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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte RALF HERBRICH, THORE GRAEPEL, THOMAS MINKA, and PIERRE DANGAUTHIER

Appeal 2016-006604
Application 11/869,165
Technology Center 3700

Before PHILIP J. HOFFMANN, BRADLEY B. BAYAT, and AMEE A. SHAH, *Administrative Patent Judges*.

SHAH, *Administrative Patent Judge*.

DECISION ON APPEAL[1]

The Appellants[2] appeal under 35 U.S.C. § 134(a) from the Examiner's final decision rejecting claims 1–7, 11–17, and 19 under 35 U.S.C. § 101 as directed to § 101 as directed to non-statutory subject matter.[3] We have jurisdiction under 35 U.S.C. § 6(b). We AFFIRM.

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[1] Throughout this decision, we refer to the Appellants' Appeal Brief ("Appeal Br.," filed Dec. 14, 2015), Reply Brief ("Reply Br.," filed June 21, 2016), and Specification ("Spec.," filed Oct. 9, 2007), and to the Examiner's Answer ("Ans.," mailed Apr. 21, 2016) and Final Office Action ("Final Act.," mailed Apr. 14, 2015).

[2] According to the Appellants, the real party in interest is "Microsoft Techonology [sic] Licensing, LLC." Appeal Br. 1.

[3] The Appellants requested an oral hearing, but waived appearance at the hearing that was scheduled for July 3, 2018. *See* Waiver (May 15, 2018).

STATEMENT OF THE CASE

The Appellants' invention relates to "[a] process for determining relative player skills and draw margins." Spec. ¶ 5.

Claims 1, 12, and 19 are the independent claims on appeal. Claim 1 (Appeal Br. 23 (Claims App.)) is illustrative of the subject matter on appeal, and is reproduced below:

> 1. A computer-implemented method comprising:
>
> receiving, for each of a plurality of players, a time series of skill statistics associated with a distribution representing a belief about a skill of that player, wherein the time series separates a period of time into time intervals and the time series includes an ordered sequence of mean and standard deviation value pairs representing the skill belief for that payer for the respective time intervals;
>
> for each time interval within the time series for each player, receiving, via a server, information about a plurality of game outcomes;
>
> within each time interval for each player, updating the skill statistics based at least in part on the information about the plurality of game outcomes within the given time interval;
>
> within each time interval for each player, updating the statistics based at least in part on skill statistics in a forward time interval and a backward time interval; and
>
> receiving a request from a game environment and, in response to the request, matching two or more of the plurality of players, the matching being based at least in part on the skill statistics associated with the players.

ANALYSIS

Under 35 U.S.C. § 101, a patent may be obtained for "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." The Supreme Court has "long held that this provision contains an important implicit exception: Laws of nature, natural phenomena, and abstract ideas are not patentable." *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2354 (2014) (quoting *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 588–89 (2013)).

The Supreme Court in *Alice* reiterated the two-step framework, set forth previously in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66, 78–79 (2012), "for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts." *Alice*, 134 S. Ct. at 2355. The first step in that analysis is to "determine whether the claims at issue are *directed to* one of those patent-ineligible concepts." *Id.* (citing *Mayo*, 566 U.S. at 79) (emphasis added). If so, the second step is to consider the elements of the claims "individually and 'as an ordered combination"' to determine whether the additional elements "'transform the nature of the claim' into a patent-eligible application." *Id.* (quoting *Mayo*, 566 U.S. at 78–79).

Alice/Mayo Step One

The step-one analysis requires us to consider the claims "in their entirety to ascertain whether their character as a whole is directed to excluded subject matter." *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015). The Court acknowledged in *Mayo*,

that "all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas." *Mayo*, 566 U.S. at 71. The question is whether the claim as a whole "focus[es] on a specific means or method that improves the relevant technology," or is "directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery." *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1314 (Fed. Cir. 2016). We, therefore, look to "whether the focus of the claims is on [a] specific asserted improvement in computer capabilities . . . or, instead, on a process that qualifies as an 'abstract idea' for which computers are invoked merely as a tool." *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335–36 (Fed. Cir. 2016).

Under the first step of the *Alice/Mayo* framework, the Examiner determines that the claims are directed to "determining relative player skills and draw margins" (Final Act. 2), a method of organizing human activity, and an idea of itself (*id.* at 3). The Appellants similarly contend that the claims are directed to "determining a player skill level using a specific process and matching players based upon that skill level" (Appeal Br. 14, 15, 16), but argue that this is not an abstract idea (*see id.* at 13–21).

Claim 1 provides for a "computer-implemented method comprising" the steps of receiving data of a time series of skill statistics, receiving via a server data/information of a plurality of game outcomes, updating the skill statistics data based on the game outcomes data and the skill statistics data in forward and backward time intervals, receiving data of a request, and matching players based in part on the skill statistics of the players. *See* Appeal Br. 23. Claim 12 provides for a memory to configure a computer to execute the functions of receiving date of timer series of game outcomes and

skill belief statistics, updating the data of statistics, and matching players based on the updated skill statistics data. *See id.* at 25. Claim 19 provides for a memory to configure a computer to perform the functions of setting a time series, receiving data of skill statistics, updating the skill statistics based on game outcome data, and matching players based on the updated skill statistics data. *See id.* at 26–27. The players "can be human players or computer programs." Spec. ¶ 1. Time series and game outcome data are set and received by "access[ing]" the data. *Id.* ¶¶ 47, 48 (cited in Appeal Br. 4, 5, 6). The apparatus for providing skill belief statistics has two inputs, a memory, a processor, and an output (*id.* ¶ 53), and can be stored in a "data store" (*id.* ¶ 99). The updating comprises determining and weighting probabilities and averaging. *See id.* ¶ 15 (cited in Appeal Br. 5). The matching uses "Bayesian statistical techniques have previously been used to determine indications of player relative skill," as described in patent US 7,050,868, issued May 23, 2006. *See id.* ¶ 9 (cited in Appeal Br. 5). The method is implemented by "any form of a computing and/or electronic device, and in which embodiments of a system for estimating skills and/or draw margins of players may be implemented." *Id.* ¶ 96. The computing device comprises inputs for receiving content and information (*id.* ¶ 97), processor(s) (*id.* ¶ 98), and an output (*id.* ¶ 100), and is "any device with processing capability such that it can execute instructions" that includes "PCs, servers, mobile telephones, personal digital assistants and many other devices (*id.* ¶ 101).

As such, we find supported the Examiner's determination that the claims are directed to determining relative player skills and draw margins. However, even if we accept the Appellants' characterization of the claims,

determining a player skill level using a specific process of receiving and updating data and matching players based upon that determined skill level is akin to ideas deemed abstract by our reviewing courts.[4] *See Electric Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1354 (Fed. Cir. 2016) (a process of gathering and analyzing information of a specified content and displaying the result); *Planet Bingo, LLC v. VKGS LLC*, 576 F. App'x 1005, 1007–08 (Fed. Cir. 2014) (process of managing the game of bingo by "selecting, storing, and retrieving two sets of numbers, assigning a player identifier and a control number, and then comparing a winning set of bingo numbers with a selected set of bingo numbers" that not only could be "'carried out in existing computers long in use,' but they also [could] be 'done mentally'" (quoting *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). Here, the claims involve nothing more than receiving and updating data and matching/determining data based on the received and updated data without any particular inventive technology — an abstract idea. *See Electric Power*, 830 F.3d at 1354.

As such, we find unpersuasive the Appellants' arguments that the claim are not directed to an abstract idea because they are not directed to any method of organizing human activities provided in the "July 2015 Update"[5] (Appeal Br. 13–17), a mathematical formula (*id.* at 17–19), or an idea of itself (*id.* at 19–20), as defined in the July 2015 Update. *See also* Reply

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[4] *See Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1240–41 (Fed. Cir. 2016) ("An abstract idea can generally be described at different levels of abstraction.").

[5] July 2015 Update: Subject Matter Eligibility, available at https://www.uspto.gov/sites/default/files/ documents/ieg-july-2015-app 1.pdf (hereinafter "July 2015 Update").

Br. 4–5, 7–10. We note that abstract ideas are not restricted to the non-limiting examples provided in the July 2015 Update.

The Appellants' reliance on Example 26 of Appendix I of the July 2015 Update (*id.* at 17–19) is misplaced. In that hypothetical example, the claims described "an internal combustion engine having manifolds, valves, and sensors forming a specific structure that uses the control system to optimize exhaust gas recirculation." July 2015 Update 20. Here, there is no such recited structure that is altered by or uses the updated data.

That "[p]racticing this method results in real world consequences; not merely a thought" (Appeal Br. 20) and that the claims recite "real word devices and operating them results in real world consequences; not merely a thought" (*id.*) do not change that the claims are directed to an abstract idea. The mere recitation of a practical application for an abstract idea is insufficient to transform the abstract idea into a patent-eligible invention. *Cf. CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1371 (Fed. Cir. 2011) ("The Court [in *Parker v. Flook*, 437 U.S. 584 (1978)] rejected the notion that the recitation of a practical application for the calculation could alone make the invention patentable.").

Thus, we are not persuaded of error in the Examiner's determination that the claims are directed to an abstract idea.

Alice/Mayo Step Two

The second step is to "search for an 'inventive concept'—*i.e.*, 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*, 134 S. Ct. at 2355 (alteration in original) (quoting *Mayo*, 566 U.S. at 72–73).

Under the second step of the *Mayo/Alice* framework, we agree with and find supported the Examiner's determination that the elements of independent claims 1, 12, and 19, and their dependent claims, individually or as an ordered combination, do not amount to significantly more than the abstract idea. *See* Final Act. 3; Ans. 5. We not persuaded by the Appellants' arguments to the contrary. *See* Appeal Br. 9–13.

We disagree that the claims recite a method or machine using or having "a physical sensor used to detect and measure a real-world condition (e.g., player skill) of a real-world subject (players)." Appeal Br. 9, 10, 12; *see also* Reply Br. 3–4. The claims do not recite detecting or measuring information, much less using or having any such sensor. And, the Examiner properly considered the claims at issue in light of the Specification. *See Alice*, 134 S. Ct. at 2355. Further, nowhere does the Specification discuss or make mention of detecting or measuring information using a physical sensor. The Specification discusses a first input that is an interface to a database or memory storing time series of skill belief information (Spec. ¶ 53), a second input for receiving outcome information (*id.*), "access[ing]" time series of skill belief statistics (*id.* ¶ 47), and "computing-based device 2100" for implementing the method comprising "any form of a computing and/or electronic device" (*id.* ¶ 96) comprising inputs, processors, and an output (*id.* at ¶¶ 97–100), i.e., a general purpose computer. There is no further description or mention of the inputs comprising sensors. Morevoer, the Appellants envisioned that players can be computer programs (*id.* ¶ 1); it is not known or discussed how sensors would measure and detect real-world conditions in a computer program player.

The Appellants' reliance on Example 25 of Appendix I of the July 2015 Update (*id.* at 9–12; *see also* Reply Br. 4–5) is misplaced. That hypothetical example is based on *Diamond v. Diehr*, 450 U.S. 175 (1981), which involved the use of mathematical equations in operation of a rubber molding press to cure raw rubber into a product that retains its shape. In *Diamond*, the claimed invention improved the operation of a rubber molding press by taking measurements, and feeding those measurements into a digital computer that repeatedly recalculates the cure time based on the Arrhenius equation, resulting in a transformation of raw rubber to a molded, rubber product. *Diamond*, 450 U.S. at 177–179, 184. The Appellants contend that the claims here similarly "tak[e] an action to match players based on the calculations." Appeal Br. 10, 11, 12. However, merely taking a manual, mental, or computer-implemented action is not transforming the data from one form to another, such as a molded product, and is not patent eligible, as the Supreme Court made clear in *Gottschalk*, 409 U.S. at 71–72. In contrast to the situation in *Diamond*, applying the Appellants' claimed steps (e.g., receiving and updating data, and matching players/data based on the data) does not result in any analogous transformation of matter from one state (i.e., raw rubber) to another (i.e., a molded product). We determine the Appellants' claims to be more analogous, instead, to the process claim deemed patent-ineligible in *Gottschalk*.

We are not persuaded by the Appellants' argument (Reply Br. 5–6) that the Examiner's comparison of the present claims to those at issue in *Parker v. Flook* (Ans. 4–5) is inapposite. The claims' updating and matching by weighting probabilities, averaging data, and using Bayesian statistical techniques (*see* Spec. ¶¶ 9, 15) are not dissimilar to *Parker*'s use

of a mathematical algorithm based on weighting and averaging data to adjust a setting at least because both use mathematical algorithms/calculations to perform some conventional post-solution activity. *See Parker*, 437 U.S. at 591–94.

In response to the Appellants' argument that the claims "do[] not preempt all methods of determining player skills and making matches, nor do[] [they] preempt all uses of the specific process claimed for determining player skills" (Appeal Br. 10, 11, 13), we note that although the Supreme Court has described "the concern that drives this exclusionary principle [i.e., the exclusion of abstract ideas from patent eligible subject matter] as one of preemption" (*see Alice*, 134 S. Ct. at 2354), characterizing preemption as a driving concern for patent eligibility is not the same as characterizing preemption as the sole test for patent eligibility. "The Supreme Court has made clear that the principle of preemption is the basis for the judicial exceptions to patentability" and "[f]or this reason, questions on preemption are inherent in and resolved by the § 101 analysis." *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015) (citing *Alice*, 134 S. Ct. at 2354). Although "preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility." *Id.*

For these reasons, the Examiner did not err in determining that the claims fail to recite significantly more than the abstract idea.

Additional Arguments

In the Reply Brief, the Appellants, citing to the guidance issued May 2016 in the form of a Memo,[6] newly argue that the Examiner (1) "only provides an explanation of the rejection of independent Claim 1 and notes that the explanation applies equally to independent Claims 12 and 19. No explanation has been provided, either in an Office Action or in the Answer regarding the rejection of any dependent claims" (Reply Br. 2), (2) in "the Answer repeatedly relies on broad, sweeping statements regarding eligibility without identifying the idea as recited in the claim[s]" (*id.*), (3) "fail[s] to point to any court decisions, and those that do simply rely on the exceedingly brief summaries" (*id.*), (4) does not provide a "claim-to-claim comparison" to claims deemed abstract in previous court decisions (*id.* at 3), and (5) improperly describes the claims "at a high level of generality" (*id.* at 7). The May Memo did not alter the requirements for the Examiner, but provided additional guidance on how the Examiner **should** formulate a rejection under § 101. May Memo 1. We note that these arguments regarding the Examiner's alleged lack of explanation, "broad, sweeping statements," failure to cite court decisions, failure to state a claim to claim comparison, and improper description of the claims were not raised in the Appeal Brief, are not responsive to an argument in the Examiner's Answer,

[6] USPTO Memorandum "Formulating a Subject Matter Eligibility Rejection and Evaluating the Applicant's Response to a Subject Matter Eligibility Rejection, dated May 4, 2016, issued after the Examiner's Answer) (hereafter "May Memo"), available at https://www.uspto.gov/sites/default/files/documents/ieg-may-2016-memo.pdf.

and good cause has not been shown for making these new arguments. *See* 37 C.F.R. § 41.41(b)(2). Thus, we do not consider these arguments.

However, we do note that there is no specific requirement that each claim be examined individually by the Examiner in determining that the claims are directed to an abstract idea. *See Alice*, 134 S. Ct. at 2355–57 (addressing the claims together). Nor is there a specific requirement that the comparisons to prior court decisions must consist of a certain minimum number of sentences. *See Amdocs (Israel) Ltd. V. Openet Telecom, Inc.*, 841 F.3d 1288, 1294 (Fed. Cir. 2016) (explaining that there is not a single test for what an abstract idea encompasses, and courts instead "examine earlier cases in which a similar or parallel descriptive nature can be seen-what prior cases were about, and which way they were decided").

We also note that the Examiner includes the dependent claims in the heading of the rejection (Final Act. 2) and the analysis (*id.* at 2–3). There is no indication that the Appellants were not put on notice of the Examiner's rejection regarding the dependent claims, or that the rejection otherwise failed to satisfy the requirements of 35 U.S.C. § 132. And, the Appellants do not provide separate arguments for the dependent claims.

Further, we note that in rejecting the pending claims under § 101, the Examiner analyzes the claims using the *Mayo/Alice* two-step framework. Specifically, the Examiner looks to the language of the claims, determines that the claims are directed to the abstract idea as indicated above, and cites to and compares the claims to those deemed abstract in prior court decisions. *See* Final Act. 2; Ans. 10, 12–13. The Examiner further determines that the additional elements of the claims, taken alone and as an ordered combination, do not ensure that the claims amount to significantly more than

the abstract idea, and cites to and compares the claims to those deemed to not amount to significantly more than the abstract idea. *See* Final Act. 3; Ans. 4–7. Thus, the Examiner has articulated and explained the reasons for the rejection, and has notified Appellants of the reasons for the rejection "together with such information and references as may be useful in judging of the propriety of continuing the prosecution of [the] application." 35 U.S.C. § 132.

Based on the foregoing, we are not persuaded that the Examiner erred in rejecting claims 1–7, 11–17, and 19 under 35 U.S.C. § 101, and, therefore, we sustain the rejection.

DECISION

The Examiner's rejection of claims 1–7, 11–17, and 19 under 35 U.S.C. § 101 is AFFIRMED.

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