UNITED STATES PATENT AND TRADEMARK OFFICE

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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 NIR NICE, NOAM KOENIGSTEIN,
ULRICH PAQUET, and SHAHAR ZVI KEREN

_____

Appeal 2017-009118
Application 14/059,891
Technology Center 3600

_____

Before JAMES R. HUGHES, JOHN D. HAMANN, and JOYCE CRAIG,
Administrative Patent Judges.

CRAIG, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants[1] appeal under 35 U.S.C. § 134(a) from the Examiner's
Final Rejection of claims 1–15 and 17–20, which are all of the claims
pending in this application.[2] We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

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[1] According to Appellants, the real party in interest is MICROSOFT
TECHNOLOGY LICENSING, LLC. Br. 3.
[2] Claim 16 has been canceled. Br. 43 (Claims App'x).

INVENTION

Appellants' invention relates to a multiple persona based modeling. Title. Claim 1 is illustrative and reads as follows:

1. One or more computer storage media storing computer-useable instructions that, when used by one or more computing devices, cause the one or more computing devices to perform operations for providing sets of item recommendations for multiple tastes identified from a single user profile, the operations comprising:

accessing user history information identifying a plurality of items for the single user profile;

identifying an item vector for each of the plurality of items, each item vector being identified from an item model storing a plurality of item vectors for a catalog of items;

grouping the item vectors corresponding with the plurality of items from the user history information into a plurality of clusters of item vectors;

generating a taste vector for each cluster of item vectors to provide a plurality of taste vectors, each taste vector being generated as a function of item vectors from a corresponding cluster of item vectors;

selecting a set of item recommendations for each taste vector, each set of item recommendations comprising one or more item recommendations selected based on a corresponding taste vector; and

communicating the sets of item recommendations, over a communication network, to a user device associated with the single user profile,

wherein the user device includes an application that presents the sets of item recommendations to a user associated with the single user profile.

REJECTIONS

Claims 1–15 and 17–20 stand rejected under 35 U.S.C. § 101 because the claimed invention is directed to a judicial exception (i.e., an abstract idea) without significantly more. Final Act. 5–6.

Claims 1–14 stand rejected under 35 U.S.C. § 101 because the claims are directed to signals per se, under the broadest reasonable interpretation, and, therefore, are directed to ineligible subject matter. Final Act. 7.

Claims 1–3, 6–15, and 18–20 stand rejected under 35 U.S.C. § 103 as unpatentable over the combination of Kimble et al. (US 2010/0251305 A1; published Sept. 30, 2010) ("Kimble") and ARTE et al. (US 2011/0061069 A1; published Mar. 10, 2011) ("Arte"). Final Act. 8–16.

Claim 4 stands rejected under 35 U.S.C. § 103 as unpatentable over the combination of Kimble, Arte, and Björk et al. (US 2013/0290131 A1; published Oct. 31, 2013) ("Björk"). Final Act. 16–17.

Claim 5 stands rejected under 35 U.S.C. § 103 as unpatentable over the combination of Kimble, Arte, and Chen et al. (US 2011/0184806 A1; published July 28, 2011) ("Chen"). Final Act. 17.

ANALYSIS

Rejection of Claims 1–15 and 17–20 under 35 U.S.C. § 101

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

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

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

Concepts determined to be abstract ideas, and thus patent ineligible, include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–20; *Bilski*, 561 U.S. at 611); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as "molding . . . rubber products" (*Diamond v. Diehr*, 450 U.S. 175, 193 (1981)); "tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores" (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S. 252, 267–68 (1854))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

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

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

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

The USPTO recently published revised guidance on the application of § 101. 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) (hereinafter "2019 Guidance"). Under that guidance, we first look to whether the claim recites:

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

> (2) additional elements that integrate the judicial exception into a practical application (*see* MPEP § 2106.05(a)–(c), (e)–(h)) (9th ed. 2018).

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

>(3) adds a specific limitation beyond the judicial exception that is not "well-understood, routine, conventional" in the field (*see* MPEP § 2106.05(d)); or
>
>(4) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.

See 2019 Guidance. Patent eligibility under 35 U.S.C. § 101 is a question of law that is reviewable de novo. *See Dealertrack, Inc. v. Huber*, 674 F.3d 1315, 1333 (Fed. Cir. 2012).

Here, the Examiner concluded the claims are abstract because the claims are directed to "providing item recommendation to multiple users in a household based on their consumption habits." Final Act. 5. Appellants contend the Examiner erred because the Examiner's characterization of the abstract idea is overly broad and ignores limitations in the claims. Br. 14.

Step 2A, Prong One – Recited Judicial Exception

Step 2A of the 2019 Guidance is a two-prong inquiry. In Prong One we evaluate whether the claim recites a judicial exception. For abstract ideas, Prong One represents a change as compared to prior guidance because we determine whether the claim recites mathematical concepts, certain methods of organizing human activity, or mental processes.

We conclude the following steps of independent claim 1 recite mental processes that practically could be performed via pen and paper or in a person's mind:

>accessing user history information identifying a plurality of items for the single user profile;

identifying an item vector for each of the plurality of items, each item vector being identified from an item model storing a plurality of item vectors for a catalog of items;

grouping the item vectors corresponding with the plurality of items from the user history information into a plurality of clusters of item vectors;

generating a taste vector for each cluster of item vectors to provide a plurality of taste vectors, each taste vector being generated as a function of item vectors from a corresponding cluster of item vectors;

selecting a set of item recommendations for each taste vector, each set of item recommendations comprising one or more item recommendations selected based on a corresponding taste vector;

Br. 39 (Claims App'x).

Similarly, we conclude the following steps of independent claim 15 recite mental processes that practically could be performed via pen and paper or in a person's mind:

identifying . . . a plurality of items consumed by one or more users using the single user profile;

identifying . . . a set of item vectors from an item model that includes a plurality of item vectors that each represent an item from a catalog of items, each item vector from the set of item vectors corresponding with one of the plurality of items consumed using the single user profile;

grouping . . . the set of item vectors into a plurality of clusters of item vectors;

generating . . . a plurality of taste vectors for the single user profile based on the plurality of clusters of item vectors, each taste vector being generated as a function of item vectors from a corresponding cluster of item vectors;

selecting . . . a set of item recommendations for each taste vector based on items in the catalog of items, each set of item recommendations comprising one or more item

      recommendations selected based on a corresponding taste
      vector from the plurality of taste vectors;

Br. 42 (Claims App'x).

We also conclude the following limitations of independent claim 20 recite mental processes that could practically be performed via pen and paper or in a person's mind:

      identify items consumed using the single user profile;

      identify an item vector for each item consumed using the
single user profile;

      group the item vectors into a plurality of clusters of item
vectors;

      generate a taste vector for each cluster of item vectors to
provide at least two taste vectors for the user profile;

      select a set of item recommendations for each taste vector,
each set of item recommendations comprising one or more item
recommendations selected using a corresponding taste vector;

Br. 43–44 (Claims App.).

Because we conclude the independent claims recite an abstract idea, we proceed to Prong Two to determine whether the claims "integrate" the abstract idea into a "practical application." 2019 Guidance.

Step 2A, Prong Two – Practical Application

If a claim recites a judicial exception, in Prong Two we determine whether the recited judicial exception is integrated into a practical application of that exception by: (a) identifying whether there are any additional elements recited in the claim beyond the judicial exception(s); and (b) evaluating those additional elements individually and in combination to determine whether they integrate the exception into a practical application. If the recited judicial exception is integrated into a practical application, the claim is not directed to the judicial exception.

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Here, claim 1 recites the additional elements of "computer storage media storing computer-useable instructions," "computing devices," and "communicating the sets of item recommendations, over a communication network, to a user device associated with the single user profile, wherein the user device includes an application that presents the sets of item recommendations to a user associated with the single user profile." Claim 15 recites the additional elements of a similar "communicating" step, "computing processes," and "computing devices." Claim 20 recites "[a] computerized system," "processors," "computer storage media," and a "communicate" limitation similar to the "communicating" steps in claims 1 and 15.

Considering claim 1 as a whole, none of the additional elements applies or uses the abstract idea in a meaningful way such that the claim as a whole is more than a drafting effort designed to monopolize the exception. In particular, the "communicating" step amounts to insignificant post-solution activity because adding a final step of outputting data does not add a meaningful limitation to the process of selecting item recommendations in claim 1. In particular, adding a final step of communicating recommendations over a network to a user device does not add a meaningful limitation to the process of selecting the recommendations. Similar "additional elements" are recited in claims 15 and 20.

For the reasons set forth by the Examiner, we are not persuaded by Appellants' arguments that claim 1 improves the functioning of the computer itself or any other technology or technical field. *See* Ans. 7.

For these reasons, we determine the abstract idea is not integrated into a practical application and the claims are directed to the abstract idea. Therefore, we proceed to Step 2B.

Step 2B – Inventive Concept

Having determined claim 1 is directed to an abstract idea that is not integrated into a practical application, we now evaluate whether the additional elements add a specific limitation that is not well-understood, routine, or conventional activity in the field, or simply append well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the abstract idea. *See* 2019 Guidance.

Here, the Examiner determined, and we agree, that the only elements beyond the abstract idea are generic computer components used to perform generic computer functions (Ans. 7–8)—a determination that is supported by Appellants' Specification (*see, e.g.,* Spec. ¶¶ 21–25). Appellants' Specification, for example, describes "computing device" as including the broad categories of "workstation," "server," "laptop," and "hand-held device," without describing the particulars. Spec. ¶ 23. The Specification also describes "computer-readable media" as "any available media that can be accessed by computing device 100." *Id.* ¶ 24. The Specification also describes "computer storage media" (i.e., memory) in a general way. *Id.* ¶ 25.

With regard to the recited "communicate" and "communicating" elements, courts have recognized that sending messages over a network is a well-understood, routine, and conventional function when claimed in a merely generic manner (e.g., at a high level of generality) or as insignificant extra-solution activity, as it is here. *See, e.g., OIP Techs., Inc. v. Amazon.com, Inc.,* 788 F.3d 1359, 1364 (Fed. Cir. 2015).

The Federal Circuit, in accordance with *Alice*, has "repeatedly recognized the absence of a genuine dispute as to eligibility" where claims

have been defended as involving an inventive concept based "merely on the idea of using existing computers or the Internet to carry out conventional processes, with no alteration of computer functionality." *Berkheimer v. HP Inc.*, 890 F.3d 1369, 1373 (Fed. Cir. 2018) (Moore, J., concurring).

Appellants' argument that the claims "pose no risk of preempting an abstract idea, itself" is also not persuasive. *See* Br. 30. Preemption is not the sole test for patent eligibility, and any questions on preemption in the instant case have been resolved by the Examiner's *Alice* analysis. As our reviewing court has explained: "questions on preemption are inherent in and resolved by the § 101 analysis," and, although "preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility." *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015); *cf. OIP Techs.*, 788 F.3d at 1362–63 ("[T]hat the claims do not preempt all price optimization or may be limited to price optimization in the e-commerce setting do not make them any less abstract.").

Appellants further contend the Examiner failed to establish a prima facie case of patent ineligibility because the Examiner failed to "identify the elements in the rejection and explain why they do not add significantly more to the exception." Br. 31 (emphasis omitted).

We disagree. The Federal Circuit has repeatedly noted that "the 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 Examiner satisfies the burden of establishing a prima facie case under 35 U.S.C. § 132 by setting forth a rejection in a sufficiently articulate and informative manner. *See In re Jung*, 637 F.3d 1356, 1363 (Fed. Cir.

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2011). If the Examiner "adequately explain[s] the shortcomings . . . the burden shifts to the applicant to rebut the prima facie case with evidence and/or argument." *Hyatt*, 492 F.3d at 1370. The Final Office Action adequately explains the § 101 rejection. *See* Final Act. 5–7. The Examiner's statements satisfy § 132(a) because they apply the *Alice* analytical framework and apprise Appellants of the reasons for the § 101 rejection under that framework. Appellants have not responded by alleging a failure to understand the rejection. To the contrary, Appellants clearly identify the abstract idea identified by the Examiner. *See* Br. 15.

For these reasons, we are not persuaded that the Examiner erred in rejecting claims 1–15 and 17–20 under § 101.

Accordingly, we affirm the Examiner's § 101 rejection of independent claim 1, as well as the Examiner's § 101 rejection of independent claims 15 and 20, and dependent claims 2–14 and 17–19, not argued separately. Br. 11–12.

Rejection of Claims 1–14 under 35 U.S.C. § 101

Appellants argue the Examiner erred in concluding that the recited "computer storage media" in claims 1–14 can be interpreted to be a transitory signal. Br. 33. Appellants argue that paragraph 24 of Appellants' Specification explicitly describes that "[c]omputer storage media does not comprise signals per se." *Id.*

We are not persuaded that the Examiner erred. The Board held in a precedential decision that a recited machine-readable storage medium, having a program stored thereon, and absent an express limitation of scope to non-transitory storage media, is ineligible under § 101 because it encompasses transitory media. *Ex parte Mewherter*, 107 USPQ2d 1857, 1862 (PTAB 2013) (precedential). Appellants' Specification, particularly

paragraph 24, does not disclaim propagation media or transitory propagating
signals from the meaning of "computer storage media."

As the Examiner explained, paragraph 24 of the Specification
describes:

> Communication media typically embodies computer-readable
> instructions, data structures, program modules or other data in a
> modulated data signal such as a carrier wave or other transport
> mechanism and includes any information delivery media. The
> term "modulated data signal" means a signal that has one or
> more of its characteristics set or changed in such a manner as to
> encode information in the signal.

Ans. 9, citing Spec. ¶ 24.

For these reasons, we sustain the Examiner's § 101 rejection of claims
1–14. We agree with the Examiner that the broadest reasonable
interpretation of the claims covers a transitory signal. *Id.*

Rejection of Claims 1–15 and 17–20 under 35 U.S.C. § 103(a)

The argument underlying all of Appellants' challenges to the
Examiner's findings regarding the teachings of Kimble and Arte is that "[i]n
Kimble, multiple profiles are combined to provide recommendations based
on the combination of the profiles." Br. 34. Thus, according to Appellants,
the cited portions of the prior art do not teach or suggest the "single user
profile," as recited in claim 1. *Id.* (emphasis omitted).

We are not persuaded of Examiner error. As an initial matter of claim
construction, we give the claim its broadest reasonable interpretation
consistent with the Specification. *See In re Morris*, 127 F.3d 1048, 1054
(Fed. Cir. 1997). Appellants' Specification defines "user profile" as "any
profile, account, or other mechanism that tracks information for a user or
group of users or otherwise allows a user or group of users to access a
service for which recommendations may be given[]." Spec. ¶ 13. The

Specification uses "one user profile" and "a single user profile" interchangeably. *Id.*

The Examiner found Kimble teaches "a single user profile" in paragraph 182, which teaches accessing a user profile. Final Act. 9. Appellants' arguments are anchored in the teaching in Kimble paragraph 201 of a composite profile 510. Br. 34. Appellants however, have failed to persuade us that the recited "a single user profile" is too narrow to encompass Kimble's composite profile, in which "one or more multiple profiles . . . for each user are employed so as to form a composite profile." Kimble ¶ 201. The plain language of the claim requires only "a single user profile," regardless of its origin or whether it is a composite user profile. "In the patentability context, claims are to be given their broadest reasonable interpretations[,] . . . limitations are not to be read into the claims from the specification." *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993) (citation omitted).

Appellants next contend the combination of Kimble and Arte fails to teach or suggest "grouping the item vectors corresponding with the plurality of items from the user history information into a plurality of clusters of item vectors," as recited by claim 1. Br. 34. Appellants argue that in claim 1 "the item vectors are for items from a single user profile." *Id.* (emphasis omitted).

Appellants' arguments are not persuasive for at least the reasons discussed above regarding the limitation "a single user profile." Moreover, Appellants have not persuasively rebutted the Examiner's findings based on paragraphs 161, 201, 204–06, and Figures 2–5c of Kimble. *See* Ans. 9–10.

Appellants further contend the combination of Kimble and Arte fails to teach or suggest "generating a taste vector for each cluster of item vectors

to provide a plurality of taste vectors, each taste vector being generated as a function of items vectors from a corresponding cluster of item vectors" and "selecting a set of item recommendations for each taste vector, each set of item recommendations comprising one or more item recommendations selected based on a corresponding taste vector," as recited in claim 1. Br. 35–36. Appellants again argue Kimble teaches combining multiple profiles to generate a composite profile for use in selecting recommendations. *Id.* at 36.

We are not persuaded of Examiner error for the reasons discussed above regarding the limitation "a single user profile." Moreover, Appellants have not persuasively rebutted the Examiner's findings based on Kimble paragraphs 148, 160–161, 215–233, and Figures 2–5c. *See* Ans. 10.

For these reasons, we are not persuaded the Examiner erred in finding the combination of Kimble and Arte teaches or suggests the disputed limitations of claim 1.

Accordingly, we sustain the Examiner's § 103(a) rejection of independent claim 1, as well as of independent claims 15 and 20, which Appellants argue are patentable for similar reasons. *See* Br. 36. We also sustain the Examiner's § 103(a) rejection of dependent claims 2, 3, 6–14, and 17–19, not argued separately with particularity. *See id.* at 37.

DECISION

We affirm the Examiner's decision rejecting claims 1–15 and 17–20.

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