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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte THOMAS W. DENSLOW III, HAINING YU, HAI CHU, and
CAMERON DAVIES

Appeal 2018-006035
Application 13/956,172
Technology Center 3600

Before CAROLYN D. THOMAS, ERIC B. CHEN, and
HUNG H. BUI, *Administrative Patent Judges*.

THOMAS, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1–6, 9–14, 17–22, and 25–30. We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

We AFFIRM.

The present invention relates generally to generating sales proposals by determining a level of preference for each of a plurality of items. *See* Abstr.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Disney Enterprises, Inc. Appeal Br. 3.

Independent claim 1, reproduced below, is representative of the appealed claims:

1. A computer-implemented method to allocate available time segments in which to broadcast digital media, by a networked application having a plurality of modules executing on distinct compute nodes, the computer-implemented method comprising:
 - determining, by a preference module and for a target entity, a respective level of preference of reserving each of a plurality of available time segments of different content types and in which to broadcast digital media specified by the target entity, wherein each level of preference is determined based on preference data stored in a database;
 - identifying, by an optimization module, at least one template, of a plurality of templates, applicable to generate a proposed allocation, wherein each of the templates is of a respective type of proposed allocation and specifies a respective set of optimization parameters;
 - performing, by a grouping module, a clustering analysis on each available time segment in order to classify each available time segment into a respective one of a plurality of categories;
 - determining, by a payment module and for each available time segment, a price range acceptable to the target entity for the respective, available time segment;
 - computing, by a demand module, a respective demand for each of the different content types of the available time segments;
 - selecting, by the networked application and for each identified template, a subset of the available time segments based on:
 - (i) the respective demand computed for each of the different content types of the available time segments, (ii) the determined level of preference of reserving each of the available time segments, (iii) the classification of each of the available time segments, and (iv) the respective set of optimization parameters specified for each identified template; and
 - generating, by the networked application when executed by one or more computer processors, a proposed allocation comprising: (i) a total cost for the proposed allocation, (ii) a cost for each available time segment in the subset for each identified template, and (iii) the respective type of proposed allocation of each identified

template; wherein at least one of the available time segments is allocated to the target entity based on the proposed allocation;
wherein each module of the plurality of modules of the networked application, including the preference, optimization, grouping, payment, and demand modules, executes on a distinct compute node operatively connected to a network, in order to orchestrate allocation of available time segments in which to broadcast digital media.

Appellant appeals the following rejection:

Claims 1–6, 9–14, 17–22, and 25–30 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to patent-ineligible subject matter. Final Act. 3–8.

We review the appealed rejections for error based upon the issues identified by Appellant, and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential).

ANALYSIS

Rejection under § 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 the 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.”). For example, 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)).

Recently, the USPTO published revised guidance on the application of 35 U.S.C. § 101. USPTO’s 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) (“Revised Guidance”). Under the Revised Guidance “Step 2A,” the office first looks 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 (*see* MPEP § 2106.05(a)-(c), (e)-(h)). 84 Fed. Reg. at 51–52, 55.

Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, does the Office then (pursuant to the Revised Guidance “Step 2B”) 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. 84 Fed. Reg. at 56.

Step 2A, Prong 1 (Does the Claim Recite a Judicial Exception?)

With respect to independent method claim 1, and similarly, non-transitory computer-readable storage medium claim 9 and system claim 17, the Examiner determines that the claims are directed to “proposing an allocation and allocating segments” (Final Act. 3), which the Examiner associates with mental processes (*id.* at 5, 6), which is a type of abstract idea.

A claim recites a mental process when the claim encompasses acts people can perform using their minds or pen and paper. *See, e.g., CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1372–73 (Fed. Cir. 2011) (determining that a claim whose “steps can be performed in the human mind, or by a human using a pen and paper” is directed to an unpatentable mental process). This is true even if the claim recites that a generic computer component performs the acts. *See, e.g., Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1335 (Fed. Cir. 2015) (“Courts have examined claims that required the use of a computer and still found that the underlying, patent-ineligible invention could be performed via pen and paper or in a person's mind.”); *see also* 2019 Eligibility Guidance 84 Fed. Reg. at 52 n.14 (emphasis omitted) (“If a claim, under its broadest

reasonable interpretation, covers performance in the mind but for the recitation of generic computer components, then it is still in the mental processes category unless the claim cannot practically be performed in the mind.”).

Claim 1 recites at least the following limitations: (1) “determining . . . a respective level of preference of reserving each of a plurality of available time segments,” (2) “identifying . . . at least one template,” (3) “performing . . . a clustering analysis,” (4) “determining . . . a price range,” (5) “computing . . . a respective demand for each of the different content types,” (6) “selecting . . . a subset of the available time segments,” and (7) “generating . . . a proposed allocation.” *See* claim 1. It is the Examiner’s position that these limitations, under their broadest reasonable interpretation, recite mental processes because the limitations all recite mental processes that can be performed in the human mind or by using pen and paper. *See* Final Act. 5.

However, Appellant’s Specification discloses:

Product/service provider agreements with buyers can become very complex when many products which may expire are discussed within one deal and when the product and deal level pricing is highly negotiable. With just a small number of products, the number of potential combinations of bundles and prices cannot be thoroughly analyzed by the human brain. The product/service provider may provide an initial proposal or set of proposals to the buyer as a foundation for negotiations between the parties. Current methodologies to support the generation of these proposals are largely based on pre-defined packages or simple adjustments to prior deals. These adjustments typically lack the insight into the complexities of the overall inventory and demand picture to produce incrementally profitable bundling or pricing recommendations. Furthermore, these resulting proposals only output a single

recommendation, thus lacking any insight into the unknown behavior or preferences occurring during the negotiation process.

Spec. ¶ 2. In other words, Appellant's Specification explicitly notes that "[p]roduct/service provider agreements with buyers can become very complex" and "the number of potential combinations of bundles and prices cannot be thoroughly analyzed by the human brain." *Id.* Considering Appellant's aforementioned disclosure, we determine that Appellant's Specification notes features, i.e., pricing proposals, which cannot "practically" be performed in the mind. As a result, we disagree with the Examiner that the claimed invention recites mental processes.

On the other hand, the Examiner also determines that "[t]he claims recite a series of steps that relate to solving a business problem." Ans. 3. Upon reviewing the Specification and the claim as a whole, as summarized above, it is clear the claims recite commercial interactions, such as advertising or sales activities or behaviors. For example, Appellant's Specification further notes:

Embodiments disclosed herein provide systems, computer-implemented methods, and computer program products to generate sales proposals for many inventory items that may have variable pricing and expiration dates. Generally, internal users associated with the seller may generate the proposal, which may then be provided to a buyer or the buyer's agency for review. To generate a sales proposal, the software computes customer preference and willingness to pay for a bundle or grouping of products and generates bundles of products from many possible combinations that are sellable and desirable to the specific target customer. As used in this disclosure, "customer" includes potential customers. The software also places internal value on inventory to support maximized revenue opportunity as well as maximized profit opportunity.

The software may also set optimal “list” prices for inventory at a segmented level to reduce the displacement of revenue that occurs by selling inventory to customers when a higher paying customer may still exist. In one embodiment, a sales proposal may include an optimized mix of inventory with line item prices. The result may also include multiple proposals optimized relative to an optimization strategy. Generally, pricing in the proposals may be based on a variety of criteria such as current market conditions for the supplier, market demand for the supplier’s inventory, historical transactions, and external conditions in the overall marketplace.

Spec. ¶ 19.

While embodiments disclosed herein are discussed with the media advertising sales industry (including, but not limited to television, video, Internet, print, and radio) as a reference example, the techniques disclosed herein may support other industries. The general setting is a business-to-business transaction in a marketplace where prices are highly negotiable and there are many products that may be perishable and can be packaged together in different ways to create a long list of potential proposals presentable to the buyer. One example of a marketplace includes a cable advertising scatter market, where every sale of commercial inventory as well as the price for the inventory is negotiated. For cable networks having different channels or broadcast mediums (e.g. television, Internet, print, radio), manually building a proposal mix is heavily biased towards the inventory most frequently seen in the past. Inventory in such a setting is highly perishable in that commercial inventory for one day cannot be saved and sold for the next day. Furthermore, the inventory hierarchy in such a setting is highly heterogeneous.

Id. at 20. In other words, Appellant’s Specification describes generating sales proposals, fundamental economic practices (i.e., *certain methods of organizing human activity*) (see Ans. 3; “solving a business problem”), which is another type of abstract idea.

For example, at least the following decisions from our reviewing court have found many types of fundamental commercial practices patent ineligible: *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359 (Fed. Cir. 2015), *cert. denied*, 136 S. Ct. 701 (mem) (2015) (offer-based price optimization); *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350 (Fed. Cir. 2014) (transaction guaranty); *Personalized Media Commc'ns, L.L.C. v. Amazon.com Inc.*, 671 F. App'x 777 (mem) (Fed. Cir. 2016) (receiving instructions for ordering); *Macropoint, LLC v. Fourkites, Inc.*, 671 F. App'x 780 (mem) (Fed. Cir. 2016) (tracking freight); *Wireless Media Innovations, LLC v. Maher Terminals, LLC*, 636 F. App'x 1014 (mem) (Fed. Cir. 2016) (monitoring shipping containers); *America's Collectibles Network, Inc. v. Jewelry Channel, Inc. USA*, 672 F. App'x 997 (mem) (Fed. Cir. 2017) (conducting reverse auction by adjusting price and inventory); and *EasyWeb Innovations, LLC v. Twitter, Inc.*, 689 F. App'x 969 (Fed. Cir. 2017) (receiving, authenticating, and publishing data).

Appellant challenges the Examiner's determination on the ground that "the claims do not preempt any alternative approaches of allocating available time segments in which to broadcast digital media . . . [thus,] the instant claim is not abstract." Appeal Br. 15–16.

Although pre-emption "might tend to impede innovation more than it would tend to promote it,' thereby thwarting the primary object of the patent laws" (*Alice*, 573 U.S. at 216 (citing *Mayo*, 566 U.S. at 71)), "the absence of complete preemption does not demonstrate patent eligibility" (*Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015)). Moreover, because we find the claimed subject matter covers patent-ineligible subject matter, the pre-emption concern is necessarily addressed.

“Where a patent’s claims are deemed only to disclose patent ineligible subject matter under the *Mayo* framework, . . . preemption concerns are fully addressed and made moot.” *Ariosa Diagnostics*, 788 F.3d at 1379.

Other than the aforementioned argument relating to preemption, Appellant does not directly challenge whether claim 1 recites an abstract idea, i.e., a fundamental economic practice. The dependent claims contain limitations that recite the identified abstract idea, and do not create any additional elements beyond this abstract idea. Appellant’s arguments also fail to persuasively explain how the elements in the dependent claims recite more than the abstract ideas. Appeal Br. 19–32.

Therefore, for at least the aforementioned reasons, we agree with the Examiner that claim 1 recites an abstract idea, which we conclude is “a fundamental economic practice.”

Step 2A—Prong 2 (integration into Practical Application)²

Under the Revised Guidance, we now must determine if additional elements in the claims integrate the judicial exception into a **practical application** (*see* MPEP § 2106.05(a)–(c), (e)–(h)).

We discern no additional element (or combination of elements) recited in Appellant’s representative claim 1 that integrates the judicial exception into a practical application. *See* Revised Guidance, 84 Fed. Reg. at 54–55 (“Prong 2”). For example, Appellant’s claimed additional elements (e.g., “a networked application,” “a preference module,” “a target entity,”

² We acknowledge that some of the considerations at Step 2A, Prong 2, properly may be evaluated under Step 2 of *Alice* (Step 2B of the Office revised guidance). For purposes of maintaining consistent treatment within the Office, we evaluate them under Step 1 of *Alice* (Step 2A of the Office revised guidance). *See* Revised Guidance, 84 Fed. Reg. at 55 n.25, 27–32.

“an optimization module,” “template,” “a grouping module,” “a payment module,” “a demand module,” and “computer processors”) do not: (1) improve the functioning of a computer or other technology; (2) are not applied with any particular machine (except for a generic computer); (3) do not effect a transformation of a particular article to a different state; and (4) are not applied in any meaningful way beyond generally linking the use of the judicial exception to a particular technological environment, such that the claim as a whole is more than a drafting effort designed to monopolize the exception. *See* MPEP §§ 2106.05(a)–(c), (e)–(h).

Appellant contends “[t]he claimed process solves the technological problem of improving efficiency, load balancing, and accuracy of allocating available time segments in which to broadcast digital media . . . because the specific modules can execute in parallel and harness the computing power of multiple compute nodes.” Appeal Br. 16. Appellant further contends that “[l]ike the claims at issue in *Amdocs*, the presently claimed solution relies on a distributed architecture of a networked application having specific modules executing on distinct compute nodes.” *Id.* at 19. In analyzing whether a claim is directed to an abstract idea, we look to other decisions where similar concepts were previously found abstract by the courts. *See Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1294 (Fed. Cir. 2016).

For example, the claims at issue in *Enfish* were directed to 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. *See Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335–36 (Fed. Cir. 2016). In rejecting a § 101 challenge, the court in *Enfish* held that “the plain focus of the claims is on an improvement to

computer functionality itself, not on economic or other tasks for which a computer is used in its ordinary capacity.” *Id.* at 1336.

Here, Appellant does not direct our attention to anything in the Specification to indicate that the invention provides an improvement in the computer’s technical functionality. Instead, the claimed sales proposals improves economic tasks, i.e., pricing optimization. That is, here the arguably innovative technique of the appealed claims is inextricably a part of the abstract idea of “solving a business problem.” *See* Ans. 3. Moreover, nothing in the claims, understood in light of the Specification, requires anything other than an off-the-shelf, conventional computer used for collecting and processing/analyzing various information/data. *See* Spec. ¶ 76 (“These computer program instructions may be provided to a processor of a general purpose computer . . .”). Therefore, unlike *Enfish*, the claims are directed not to improvement in computer capabilities, but to the results of applying an abstract idea.

Furthermore, regarding Appellant’s contention that “specific modules can execute in parallel and harness the computing power of multiple compute nodes” (*see* Appeal Br. 16), Appellant is reminded that “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 (citing *Alice*, 573 U.S. at 224 (“use of a computer to create electronic records, track multiple transactions, and issue simultaneous instructions” is not an inventive concept)).

For at least the reason noted *supra*, we determine that claim 1

(1) recites a judicial exception and (2) does not integrate that exception into a practical application. Thus, representative claim 1 is directed to the aforementioned abstract idea.

Alice/Mayo—Step 2 (Inventive Concept)
Step 2B identified in the Revised Guidance

Turning to the second step of the *Alice* inquiry, we now look to whether claim 1 contains any “inventive concept” or adds anything “significantly more” to transform the abstract concept into a patent-eligible application. *Alice*, 573 U.S. at 216. As recognized by the Revised Guidance, an “inventive concept” under *Alice* step 2 can be evaluated based on whether an additional element or combination of elements:

- (1) adds a specific limitation or combination of limitations that are not well-understood, routine, 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 Revised Guidance, 84 Fed. Reg. at 56; *see* MPEP § 2106.05(d).

We find no element or combination of elements recited in Appellant’s claim 1 that contains any “inventive concept” or adds anything “significantly more” to transform the abstract concept into a patent-eligible application. Appellant has not adequately explained how claim 1 is performed such that it is not a routine and conventional function of a generic computer. Furthermore, a finding of novelty or non-obviousness does not require 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

nonobviousness, but, rather, is 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*, 573 U.S. at 217. “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 Diamond v. Diehr*, 450 U.S. 175, 188–89 (1981) (“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.”).

Because Appellant’s independent claim 1 is directed to a patent-ineligible abstract concept, does not include additional elements that integrate the judicial exception into a practical application, and does not add a specific limitation beyond the judicial exception that is not “well-understood, routine, and conventional,” we sustain the Examiner’s rejection of the claims under 35 U.S.C. § 101 as being directed to non-statutory subject matter in light of *Alice*, its progeny, and the Revised Guidance.

CONCLUSION

In summary:

Claims Rejected	Basis	Affirmed	Reversed
1–6, 9–14, 17–22, 25–30	§ 101	1–6, 9–14, 17–22, 25–30	

Appeal 2018-006035
Application 13/956,172

No period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED