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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ERIK VEE, JAYAVEL SHANMUGASUNDARAM,
LONG JI LIN, PEIJI CHEN, DATONG CHEN,
and QI HE

Appeal 2017-008788¹
Application 14/031,943²
Technology Center 3600

Before ANTON W. FETTING, MATTHEW S. MEYERS, and
ROBERT J. SILVERMAN, *Administrative Patent Judges*.

MEYERS, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

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

We AFFIRM.

¹ Our decision references Appellants' Appeal Brief ("Appeal Br.," filed November 29, 2016) and Reply Brief ("Reply Br.," filed May 23, 2017), and the Examiner's Answer ("Ans.," mailed March 23, 2017) and Final Office Action ("Final Act.," mailed June 29, 2016).

² Appellants identify "Excalibur IP, LLC, the assignee of record, which is a subsidiary of Yahoo! Inc." as the real party in interest. Appeal Br. 2.

CLAIMED INVENTION

Appellants' claims relate "to display advertising" (Spec. ¶ 2).

Claims 1, 8, and 15 are the independent claims on appeal. Claim 1, reproduced below with bracketed notations added, is illustrative of the claimed subject matter:

1. A method of providing a display advertising supply forecast to an advertiser system over a network, comprising:

[a] receiving, at an ad supply forecaster system, a query over a network from an advertiser system, the query to estimate a number of first impressions, which are to occur in a future time period, that have a combination of specified attribute values, the combination including a first subset of the specified attribute values and a second subset of the specified attribute values;

[b] combining, by an ad supply forecaster system, an interim trend and a number of second impressions that are linked to the interim trend to provide a revised trend, the second impressions occurring in a past time period and having the first subset of the specified attribute values and the second subset of the specified attribute values, the interim trend being based on a plurality of aggregates of impressions that have a third combination of attribute values, the third combination of attribute values being related to the second subset of the specified attribute values, the plurality of aggregates corresponding to a plurality of respective time periods; and

[c] estimating, by the ad supply forecaster system, the number of the first impressions that have the combination of specified attribute values based on the revised trend to provide the display advertising supply forecast;

[d] wherein the ad supply forecaster system provides the advertiser system an estimated number of the first impressions having the specified attribute values specified in the query received from the advertiser system.

REJECTIONS

Claims 1–20 are rejected under 35 U.S.C. § 101 as directed to non-statutory subject matter.

Claims 1–20 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1–13 and 21–27 of U.S. Patent No. 8,554,621 B2 patent (issued Oct. 8, 2013, “the ’621 patent”).

ANALYSIS

Patent-Ineligible Subject Matter

Appellants argue the pending claims as a group (*see* Appeal Br. 5–8; *see also* Reply Br. 2–15). We select independent claim 1 as representative, and the remaining claims stand or fall with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv).

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 id.* 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, 192 (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 (1853))); and manufacturing flour (*Gottschalk*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

If the claim is “directed to” an abstract idea, we turn to the second step of the *Mayo/Alice* 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 (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.* (alterations in original) (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 United States Patent and Trademark Office recently published revised guidance on the application of § 101. *2019 Revised Patent Subject*

Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) (“2019 Revised 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 activity such as a fundamental economic practice, or mental processes); and

(2) additional elements that integrate the judicial exception into a practical application, i.e., that “apply, rely on, or use the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception.” *See* 2019 Revised Guidance, 84 Fed. Reg. at 53 ; *see also* MPEP § 2106.05(a)–(c), (e)–(h).

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 Revised Guidance.

In rejecting the pending claims under 35 U.S.C. § 101, the Examiner analyzes the claims using the *Mayo/Alice* two-step framework (*see* Final Act. 4–6; *see also* Ans. 2–10). The Examiner determined that the claims are directed to the abstract idea of “forecasting a supply of ads based on trends”

(Final Act. 2; *see also* Ans. 2), and more particularly, determined that independent claim 1 recites

in part, a system for performing the steps of receiving a request from an advertiser to estimate/forecast a number of ads to be displayed to users, combining trends with ads, estimating the number of ads that have specific characteristics, and providing a forecast of an estimated number of ads with the values specified in the advertiser's request.

(Final Act. 4).

The Examiner regards this characterization as being similar to: concepts identified as abstract ideas by the courts, such as comparing new and stored information and using rules to identify options (*SmartGene, Inc. v. Advanced Biological Labs*, 555 Fed. Appx. 950), using categories to organize, store, and transmit information (*Cyberfone Sys. V. CNN Interactive Grp.*, 558 Fed. Appx. 988), processing information through a clearinghouse (*Dealertrack Inc. v. Huber*, 674 F.3d 1315), and organizing information through mathematical correlations (*Digitech Image Tech., LLC v. Electronics for Imaging, Inc.*, 758 F.3d 1344).

(*Id.* at 4–5). According to the Examiner, the “concept[s] described in claims 1, 8, and 15 are not meaningfully different than those economic concepts found by the courts to be abstract ideas” (*id.* at 5). The Examiner further determined that independent claim 1 does not include additional elements or a combination of elements sufficient to transform the claim into a patent-eligible application of the abstract idea (*id.*).

When viewed through the lens of the 2019 Revised Guidance, the Examiner's analysis depicts the claimed subject matter as one of the ineligible “[c]ertain methods of organizing human activity” that include “fundamental economic principles or practices” and “commercial . . . interactions,” such as “advertising, marketing or sales activities or behaviors” and “business relations,” as well as “managing personal behavior

or relationships or interactions between people (including social activities, teaching, and following rules or instructions)” under Prong One of Revised Step 2A. *See* 2019 Revised Guidance, 84 Fed. Reg. at 51–52.

In response to the Examiner’s determination, Appellants argue that the Examiner erred in determining that the present claims are directed to an abstract idea and “grossly overgeneralizes the claim” (*see* Appeal Br. 3–5; *see also* Reply Br. 3–5).

Under the first prong of step 2A of the 2019 Revised Guidance, we first determine if the claims recite an abstract idea. In this regard, we note that the Specification is titled “IMPRESSION-TREND TECHNIQUES FOR PROVIDING A DISPLAY ADVERTISING SUPPLY FORECAST.” According to the Specification a publisher can theoretically “generate a forecast for every possible combination of attribute values for which inventory is available to ensure that a forecast for impressions having attribute values that are specified by an advertiser is available to be provided to the advertiser” (Spec. ¶ 5). The Specification, however, identifies that such a practice may be impractical, because “providing a forecast for every possible combination of attribute values may require extensive computations, which may consume substantial bandwidth and/or resources of the publisher” (*id.*).

To address this drawback, the present invention utilizes “an impression-trend technique to provide a display advertising supply forecast” (*id.* ¶ 6). A display advertising supply forecast is identified as “an estimate of a number of impressions, which are to occur at a future time period, that have specified attribute values” and an impression-trend technique is

described as one that “uses trends regarding past impressions to forecast a number of future impressions that have specified attribute values” (*id.*).

Consistent with this description, independent claim 1 recites broadly “[a] method of providing a display advertising supply forecast” including steps for “receiving . . . a query to estimate a number of first impressions, which are to occur in a future time period, that have a combination of specified attribute values, the combination including a first subset of the specified attribute values and a second subset of the specified attribute values,” “combining . . . an interim trend and a number of second impressions that are linked to the interim trend to provide a revised trend,” and “estimating . . . the number of the first impressions that have the combination of specified attribute values based on the revised trend to provide the display advertising supply forecast.”

Upon reviewing the Specification and the claim as whole, as summarized above, we agree with the Examiner that exemplary independent claim 1 is directed broadly to “forecasting a supply of ads based on trends,” and as such, at least directed to “organizing human activities.” Here, independent claim 1 receives information (i.e., a query (limitation [a])), and then analyzes information (i.e., combining an interim trend and a number of second impressions (limitation [b])) to estimate and provide a display advertising supply forecast (limitation [c]). Thus, it is clear that exemplary independent claim 1 recites a form of advertising, marketing or sales activities (*cf.* Spec. ¶¶ 2–6), and as such, recites fundamental economic practices and/or commercial interactions that, under the Revised Guidance, fall under the category of “certain methods of organizing human activity.” Accordingly, independent claim 1 recites an abstract idea. *See Ultramercial*,

Inc. v. Hulu, LLC, 772 F.3d 709, 715 (Fed. Cir. 2014) (Holding that claim “describ[ing] only the abstract idea of showing an advertisement before delivering free content” is patent ineligible.); *In re Ferguson*, 558 F.3d 1359, 1364 (Fed. Cir. 2009) (Holding methods “directed to organizing business or legal relationships in the structuring of a sales force (or marketing company)” to be ineligible.).

Having concluded that claim 1 recites a judicial exception, i.e., an abstract idea, we turn to the second prong of step 2A of the 2019 Revised Guidance and determine whether the claims recite a practical application of the recited judicial exception. Here we look to see if, for example, (i) any additional elements of the claims reflects an improvement in the functioning of a computer or to another technological field, (ii) an application of the judicial exception with, or by use of, a particular machine, (iii) a transformation or reduction of a particular article to a different state or thing (iv) or a use of the judicial exception in some other meaningful way beyond generally linking the use of the judicial exception to a particular technological environment. *See* 2019 Revised Guidance, 84 Fed. Reg. at 55; *See also* MPEP § 2106.05(a)–(c), (e)–(h).

Appellants argue that claim 1 is not directed to an abstract idea pursuant to the Federal Circuit decisions in *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016) and *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299 (Fed. Cir. 2016) (*see* Appeal Br. 6–8; *see also* Reply Br. 7–15). However, there is a fundamental difference between computer functionality improvements, on the one hand, and uses of existing computers as tools to perform a particular task, on the other. Indeed, the Federal Circuit applied this distinction in *Enfish* in rejecting a § 101

challenge at the step one stage of the *Mayo/Alice* analysis because the claims at issue focused on a specific type of data structure, i.e., a self-referential table for a computer database, designed to improve the way a computer carries out its basic functions of storing and retrieving data, and not on asserted advances in uses to which existing computer capabilities could be put. *Enfish*, 822 F.3d at 1335–36.

We find no parallel here between independent claim 1 and the claims in *Enfish* nor any comparable aspect in claim 1 that represents “an improvement to computer functionality.” Appellants assert that the focus of the claim is “on the improvement of generating an ad forecast in a manner that uses fewer resources” (Appeal Br. 7) and “to improve the underlying technology by reducing bandwidth and resource consumption for the publisher” (Reply Br. 9). However, Appellants do not persuade us that “forecasting a supply of ads based on trends” or even more specifically receiving information, i.e., a query (limitation [a]) and then analyzing information, i.e., combining an interim trend and a number of second impressions (limitation [b]) to estimate and provide a display advertising supply forecast (limitation [c]) provides a technological improvement, but rather we find the focus of claim 1 is on the implementation of the abstract idea, “for which computers are invoked merely as a tool.” *See Enfish*, 822 F.3d at 1336.

Here, Appellants argue that “[i]t is clear from the [S]pecification that the focus of the claims, as a whole, is to improve the underlying technology by reducing bandwidth and resource consumption for the publisher” (Reply Br. 7–9 (citing Spec. ¶¶ 28)). The difficulty with Appellants’ argument, however, is that the term “bandwidth” and any reference to “reducing

resources” is found only in the above paragraphs cited by the Appellants. Exemplary independent claim 1, unlike the claims found non-abstract in prior cases, uses generic computer technology to collect data, analyze the data, and then present the data based on the analysis, and does not recite an improvement to a particular computer technology. *See, e.g., McRO*, 837 F.3d at 1314–15 (finding claims not abstract because they “focused on a specific asserted improvement in computer animation”).

Furthermore, we find no indication in the Specification that this purported improvement to the computer, i.e., reduction of bandwidth and/or resources, invokes any assertedly inventive programming, requires any specialized computer hardware or other inventive computer components (*cf.* Spec. ¶¶ 27–30, 37, 39), i.e., a particular machine, or that the claimed invention is implemented using other than generic computer components to perform generic computer functions. *See DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1256 (Fed. Cir. 2014) (“[A]fter *Alice*, there can remain no doubt: recitation of generic computer limitations does not make an otherwise ineligible claim patent-eligible.”). Instead, we find that the “improvement” to which Appellants refer is a business improvement rather than an improvement to a technological or technical field (*see OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1363 (Fed. Cir. 2015) (“[R]elying on a computer to perform routine tasks more quickly or more accurately is insufficient to render a claim patent eligible.”)).

We also find no parallel between independent claim 1 and the claims at issue in *McRO* (*see* Appeal Br. 7–8; *see also* Reply Br. 10–13). Appellants assert that like the claims in *McRO*, the claims are patent-eligible because “[t]he specificity of the claims and the processes described therein

prevent preemption of all means of providing the same results” (Reply Br. 11).

However, the Federal Circuit premised its determination that the claims in *McRO* were patent-eligible, not merely on the specificity of the claimed animation scheme, but rather on the fact that the claims, when considered as a whole, were directed to a technological improvement over the existing, manual 3-D animation techniques and used limited rules in a process specifically designed to achieve an improved technological result in conventional industry practice. We are not persuaded that a comparable situation is presented here.

Instead, in the present invention, available data regarding impressions of online advertisements is simply analyzed/compared in order to improve a business practice. Here, as the Examiner points out, the limitations argued by Appellants are “a set of instructions (i.e. computer software) to implement the abstract idea on a basic computer” (Ans. 7). As our reviewing court has made clear, “relying on a computer to perform routine tasks more quickly or more accurately is insufficient to render a claim patent eligible.” *OIP Techs.*, 788 F.3d at 1363. Accordingly, we are not persuaded that independent claim 1 provides any improvement in computer technology and/or functionality to the claimed invention or that otherwise indicates that the claimed invention “appl[ies], rel[ies] on, or us[es] the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception.” *See* 2019 Revised Guidance, 84 Fed. Reg. at 55.

Turning to Step 2B of the of the 2019 Revised Guidance, we determine whether the additional elements (1) add a specific limitation or

combination of limitations that is not well-understood, routine, and conventional activity in the field, which is indicative that an inventive concept may be present or (2) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception, which is indicative that an inventive concept may not be present. *See* 2019 Revised Guidance, 84 Fed. Reg. at 56.

The Examiner determines under step two in the *Mayo/Alice* framework that independent claim 1

recites the additional limitations of a “processor” programmed to execute the method, and a “computer readable medium” for storing executable data. These components are recited at a high level of generality and are recited as performing generic computer functions routinely used in computer applications. Generic computer components recited as performing generic computer functions that are well-understood, routine and conventional activities amount to no more than implementing the abstract idea with a computerized system. The use of generic computer components to transmit information through an unspecified interface does not impose any meaningful limit on the computer implementation of the abstract idea. Thus, taken alone, the additional elements do not amount to significantly more than the above-identified judicial exception (the abstract idea).

(Final Act. 5; *see also* Ans. 6–10).

In response, Appellants argue that “[t]he lack of a prior art rejection is evidence that the invention causes a computer to operate in a novel or unusual manner” and “is strong evidence that the claims include ‘something significantly more’ and are patent eligible” (Reply Br. 15; *see also* Appeal Br. 6). However, to the extent Appellants maintain that the claimed invention is patent-eligible, i.e., that the claims amount to “significantly

more” than an abstract idea, and/or that the recited functions are not “well-understood, routine, and conventional activities,” because of the lack of § 102 or § 103 rejections of the claimed subject matter, Appellants misapprehend the controlling precedent.

A finding of novelty or non-obviousness does not automatically lead to the conclusion that the claimed subject matter is patent-eligible. Although the second step in the *Mayo/Alice* framework is termed a search for an “inventive concept,” the analysis is not an evaluation of novelty or non-obviousness, but rather, a search for “an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’” *Alice Corp.*, 134 S. Ct. at 2355 (alteration in original). “Groundbreaking, innovative, or even brilliant discovery does not by itself satisfy the § 101 inquiry.” *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 591 (2013). A novel and non-obvious claim directed to a purely abstract idea is, nonetheless, patent-ineligible. *See Mayo*, 566 U.S. at 90; *see also Diehr*, 450 U.S. at 188–89 (“The ‘novelty’ of any element or steps in a process, or even of the process itself, is of no relevance in determining whether the subject matter of a claim falls within the § 101 categories of possibly patentable subject matter.”).

Appellants last argue that independent claim 1 “recite[s] a particular ordered combination of steps” which constitute particular rules that “serve to prevent preemption of all processes having a similar goal” (*see Reply Br.* 10–12). However, a lack of complete preemption does not make the claims any less abstract. *See buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014); *see also Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788

F.3d 1371, 1379 (Fed. Cir. 2015) (“While preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility.”); *see also OIP Techs.*, 788 F.3d at 1362–1363 (“[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.”).

We are not persuaded, on the present record, that the Examiner erred in rejecting claims independent claim 1 under 35 U.S.C. § 101. Therefore, we sustain the Examiner’s rejection of independent claim 1, and claims 2–20, which fall with independent claim 1.

Double Patenting

The Examiner rejected claims 1–20 on the ground of nonstatutory double patenting over claims 1–13 and 21–27 of U.S. Patent No. 8,554,621 (the ’621 patent) (*see* Final Act. 2–3). Appellants argue that the present application is a divisional application of the ’621 patent (U.S. Patent Application 12/726,149), and as such, not “subject to nonstatutory double patenting rejections over their issued parent” (Reply Br. 15 (citing MPEP § 804.01)). Accordingly, we agree with Appellants that based on the current record, the ground of rejection cannot stand.

Based on the foregoing, we reverse the nonstatutory double patenting rejection of claims 1–20.

DECISION

The Examiner’s rejection of claims 1–20 under 35 U.S.C. § 101 is affirmed.

The Examiner’s rejection of claims 1–20 on the grounds of nonstatutory double patenting is reversed.

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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).

AFFIRMED