38; Figs. 2, 8); *see also* Final Act. 9–11 (additionally citing Gemmell ¶¶ 20, 22, 28, 29, 39).

We see no error in this finding. Gemmell's users may belong to multiple social groups, and each social group may receive its own distinct offer of a product. Gemmell ¶ 38. For example, Gemmell's Figure 8 illustrates a first user that is a member of three social groups, each social group receiving a separate offer for a product. *Id.* ¶ 39. Gemmell's social network compares the user's offers and recommends an offer. *Id.* Thus, contrary to Appellants' contention that Gemmell does not determine a particular customer's product preference for a product across different sub-groups (App. Br. 31, 34–35), Gemmell's social network at least suggests determining a user's offer for a product (the claimed "product preference propensity") in each sub-group, the offer varying across different ones of the user's sub-groups. And to the extent Appellants contend that Gemmell does not disclose determining a customer's product preference propensity *while in* a particular sub-group or *while in* different sub-groups (App. Br. 31), such an argument is not commensurate with the scope of claim 1, which does not recite that the customer's product preference propensity is determined at the same time the customer is in any particular sub-group.

Accordingly, claim 1, and, for substantially the same reasons, claims 13 and 17, stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Gemmell and Kendall '167.<sup>6</sup>

#### CONCLUSION

The Examiner erred in rejecting claims 1, 3–9, 11–13, 15–19, and 23–25 under 35 U.S.C. §§ 101 and 103(a).

We enter a new ground of rejection for claims 1, 13, and 17 under § 103.

#### DECISION

The Examiner's decision to reject claims 1, 3–9, 11–13, 15–19, and 23–25 is reversed.

This decision contains a new ground of rejection for claims 1, 13, and 17 pursuant to 37 C.F.R. § 41.50(b). Section 41.50(b) provides “[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review.”

Section 41.50(b) also provides that Appellants, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of

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<sup>6</sup> We leave to the Examiner to consider the patentability of dependent claims 3–9, 11, 12, 15, 16, 18, 19, and 23–25 in light of our findings and conclusions above regarding claims 1, 13, and 17. The fact that we decline to enter new grounds of rejection for the remaining claims should not be construed to mean that we consider any of claims 3–9, 11, 12, 15, 16, 18, 19, and 23–25 to be patentable. Rather, we leave that question to the Examiner to consider after this opinion.

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the following two options with respect to the new grounds of rejection to avoid termination of the appeal as to the rejected claims:

(1) *Reopen prosecution.* Submit an appropriate amendment of the claims so rejected or new Evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the prosecution will be remanded to the examiner. . . .

(2) *Request rehearing.* Request that the proceeding be reheard under § 41.52 by the Board upon the same Record.

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

REVERSED  
37 C.F.R. § 41.50(b)