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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MATTHEW R. SHANAHAN, JENNIFER L. HINDS, and MECHTHILD R. KELLAS-DICKS

Appeal 2016-002384
Application 13/083,492
Technology Center 0000

Before CARLA M. KRIVAK, JON M. JURGOVAN, and AMBER L. HAGY, *Administrative Patent Judges*.

JURGOVAN, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from a rejection of claims 1 and 7–12. Claims 2–6 and 13–22 are canceled. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.[1]

CLAIMED INVENTION

The claims are directed to adjusting pricing of a digital service to determine revenue optimization opportunities for a service provider. Spec. Title, Abstract. Claim 1, reproduced below, is illustrative of the claimed subject matter:

> 1. A method for adjusting pricing of a digital service comprising:
>
> computing a revenue measure and an engagement measure over a common period of time for each customer of a plurality of customers, said engagement measure for each customer being proportional to a temporal duration of service access by the customer divided by a temporal duration of the common period of time;
>
> computing a revenue/engagement quotient for each customer of the plurality of customers by dividing the revenue measure for the customer by the engagement measure for the customer;
>
> separating the plurality of customers into three groups, wherein each member of a first group has a higher

[1] Our Decision refers to the Specification ("Spec.") filed April 8, 2011, the Non-Final Office Action ("2014 Non-Final Act.") mailed January 29, 2014, the Non-Final Office Action ("2015 Non-Final Act.") mailed January 13, 2015, the Appeal Brief ("App. Br.") filed July 10, 2015, the Examiner's Answer ("Ans.") mailed October 21, 2015, and the Reply Brief ("Reply Br.") filed December 21, 2015.

> revenue/engagement quotient than all members of a second group and all members of a third group, and each member of the third group has a lower revenue/engagement quotient than all members of the first group and all members of the second group; and
>
> adjusting a price charged to a member of the first group or the third group to cause the member's revenue/engagement quotient to fall in the second group, wherein
>
> the computing, separating and adjusting operations are performed by a computer processor.

App. Br. 12 – Claims App'x.

REJECTION

Claims 1 and 7–12 were rejected under 35 U.S.C. § 101 as directed to patent-ineligible subject matter. 2015 Non-Final Act. 2; 2014 Non-Final Act. 2–4.

ANALYSIS

Patent eligibility is a question of law that is reviewable *de novo*. *Dealertrack, Inc. v. Huber*, 674 F.3d 1315, 1333 (Fed. Cir. 2012).

Patentable subject matter is defined by 35 U.S.C. § 101 as follows:

> [w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

In interpreting this statute, the Supreme Court emphasizes that patent protection should not preempt "the basic tools of scientific and technological work." *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 71 (2012); *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2354 (2014). The rationale is that

patents directed to basic building blocks of technology would not "promote the progress of science" under the U.S. Constitution, Article I, Section 8, Clause 8, but instead would impede it. Accordingly, laws of nature, natural phenomena, and abstract ideas are not patent-eligible subject matter. *Thales Visionix Inc. v. U.S.*, 850 F.3d 1343, 1346 (Fed. Cir. 2017) (citing *Alice*, 134 S. Ct. at 2354).

The Supreme Court set forth a two-part test for subject matter eligibility in *Alice*. 134 S. Ct. at 2355. The first step is to determine whether the claim is directed to a patent-ineligible concept. *Id.* (citing *Mayo*, 566 U.S. at 76–77). If so, then the eligibility analysis proceeds to the second step of the *Alice*/*Mayo* test, in which we "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*, 134 S. Ct. at 2357 (quoting *Mayo*, 566 U.S. at 72, 79). The "inventive concept" may be embodied in one or more of the individual claim limitations or in the ordered combination of the limitations. *Alice*, 134 S. Ct. at 2355. The "inventive concept" must be significantly more than the abstract idea itself, and cannot be simply an instruction to implement or apply the abstract idea on a computer. *Alice*, 134 S. Ct. at 2358. "'[W]ell-understood, routine, [and] conventional activit[ies]' previously known to the industry" are insufficient to transform an abstract idea into patent-eligible subject matter. *Alice*, 134 S. Ct. at 2359 (citing *Mayo*, 566 U.S. at 73).

The Examiner finds the claims are directed to the abstract idea of computing, separating, and adjusting numerical data (claim 1), as well as producing a scatter plot of computed numerical data (claims 7–12). 2014 Non-Final Act. 3; Ans. 4. The Examiner finds this abstract idea falls under

the particular categories of fundamental economic practices, certain methods of organizing human activity, and mathematical relationships/formulas. Ans. 6. The Examiner further finds the features that Appellants rely on to establish the claim is "significantly more" than the judicial exception are actually details about the abstract idea rather than adding "something more" to the abstract idea. Ans. 7–8.

Step One of the Alice/Mayo Test

Appellants argue the Examiner's characterization of the abstract idea is not coextensive with the claim. App. Br. 7. The Examiner responds that the claim is directed to a judicial exception when a law of nature, natural phenomenon, or an abstract idea is recited (i.e., set forth or described) in the claim. Ans. 3 citing *2014 Interim Guidance on Patent Subject Matter Eligibility*, 79 Fed. Reg. 74618, 74622 (Dec. 16, 2014). We agree with the Examiner. We are aware of no requirement in the law that holds the abstract idea must be coextensive with the claimed invention in step one of the *Alice/Ma*yo test. The requirement is merely to indicate whether the claim is directed to a judicial exception such as an abstract idea, which the Examiner has done. If Appellants' argument were correct, there would be no need to determine whether the claim recites "significantly more" in the second step of the *Alice*/*Mayo* test. We do not interpret the decisions of our reviewing courts in this way, and we are not persuaded of error in the Examiner's determinations.

Appellants argue the Examiner did not name the abstract idea so it cannot be determined whether the abstract idea falls within the categories of fundamental economic practices, certain methods of organizing human activities, or mathematical relationships/formulas, as set forth in the *2014*

Interim Guidance. App. Br. 8. However, as stated, the Examiner finds that the claims are directed to the abstract ideas of computing, separating, and adjusting numerical data (claim 1), as well as producing a scatter plot of computed numerical data (claims 7–12). Although the numerical data recited pertains to a particular kind of data—that is, revenue measure and engagement measure used to compute a revenue/engagement quotient for separating customers into groups and adjusting the price charged to certain of the groups—the Examiner is nevertheless correct that the claims, at their core, are directed to the abstract ideas of computing, separating, and adjusting numerical data (claim 1), and producing a scatter plot of computed numerical data (claims 7–12). Thus, we are not persuaded of error in the Examiner's determination.

We are also guided by our reviewing court, which has recognized similar claims to be patent-ineligible. For example, this case has substantial similarities with *Versata Development Group, Inc. v. SAP America, Inc.*, 793 F.3d 1306 (Fed. Cir. 2015), which held claims that were directed to the abstract idea of determining a price using organizational and product group hierarchies were ineligible under § 101. Similarly, *OIP Technologies, Inc. v. Amazon.com, Inc.*, 788 F.3d 1359 (Fed. Cir. 2015), recognized offer-based price-optimization to be a patent-ineligible abstract idea. The claims presented on appeal in this case also embody "fundamental economic concepts"—namely, determining price adjustments based on revenue and engagement measures; thus, they are similar to the claims directed to price-setting that were held to be abstract by our reviewing court. *E.g., id.* at 1362–63.

We also note that, although the claims at issue here are performed by a computer, the steps or functions recited in the claims can also be carried out mentally with pencil and paper, without the aid of a computer. Under such circumstances, our reviewing court has found such claims to be directed to abstract ideas. *Gottschalk v. Benson*, 409 U.S. 63 (1972); *Cybersource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366 (Fed. Cir. 2011).

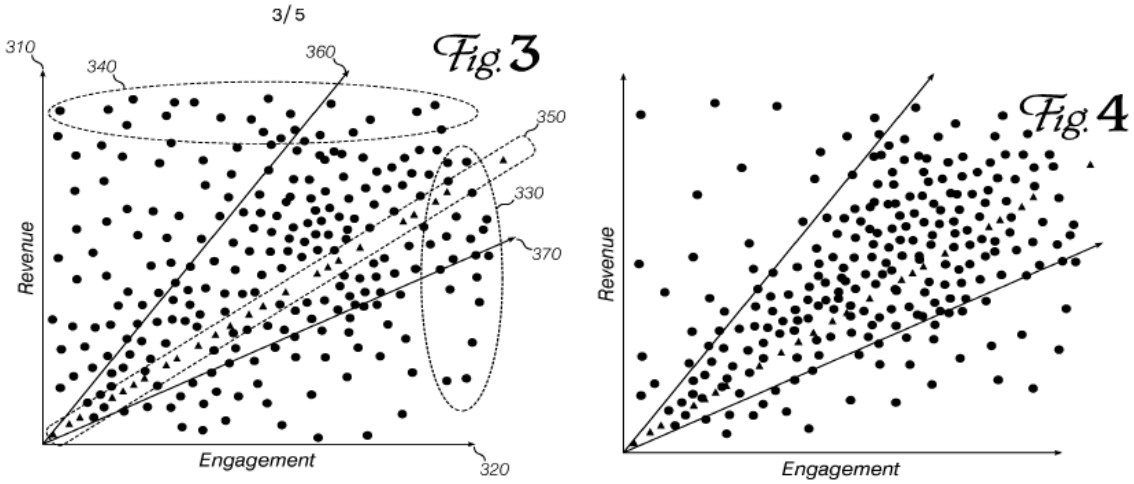
The purpose or result of the claims is to adjust prices charged to customers, causing them to fall into a particular group on a revenue versus engagement plot, for achieving a business objective. This does not amount to a technical solution to a technical problem. Under similar circumstances as presented here, our reviewing court has held that such claims are directed to an abstract idea. *In re TLI Communications LLC Patent Litigation*, 823 F.3d 607, 613 (citing *Diamond v. Diehr*, 450 U.S. 175 (1981)); *Affinity Labs of Texas, LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1265 (Fed. Cir. 2016).

Accordingly, we agree with the Examiner the claims are directed to the abstract idea of computing, separating, and adjusting numerical data (claim 1), as well as producing a scatter plot of computed numerical data (claims 7–12).

Step Two of the Alice/Mayo Test

Appellants argue the "something more" that transforms the abstract idea recited in claim 1 into patent-eligible subject matter is selection of revenue measures and engagement measures, use of division to compute a revenue/engagement quotient, separating customers into three groups, and adjusting prices charged to first or third group to cause the member's revenue/engagement quotient to fall in the second group. App. Br. 9. Certainly, revenue measures, engagement measures, use of mathematical

division, separating customers into groups, and adjusting prices to achieve business objectives, are "well-understood, routine and conventional" activities per *Alice*. We assume, for purposes of our analysis, that the particular revenue/engagement quotient and adjusting prices to cause customers to move from the first or third group into the second group, as shown below in Figures 3 and 4 of the Specification, may be features that are not known in the industry.



Figures 3 and 4 of the Specification show scatter plots of revenue versus engagement for customers to a digital service. Lines 360 and 370 divide Figure 3 into three groups. Price adjustments cause customers to move from first and third groups to second group in Figure 4 in order to optimize profit.

Appellants do not argue the functioning of the computer is improved by implementing the abstract idea of computing revenue measures, engagement measures, and revenue/engagement quotients, separating customers into groups on a revenue versus engagement graph, and adjusting prices for the customers in certain groups to cause them to move to another group on the graph. Appellants likewise do not argue that the ability to use a revenue/engagement quotient to adjust prices to move customers to a certain group on a revenue versus engagement graph is improved by

implementation on a computer beyond those capabilities that computers are well-known to provide, such as computational speed. Under similar circumstances, our reviewing court has held that the computer is merely a tool or environment in which the abstract idea being carried out. *See TLI* at 614 (stating that "the telephone unit simply provides the environment in which the abstract idea of classifying and storing digital images in an organized manner is carried out."). Here, Appellants do not persuade us that the recited computer components do anything more than carry out the abstract idea of computing, separating, and adjusting of numerical data. Accordingly, we are not persuaded the claim recites "something more" that transforms the claim into patent-eligible subject matter.

Moreover, we note that the potential preemption that could be caused by claim 1 is not insignificant. Adjusting prices to affect customer behavior is a fundamental aspect of a market economy. Although the claim is limited to computing a revenue/engagement quotient and using it to adjust prices to move customers from one group to another in a revenue versus engagement graph, adjusting prices based on revenue and engagement to affect consumer behavior are certainly well-known to the industry, and the corresponding data would reflect similar information when graphed. In any case, "the absence of complete preemption does not demonstrate patent eligibility." *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015).

Appellants argue claim 7 on the same basis as claim 1, but add that claim 7 also has "something more" that goes beyond the abstract idea of producing a scatter plot of computed numerical data. App. Br. 10. Specifically, Appellants argue claim 7 recites that the claimed scatter plot is

of two specific values reflecting real-world customer activity, and the scatterplot is augmented by superimposing two curves, separating its area into three-sub-areas corresponding to specific groupings of customers. *Id.* Appellants argue claim 7 does not preempt the use of graphs or scatter plots. *Id.*

Nonetheless, the preemption posed by claim 7 is not insignificant. Producing a scatter plot of revenue and engagement measures for customers is well-known to the industry. Also, in the claim, the two curves superimposed are virtually unlimited in what they may be (as long as they produce customer groupings with the recited differences in revenue/engagement quotients). There are only so many ways to express the relationship between revenue and engagement, and a quotient is one of them. Thus, although the claim does not completely preempt the abstract idea, it does represent significant preemption, per *Ariosa*.

In the Reply Brief, Appellants argue the Examiner's alleged element-by-element analysis fails to consider the claim as a whole in determining the claims are directed to abstract ideas. Reply Br. 1. Appellants also argue the Examiner errs in determining the abstract ideas are exactly coextensive with the claim, that the abstract idea is a list of the general steps of the method, and that the Examiner fails to provide a single, succinct abstract idea. *Id.* at 1–2. However, Appellants do not cite to where in the record the Examiner made these alleged errors. As explained, the Examiner clearly sets forth the abstract idea embodied in claims 1 and 7, and we see no error in the Examiner's determinations.

No separate arguments are presented for the dependent claims 8–12, which fall with independent claim 7. 37 C.F.R. § 41.37(c)(1)(iv).

DECISION

We affirm the Examiner's decision rejecting claims 1 and 7–12 under 35 U.S.C. § 101.

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