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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DANIEL FERRANTE and ALEXANDER PAUL SCHULTZ

Appeal 2017-004129
Application 12/976,685¹
Technology Center 3600

Before ANTON W. FETTING, JOSEPH A. FISCHETTI, and
BRUCE T. WIEDER, *Administrative Patent Judges*.

FISCHETTI, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants seek our review under 35 U.S.C. § 134 of the Examiner's Non-Final Rejection of claims 1–18. We have jurisdiction under 35 U.S.C. § 6(b).

SUMMARY OF DECISION

We AFFIRM.

¹ Appellants identify Facebook, Inc., as the real party in interest. Appeal Br. 3.

THE INVENTION

Appellants claim a data visualization for time-based cohorts (Spec.

¶ 1).

Claim 1 reproduced below, is representative of the subject matter on appeal.

1. A method comprising:

by a computing device, identifying a plurality of cohort groups defined by a time-based condition comprising a particular user action with respect to a social-networking system performed during a particular time frame, wherein each of the cohort groups correspond to a particular value or range of values for the time-based condition, and wherein each of the cohort groups comprises an exclusive group of one or more users who performed the particular user action according to the particular value or range of values for the time-based condition of the cohort group;

by the computing device, for each cohort group determining a value of a time-based metric at each of a plurality of points in time; and

by the computing device, generating for display a heat map comprising a first axis and a second axis, the first axis comprising a plurality of first bins that each correspond to one of the cohort groups, the second axis comprising a plurality of second bins that each correspond to a point in time, each of a plurality of intersections of the first bins with the second bins in the heat map being graphically encoded to indicate the value of the time-based metric for the cohort group corresponding to the first bin at the point in time corresponding to the second bin.

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THE REJECTIONS

The Examiner relies upon the following as evidence of unpatentability:

Breitenstein et al. (hereinafter Breitenstein)	US 2011/0077958 A1	Mar. 31, 2011
Angell et al. (hereinafter Angell)	US 2010/0153174 A1	June 17, 2010
Wilson	US 2012/0029960 A1	Feb. 2, 2012

The following rejections are before us for review.

Claims 1–18 are rejected under 35 U.S.C. § 101.

Claims 1–18 are rejected under 35 U.S.C. § 103(a) as unpatentable over Angell, Breitenstein and Wilson.

FINDINGS OF FACT

1. We adopt the Examiner’s findings as set forth on pages 2–5 of the Answer and pages 2–6 of the Non Final Action concerning only the rejection made under 35 U.S.C. § 101.

ANALYSIS

35 U.S.C. § 101 REJECTION

We will affirm the rejection of claims 1–18 under 35 U.S.C. § 101.

The Appellants argued claims 1–18. We select claim 1 as the representative claim for this group, and the remaining independent claims stand or fall with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2015).

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, 69 (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 waterproof cloth, vulcanizing India rubber, smelting ores” (*id.* at 184 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 192 (“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 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.”).

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 (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 PTO recently published revised guidance on the application of § 101. USPTO’s January 7, 2019 Memorandum is entitled *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50, 54 (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, i.e., that “apply, rely on, or use the judicial exception

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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.” 2019 Guidance at 54; *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 Guidance.

The Federal Circuit has explained that “the ‘directed to’ inquiry applies a stage-one filter to claims, considered in light of the [S]pecification, 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.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015)). It asks whether the focus of the claims is on a specific improvement in relevant technology or on a process that itself qualifies as an “abstract idea” for which computers are invoked merely as a tool. *See id.* at 1335–36.

In so doing, as indicated above, we apply a “directed to” two prong

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test to: 1) evaluate whether the claim recites a judicial exception, and 2) if the claim recites a judicial exception, evaluate whether the claim “appl[ies], rel[ies] on, or use[s] 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 Guidance at 54.

The Examiner found, “[c]laims 1-18 are directed to an abstract idea of ‘an idea of itself’ involving market modeling.” Non-Final Act. 5. We agree with the Examiner in that market modeling or “business intelligence” (Spec. ¶ 3) is a form of mathematical concept involving mathematical relationships. That is, the claims are directed mathematical relationship between a time based metric and a plurality of points in time using first and second axes, wherein the first axis comprises a plurality of first bins that each correspond to a cohort group, and the second axis comprises a plurality of second bins that each correspond to a point in time. Thus, we find no error in the Examiner’s determination that the claims recite a judicial exception of market modeling using mathematical relationships expressed using first and second axes. (*See, e.g.,* Non-Final Act. 5.)

We further find that because the claims recite “cohort groups defined by a time-based condition comprising a particular user action with respect to a social-networking system”, it is also directed to a method of organizing human activity because displaying actions of a user in a heat map

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presentation can manage personal behavior.² The patent-ineligible end of the spectrum includes fundamental economic practices and organizing human activity. See *Alice*, 134 S. Ct. at 2355–2357.

Turning to the second prong of the “directed to” test, claim 1 merely requires a “computing device” with display capabilities. We fail to see how the recitation of this element even taken in conjunction with the recited various mental step functions so integrates the exception as to “impose a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception.” 2019 Guidance at 54.

Thus, we find that the claims recite a judicial exception of at least a mathematical concept and a method of organizing human activity.

That the claims do not preempt all forms of the abstraction or may be limited to user action with respect to a social-networking system, does not make them any less abstract. See *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1362 (Fed. Cir. 2015) (“And that 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.”).

Turning to the second step of the *Alice* analysis, because we find that the claims are directed to abstract ideas/judicial exceptions, the claims must

² That our decision adds another layer to “directed to” subject matter is cumulative in that an abstract idea can generally be described at different levels of abstraction. See *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1240 (Fed. Cir. 2016).

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include an “inventive concept” in order to be patent-eligible, i.e., there must be an element or combination of elements that are sufficient to ensure that the claim in practice amounts to significantly more than the abstract idea itself. *See Alice*, 134 S. Ct. at 2355 (quoting *Mayo Collaborative Servs.*, 566 U.S. at 72–73).

Here the Examiner found, “the claims do not provide a limitation that is significantly more than the abstract idea involving market modeling.” (Answer 4). We agree with the Examiner.

“[T]he relevant question is whether the claims here do more than simply instruct the practitioner to implement the abstract idea . . . on a generic computer.” *Alice Corp. Pty. Ltd.*, 134 S. Ct. at 2359. They do not.

Taking the claim elements separately, the function performed by the computer at each step of the process is purely conventional. Using a computer to retrieve, select, and apply decision criteria to data and modify the data as to determine a time based metric and display the results amounts to electronic data query and retrieval—one of the most basic functions of a computer. All of these computer functions are well-understood, routine, conventional activities previously known to the industry. *See Elec. Power Grp. v. Alstom S.A.*, 830 F.3d 1350 (Fed. Cir. 2016); *see also In re Katz Interactive Call Processing Patent Litigation*, 639 F.3d 1303, 1316 (Fed. Cir. 2011).

Considered as an ordered combination, the computer components of Appellants’ claims add nothing that is not already present when the steps are

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considered separately. The sequence of data reception-analysis-access—display is equally generic and conventional or otherwise held to be abstract. *See Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715 (Fed. Cir. 2014) (sequence of receiving, selecting, offering for exchange, display, allowing access, and receiving payment recited an abstraction), *Inventor Holdings, LLC v. Bed Bath & Beyond, Inc.*, 876 F.3d 1372, 1378 (Fed. Cir. 2017) (sequence of data retrieval, analysis, modification, generation, display, and transmission), *Two-Way Media Ltd. v. Comcast Cable Communications, LLC*, 874 F.3d 1329, 1339 (Fed. Cir. 2017) (sequence of processing, routing, controlling, and monitoring). The ordering of the steps is therefore ordinary and conventional.

Viewed as a whole, Appellants’ claims simply recite the concept of market modeling/business intelligence using mathematical relationships. The claims do not, for example, purport to improve the functioning of the computer itself. Nor do they effect an improvement in any other technology or technical field. Instead, the claims at issue amount to nothing significantly more than instructions to create a market model. Under our precedents, that is not enough to transform an abstract idea into a patent-eligible invention. *See Alice Corp. Pty. Ltd.*, 134 S. Ct. at 2360.

The Specification spells out “well known process steps and / or structures have not been described in detail in order not to unnecessarily obscure the present disclosure.” Spec. ¶ 12. They do not describe any particular improvement in the manner a computer functions, at least with

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respect to the claims in the instant application. Instead, the claims at issue amount to nothing significantly more than an instruction to apply the abstract idea using some unspecified, generic computer. Under our precedents, that is not enough to transform an abstract idea into a patent-eligible invention. *See Alice Corp. Pty. Ltd.* at 2360.

We have reviewed all the arguments (Appeal Br. 5–12) Appellants have submitted concerning the patent eligibility of the claims before us which stand rejected under 35 U.S.C. § 101. We find that our analysis above substantially covers the substance of all the arguments which have been made. But, for purposes of completeness, we will address various arguments in order to make individual rebuttals of same.

Appellants argue,

Here, as in *DDR Holdings*, the present application does not ‘broadly and generically claim use of the Internet to perform an abstract [idea].’ *Id.* at 1258. Instead, independent Claims 1, 7, and 13 are directed to identifying cohort groups defined by a time-based condition, determining a value of a time-based metric at each of a plurality of points in time for each cohort group, and generating a heat map based on the cohort groups and the time-based metric values.

(Appeal Br. 7).

We disagree with Appellants. We fail to see the similarities asserted by Appellants (Appeal Br. 7–8) between the claims on appeal here and those adjudicated in *DDR Holdings, LLC v. Hotels.com, L.P.* 773 F.3d 1245

(Fed. Cir. 2014). In *DDR Holdings*, the Court evaluated the eligibility of claims “address[ing] the problem of retaining website visitors that, if adhering to the routine, conventional functioning of Internet hyperlink protocol, would be instantly transported away from a host’s website after ‘clicking’ on an advertisement and activating a hyperlink.” *Id.* at 1257. There, the Court found that the claims were patent eligible because they transformed the manner in which a hyperlink typically functions to resolve a problem that had no “pre-Internet analog.” *Id.* at 1258. In contrast claim 1 at best only requires a computer, let alone hyperlink technology, and does not even require the display which the claim only inferentially recites as, “by the computing device, generating for display.”

We also disagree with Appellants that under the holding in *Enfish* our decision would be different (Appeal Br. 8).³ By contrast, we are unpersuaded by the Appellants’ argument that its claims are directed to an improvement in computer technology like that of claim 17 in *Enfish* and therefore are patent eligible. In *Enfish*, the invention at issue was directed at a wholly new type of logical model for a computer database: a self-referential table that allowed the computer to store many different types of data in a single table and index that data by column and row information. *Enfish*, 822 F.3d at 1330–32. In finding the claims “not directed to an abstract idea,” but “to a specific improvement to the way computers operate,” the Federal Circuit noted that “the claims are not simply directed to

³ *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016).

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any form of storing tabular data, but instead are specifically directed to a *self-referential* table for a computer database.” *Enfish*, 822 F.3d at 1336–37. We find nothing in the claims before us arising to this level of technical improvement in the claimed computing device with display capabilities as found in *Enfish*. Instead, we find the claims are focused on “economic or other tasks for which a computer is used in its ordinary capacity.” *Enfish*, 822 F.3d at 1336.

Appellants next argue, reading the Claims and Specification of the present Application, one of skill in the art would understand the invention to provide at least improvements to another technology or technical field or improvements to the functioning of the computer itself. (Appeal Br. 11).

We disagree with Appellants that there is any improvement to a technology or technical field as set forth in the claims. The question is whether the claims as a whole “focus on a specific means or method that improves the relevant technology” or are “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). In this case, claim 1 as a whole is focused on satisfying certain contingencies for a displaying a heat map of “users who performed [a] particular user action according to the particular value or range of values for the time-based condition.”

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Appellants list various claim limitations and references to the Specification featuring heat map characteristics to show improvements to a technical field. (Appeal Br. 10–11).

We disagree with Appellants that a heat map constitutes any such improvement without Appellants providing evidence that they are improvements in the computer as contrasted with organizing human activity tactics. Although generating a graphical display using a computer would be in some sense technological were implementation details recited, its use has become so notoriously settled that merely invoking it as a generic function is no more than abstract conceptual advice to use well known technology for its intended purpose. *See In re TLI Communications LLC Patent Litigation*, 823 F.3d 607, 612–613 (Fed. Cir. 2016). (Using a generic telephone for its intended purpose was a well-established “basic concept” sufficient to fall under *Alice* step 1.)

35 U.S.C. § 103(a) REJECTION

The Appellants selected independent claim 1 as the representative claim for the group of independent claims 1, 7, and 13 (Appeal Br. 13), and the remaining independent claims standing or falling with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2015).

Appellants argue that the relied-upon prior art fails to teach that

each of the cohort groups comprises an exclusive group of one or more users who performed the particular user action according to the particular value or range of values for the time-based condition of the cohort group, as independent

Claim 1 further recites. The Examiner asserts that Wilson Provisional discloses these limitations. Wilson Provisional is generally directed at “analyzing data for the optimal allocation of resources over time.” Wilson Provisional, para. 0001. Specifically, Wilson Provisional discloses transforming “economic and eligibility information produced over calendar/clock time (CCT) per a unique unit of analysis (e.g., UOAID) that meets the criteria for inclusion into a specific Population (Type or Grouper) into information organized by Cohort Time . . .” *Id.* para. 0063. Although the concept “Cohort Time” in Wilson Provisional is related to the concept of cohort groups defined by a time-based condition, as Claim 1 recites, Wilson Provisional nonetheless fails to disclose that the time-based condition comprising a particular user action with respect to a social-networking system.[]

(Appeal Br. 13–14) (emphasis omitted).

That argument is not well taken because the Appellants are attacking the reference individually when the rejection is based on a combination of references. *See In re Keller*, 642 F.2d 413, 426 (CCPA 1981); *In re Young*, 403 F.2d 754, 757-58 (CCPA 1968). The Examiner found that Angell and not Wilson discloses determining a time-based condition based on an action, i.e., spending actions versus seasons of the year, (“*a value of a time-based metric at each of a plurality of points in time* (§0061 cohort group retail patterns determine spending habit values of a time-based calendar metric at each plurality of points in time corresponding with seasons of the year[]).”

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Non-Final Act. 7. Whether the concerned action is purchasing in a retail establishment (Angell ¶ 62), or On-Line (social-networking system) is not seen as a patentable distinction because the claimed action is only used in the claims to define a cohort. Thus, the recitation of “user action with respect to a social-networking system” is considered non-functional descriptive material. *See In re Xiao*, 462 Fed. Appx. 947, 950 (Fed. Cir. 2011). Non-functional descriptive material, being useful and intelligible only to the human mind, is given no patentable weight. *See also In re Ngai*, 367 F.3d 1336, 1339 (Fed. Cir. 2004). “The rationale behind this line of cases is preventing the indefinite patenting of known products by the simple inclusion of novel, yet functionally unrelated limitations.” *King Pharms., Inc. v. Eon Labs, Inc.*, 616 F.3d 1267, 1279 (Fed Cir 2010).

We also affirm the rejections of dependent claims 2–6, 8–12, and 14–18 which depend from claims 1, 7, and 13 respectively, because Appellants have not challenged such with any reasonable specificity (*see In re Nielson*, 816 F.2d 1567, 1572 (Fed. Cir. 1987)).

CONCLUSIONS OF LAW

We conclude the Examiner did not err in rejecting claims 1–18 under 35 U.S.C. § 101.

We conclude the Examiner did not err in rejecting claims 1–18 under 35 U.S.C. § 103(a).

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DECISION

The decision of the Examiner to reject claims 1–18 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). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED