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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* SANDIPAN GANGULY and DANIEL MARK LYNN

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Appeal 2017-002906  
Application 12/498,324<sup>1</sup>  
Technology Center 3600

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Before MAHSHID D. SAADAT, DENISE M. POTHIER, and  
HUNG H. BUI, *Administrative Patent Judges*.

BUI, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants seek our review under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 20–26, 31–34, 40–48, 54, and 56, which are all the claims pending in the application. Claims 1–19, 27–30, 35–39, 49–53, 55, and 57 are cancelled. App. Br. 20–26, Claims App'x. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.<sup>2</sup>

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<sup>1</sup> According to Appellants, Expedia, Inc. is the real party in interest. App. Br. 3.

<sup>2</sup> Our Decision refers to Appellants' Appeal Brief filed July 25, 2016 ("App. Br."); Reply Brief filed December 20, 2016 ("Reply Br."); Examiner's Answer mailed October 26, 2016 ("Ans."); Non-Final Office Action mailed February 25, 2016 ("Non-Final Act."); and original Specification filed September 28, 2009 ("Spec").

## STATEMENT OF THE CASE

Appellants' invention relates to "systems and methods for electronically ranking records of inventory items [i.e., hotels, automobile rentals, air travel, cruises, and packages comprising any combination thereof]." Spec. ¶¶ 10, 12. According to Appellants, "inventory ranking service [] is configured to identify and obtain records of inventory items matching the search criteria and perform a ranking operation that ranks each of the identified inventory items with respect to each other" "on the basis of criteria such as price or user ratings," i.e., "an inventory score for each of the identified inventory items based upon both the desirability of the inventory items, as reflected by attributes of the inventory items that are perceptible to users, as well as a margin, or profit, on the inventory items." Spec. ¶¶ 3, 13. This way, "the identified inventory items" can be ranked "according to the inventory" to "enable the presentation of the search results in a manner favorable to both the user and the seller." Spec. ¶ 70.

Claims 20, 31, and 43 are independent. Claim 20 is illustrative of the claimed subject matter, as reproduced below:

20. A computer-readable non-transitory medium having a computer-executable component comprising:

a search component that is configured to determine a group of inventory items that satisfy one or more search criteria received from a computing device, wherein the computing device is associated with a display having a limited display area; and

a results parsing component that is configured to:  
for each inventory item from the group of inventory items:  
obtain attributes of the inventory item, the attributes perceptible to a user;

obtain, for each of the attributes of the inventory item, an inventory attribute value that quantifies the attribute;

obtain an attribute weighting value for at least one attribute of the attributes of the inventory item, wherein the attribute weighting value is different from the inventory attribute value of the at least one attribute, and quantifies a relationship between the at least one attribute of the inventory item and at least one additional attribute of the inventory item;

determine a score for the inventory item based at least in part on the attributes of the inventory item, the inventory attribute value corresponding to each attribute, and the attribute weighting value;

determine a purchase likelihood for the inventory item, wherein the purchase likelihood for the inventory item is based at least in part on a comparison of the score of the inventory item to a total of the scores for the group of inventory items; and

determine a ranking of the inventory item according to the purchase likelihood of the inventory item; and

generate a user interface for output on the display of the computing device, wherein the group of inventory items are ordered within the user interface based at least in part on the rankings of the inventory items according to their respective purchase likelihoods, and wherein the user interface, when output on the display of the computing device, initially displays one or more highly ranked inventory items, from the group of inventory items, within the limited display area and omits one or more lower ranked inventory items, from the group of inventory items, from the limited display area; and

transmit the user interface to the computing device for output to the display.

App. Br. 20–21 (Claims App’x).

#### EXAMINER’S REJECTION

Claims 1–26, 31–34, 39–49, 54, and 56 [sic, claims 20–26, 31–34, 40–48, 54, and 56] stand rejected under 35 U.S.C. § 101 because the claimed invention is directed to an abstract idea without significantly more. Non-Final Act. 5–6.

## DISCUSSION

### *Legal Framework*

To determine whether claims are patent eligible under § 101, we apply the Supreme Court’s two-step framework articulated in *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 573 U.S. 208 (2014). First, we determine whether the claims are directed to a patent-ineligible concept: laws of nature, natural phenomena, and abstract ideas. *Id.* at 216–18. If so, we then proceed to the second step to consider the elements of the claims “individually and ‘as an ordered combination’” to determine whether there are additional elements that “‘transform the nature of the claim’ into a patent-eligible application.” *Id.* at 217. In other words, 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.’” *Id.*

The Federal Circuit has described the *Alice* step 1 inquiry as looking at the “focus” of the claims, their “character as a whole,” and the *Alice* step-two inquiry as looking more precisely at what the claim elements add—whether they identify an “inventive concept” in the application of the ineligible matter to which the claim is directed. *See Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016); *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335–36 (Fed. Cir. 2016); *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015).

Because there is no single definition of an “abstract idea” under *Alice* step 1, the PTO has recently synthesized, for purposes of clarity, predictability, and consistency, key concepts identified by the courts as

abstract ideas to explain that the “abstract idea” exception includes the following three groupings:

- (1) Mathematical concepts—mathematical relationships, mathematical formulas or equations, mathematical calculations;
- (2) Mental processes—concepts performed in the human mind (including an observation, evaluation, judgment, opinion); and
- (3) Certain methods of organizing human activity—fundamental economic principles or practices (including hedging, insurance, mitigating risk); commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations); managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions).

*See* 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50, 52 (Jan. 7, 2019 (“PTO § 101 Memorandum”)) which is effective on January 7, 2019. According to the PTO § 101 Memorandum, “[c]laims that do not recite [subject] matter that falls within these enumerated groupings of abstract ideas should not be treated as reciting abstract ideas,” except in rare circumstances. Even if the claims recite any one of these three groupings of abstract ideas, these claims are still not “directed to” a judicial exception (abstract idea) and, thus, are “patent-eligible” if “the claim as a whole integrates the recited judicial exception into a practical application of that [judicial] exception.” PTO § 101 Memorandum, 84 Fed. Reg. at 53. “Integration into a practical application” requires an additional element or a combination of additional elements in the claim to 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 exception. PTO § 101 Memorandum, 84 Fed. Reg. at 55.

For example, limitations that are indicative of “integration into a practical application” include:

- (1) Improvements to the functioning of a computer, or to any other technology or technical field – *see* MPEP § 2106.05(a);
- (2) Applying the judicial exception with, or by use of, a particular machine – *see* MPEP § 2106.05(b);
- (3) Effecting a transformation or reduction of a particular article to a different state or thing – *see* MPEP § 2106.05(c); and
- (4) Applying or using the judicial exception in some other 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(e).

In contrast, limitations that are **not** indicative of “integration into a practical application” include:

- (1) Adding the words “apply it” (or an equivalent) with the judicial exception, or mere instructions to implement an abstract idea on a computer, or merely uses a computer as a tool to perform an abstract idea – *see* MPEP § 2106.05(f);
- (2) Adding insignificant extra-solution activity to the judicial exception – *see* MPEP § 2106.05(g); and
- (3) Generally linking the use of the judicial exception to a particular technological environment or field of use – *see* § MPEP 2106.05(h).

*See* PTO § 101 Memorandum, 84 Fed. Reg. at 54–55 (“Prong Two”).

*Examiner’s Determination of Patent-Ineligibility*

In rejecting claims 20–26, 31–34, 40–48, 54, and 56 under 35 U.S.C. § 101, the Examiner determines these claims are directed to an abstract idea of “ranking items,” which falls into multiple categories of abstraction,

including “(i) a fundamental economic practice, (ii) a method of organizing human activities, (iii) an idea of itself [i.e., a mental process that could be performed in the human mind or by a human using a pen and paper], or (iv) a mathematical relationship or formula,” and include limitations that are analogous or similar to (1) concepts of comparing new and stored information and using rules to identify options as discussed in *SmartGene*, (2) concepts of organizing information through mathematical correlations as discussed in *Digitech*; and (3) concepts of optimizing the organization of sales representatives in a business as discussed in *In re Maucorps*, 609 F.2d 481 (CCPA 1979). Ans. 2–4; Non-Final Act. 5; see *SmartGene, Inc. v. Advanced Biological Labs., SA*, 852 F. Supp.2d 42 (D.D.C. 2012), *aff’d* 555 F. App’x 950, 955 (Fed. Cir. 2014) (holding that claims directed to “comparing new and stored information and using rules to identify medical options” are not patent-eligible); *Digitech Image Techs. LLC v. Electronics for Imaging, Inc.*, 758 F.3d 1344, 1350 (Fed. Cir. 2014) (holding claims directed to “a process of organizing information through mathematical correlations” are not patent-eligible); see also *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1370 (Fed. Cir. 2011).

The Examiner also determines the claims fail to amount to “significantly more” than the judicial exception” or contain an “inventive concept” because these addition claim elements are (1) “mere instructions to implement the idea on a computer,” and (2) “recitation of generic computer structure that serves to perform generic computer functions that are well-understood, routine, and conventional activities previously known to the pertinent industry.” Non-Final Act. 6.

*Appellants' Contentions of Patent-Eligibility & Analysis*

At the outset, Appellants contend the Examiner has not established a prima facie case of patent ineligibility under 35 U.S.C. § 101 because the Examiner has oversimplified and failed to provide “any reasonable [rationale] for concluding that the claim is ‘directed to’ a judicially excepted concept.” App. Br. 10–12. This argument is not persuasive because, as recognized by the Federal Circuit, “the prima facie case is merely a procedural device that enables an appropriate shift of the burden of production.” *Hyatt v. Dudas*, 492 F.3d 1365, 1369 (Fed. Cir. 2007) (citing *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992)). The court has held that the USPTO carries its procedural burden of establishing a prima facie case when its rejection satisfies the requirements of 35 U.S.C. § 132 by notifying the applicant of the reasons for rejection, “together with such information and references as may be useful in judging of the propriety of continuing the prosecution of [the] application.” *In re Jung*, 637 F.3d 1356, 1362 (Fed. Cir. 2011). Thus, all that is required of the Office is that it set forth the statutory basis of the rejection in a sufficiently articulate and informative manner as to meet the notice requirement of 35 U.S.C. § 132. *Id.*; see also *Chester v. Miller*, 906 F.2d 1574, 1578 (Fed. Cir. 1990) (Section 132 “is violated when a rejection is so uninformative that it prevents the applicant from recognizing and seeking to counter the grounds for rejection.”). Appellants do not contend that the Examiner’s rejection under 35 U.S.C. § 101 cannot be understood or that the Examiner’s rejection, otherwise, fails to satisfy the notice requirements of 35 U.S.C. § 132. Indeed, Appellants’ understanding of the rejection is clearly manifested by their response as set forth in the briefs.

Moreover, the Examiner is required to review all claims at some level of generalization and determine whether those claims are directed to an abstract idea under *Alice* step 1. However, there is no single definition of “abstract idea.” As the Federal Circuit succinctly put it:

The problem with articulating a single, universal definition of “abstract idea” is that it is difficult to fashion a workable definition to be applied to as-yet-unknown cases with as-yet-unknown inventions.

*Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1294 (Fed. Cir. 2016). Because there is no single definition of an abstract idea, the Federal Circuit instructs us “to 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.” *Amdocs*, 841 F.3d at 1294 (citing *Elec. Power Grp.*, 830 F.3d at 1353–54; accord USPTO Memorandum, JULY 2015 UPDATE: SUBJECT MATTER ELIGIBILITY, 3 (July 30, 2015), <https://www.uspto.gov/sites/default/files/documents/ieg-july-2015-update.pdf> (instructing Examiners that “a claimed concept is not identified as an abstract idea unless it is similar to at least one concept that the courts have identified as an abstract idea.”). In this case, the Examiner did just what he was required to do under the USPTO Memorandum i.e., analyzed the claims under *Alice* step 1 consistent with the guidance set forth in the USPTO’s “2014 Interim Guidance on Patent Subject Matter Eligibility,” 79 Fed. Reg. 74618 (Dec. 16, 2014), in effect at the time the rejection was made, i.e., on Mar. 18, 2016.

With respect to Appellants’ argument regarding the “directed to” inquiry under *Alice* step 1, we will address that argument separately in the

context of *Alice* step 1 inquiry and the newly published PTO § 101 Memorandum, 84 Fed. Reg. at 53, herein below.

*Alice/Mayo—Step 1 (Abstract Idea)*

Turning to the first step of the *Alice* inquiry, Appellants argue independent claims 20, 31, and 43 are not directed to an abstract idea, i.e., are not “(i) a fundamental economic practice, (ii) a method of organizing human activities, (iii) an idea of itself [i.e., a mental process that could be performed in the human mind or by a human using a pen and paper], or (iv) a mathematical relationship or formula,” as determined by the Examiner, because “the claims do not generically recite the concept of ‘ranking items’” but instead (1) “involve a specific algorithm; one which attempts to satisfy a search query by predicting the relevance of results as a function of their purchase likelihood, and returning those results most likely to be purchased by an end user” and (2) “recite the application of an improved search algorithm to better locate and display information on a computing device.” App. Br. 13–14. According to Appellants, the claims recite “a new and useful search algorithm that improves on traditional systems, by predicting the purchase likelihoods of search results [] and using a ranking based on those purchase likelihoods to selectively display” and the “improved search algorithm to process search query and display pertinent results, are [sic] directed to an improvement to computer functionality [as discussed in *Enfish*].” App. Br. 14–15. Appellants further argue, similar to the claims in *McRO, Inc. v. Bandai Namco Games America, Inc.*, 837 F.3d 1299 (Fed. Cir. 2016), their claims are “fundamentally technological in nature” and relate to “an improvement in computer-related technology” because “the specification [] describes how the presently claimed subject matter improves

the search results provided by prior systems . . . [and] includes a teaching ‘about how the claimed invention improves a computer or other technology.’” Reply Br. 2–5 (citing Spec. ¶¶ 3–4, 10, 24–32).

Appellants’ arguments are not persuasive. At the outset, we note the newly published PTO § 101 Memorandum governs all patent-eligibility analysis under *Alice* and § 101 effective as of January 7, 2019. In particular, the PTO has acknowledged that the Federal Circuit’s common law, analogy-driven approach (a.k.a. “analogous claim” test) was effective soon after *Alice* was decided by the Supreme Court, but that approach has since become impractical as the growing body of Federal Circuit precedent has become increasingly more difficult for the Office and Examiners to apply in a predictable manner. As a result, the PTO has synthesized, for purposes of clarity, predictability, and consistency, the “abstract idea” exception to include three categories of abstract ideas as listed in the PTO § 101 Memorandum, 84 Fed. Reg. at 54–55.

Contrary to Appellants’ arguments, Appellants’ claims and Specification describe “systems and methods for electronically ranking records of inventory items [i.e., hotels, automobile rentals, air travel, cruises, and packages comprising any combination thereof].” Spec. ¶¶ 10, 12. According to Appellants, “inventory ranking service [] is configured to identify and obtain records of inventory items matching the search criteria and perform a ranking operation that ranks each of the identified inventory items with respect to each other” based on “an inventory score for each of the identified inventory items based upon both the desirability of the inventory items, as reflected by attributes of the inventory items that are perceptible to users, as well as a margin, or profit, on the inventory items.”

Spec. ¶ 13. This way, “the identified inventory items” can be ranked “according to the inventory” to “enable the presentation of the search results in a manner favorable to both the user and the seller.” Spec. ¶ 70.

For example, Appellants’ independent claim 20 defines a computer-readable non-transitory medium comprising a results parsing component configured to:

identify a plurality of inventory items that satisfy search criteria;

obtain [i] attributes . . . [ii] inventory attribute values for each of the attributes of the inventory item . . . [iii] an attribute weighting value for each of the attributes of the plurality of inventory items;

generate a score for each of the plurality of inventory items as a function of their respective adjusted inventory attribute values;

rank the identified inventory items . . . according to their respective purchase likelihoods;

generate a user interface . . . on the rankings of the inventory items according to their respective purchase likelihoods . . .; and

transmit the user interface . . . for output to the display.

App. Br. 20–21 (Claims App’x) (bracketing added). System and process claim 31 and claim 43 recite similar limitations.

As correctly recognized by the Examiner (Ans. 2, 6), “ranking [inventory] items [i.e., hotels, automobile rentals, air travel, cruises, and packages comprising any combination thereof]” based on criteria such as pricing and user ratings, i.e., “attributes of the plurality of inventory items” that are used to generate an inventory “score” as recited in Appellants’ claims 20, 31, and 43 are nothing more than “mental processes” that could be performed in the human mind or by a human using a pen and paper—a

subject matter that falls within the three types of abstract ideas identified by the PTO § 101 Memorandum. *See CyberSource*, 654 F.3d at 1372–73 (“[A] method that can be performed by human thought alone is merely an abstract idea and is not patent-eligible under [§] 101.”); *see also In re Comiskey*, 554 F.3d 967, 979 (Fed. Cir. 2009) (“[M]ental processes—or processes of human thinking—standing alone are not patentable even if they have practical application.”); *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) (“Phenomena of nature, . . . *mental processes*, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work.” (Emphasis added)). Additionally, mental processes remain unpatentable even when automated to reduce the burden on the user of what once could have been done with pen and paper. *CyberSource*, 654 F.3d at 1375 (“That purely mental processes can be unpatentable, even when performed by a computer, was precisely the holding of the Supreme Court in *Gottschalk v. Benson*.”).

For example, steps of “obtaining [i] attributes . . . [ii] inventory attribute value[s] for each [of the] attribute[s] of [the] inventory item[s] . . . [iii] an attribute weighting value for each of the attributes of the plurality of inventory items” recited in Appellants’ claims 20, 31, and 43 can be performed by a human who simply reads records of inventory items. Similarly, steps of “determining [i] a score of each inventory item . . . [and ii] a purchase likelihood for each inventory item” and then “ranking the inventory item[]” can be performed by a human who writes a score and a likelihood for purchase for each inventory item on a paper. Lastly, steps of “generating” and “transmitting the user interface . . . for output to the

display” are, again, broadly worded that these steps can be performed by a human who completes these tasks on paper.

Alternatively, “ranking [inventory] items [i.e., hotels, automobile rentals, air travel, cruises, and packages comprising any combination thereof]” of search results based on price or user ratings, i.e., an inventory score and attributes of the inventory item for financial transactions (sales) or according to their respective purchase likelihoods, as recited in Appellants’ claims 20, 31, and 43 is also plainly directed to a fundamental economic practice under a “certain method of organizing human activity” identified by the PTO § 101 Memorandum because ranking of inventory items, according to Appellants’ Specification, is used to facilitate the transaction between the user and the seller (*see* Spec. ¶ 70). Such activities are squarely within the realm of abstract ideas, like (1) the risk hedging in *Bilski v. Kappos*, 561 U.S. 593 (2010); (2) the intermediated settlement in *Alice*, 573 U.S. at 219–22; (3) verifying credit card transactions in *CyberSource*, 654 F.3d at 1370; (4) guaranteeing transactions in *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1354 (Fed. Cir. 2014); (5) distributing products over the Internet in *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709 (Fed. Cir. 2014); (6) determining a price of a product offered to a purchasing organization in *Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306 (Fed. Cir. 2015); and (7) pricing a product for sale in *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359 (Fed. Cir. 2015). Ranking inventory items based on price or user ratings for a transaction is also a building block of a market economy and, like risk hedging and intermediated settlement, is an “abstract idea” beyond the scope of § 101. *See Alice*, 573 U.S. at 219–220.

We also discern no additional element (or combination of elements) recited in Appellants' claims 20, 31, and 43 that integrates the judicial exception into a practical application. *See* PTO § 101 Memorandum, 84 Fed. Reg. at 54–55 (“Prong Two”). For example, Appellants' claims 20, 31, and 43's additional elements (e.g., “a computer-executable component” in claim 20, “a computing device” in claim 31, or “one or more computing devices” in claim 43) 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). Moreover, “the mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention.” *Alice*, 573 U.S. at 223; *see also* MPEP § 2106.05(f).

Appellants' reliance on *McRO* is also misplaced. For example, *McRO*'s '576 patent (U.S. Patent No. 6,307,576) describes a computer software for matching audio to a 3D animated mouth movement to provide lip-synced animation. *McRO*'s claims contain (i) specific limitations regarding a set of rules that “define[] a morph weight set stream as a function of phoneme sequence and times associated with said phoneme sequence” to enable computers to produce ““accurate and realistic lip synchronization and facial expressions in animated characters”” (*McRO*, 837 F.3d at 1313) and, when viewed as a whole, are directed to (ii) a “technological improvement over the existing, manual 3–D animation techniques” that uses “limited rules in a

process specifically designed to achieve an improved technological result in conventional industry practice.” *McRO*, 837 F.3d at 1316.

In contrast to *McRO*, Appellants’ claims and Specification are directed to “ranking [inventory] items [i.e., hotels, automobile rentals, air travel, cruises, and packages comprising any combination thereof]” of search results based on criteria such as price or user ratings, i.e., an inventory score and attributes of the inventory item for financial transactions (sales) or according to their respective purchase likelihoods. As previously discussed, organizing or ranking inventory items of search results based on criteria such as price or user ratings can be performed by a human using a pen and paper (see *CyberSource*, 654 F.3d at 1372–73) and does not improve the computer functionality discussed in *Enfish* or improve the computer-related technology discussed in *McRO*, as Appellants argue. App. Br. 14–15; Reply Br. 2–5.

For these reasons, we agree with the Examiner’s determination that Appellants’ claims 20, 31, and 43 are directed to an abstract idea that is not integrated into a practical application.

*Alice/Mayo—Step 2 (Inventive Concept)*

In the second step of the *Alice* inquiry, Appellants argue (1) “the claims recite a specific, particular implementation for ranking, as applied to a computing device to improve the performance of that device”; and (2) the claims contain an “inventive concept” like the claims in *Bascom Global Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1350, 1352 (Fed. Cir. 2016) and *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014) because these claims recite “a specific, discrete implementation of an improved search and ranking algorithm as

implemented by a computing device to control the information returned in response to a search query” or “a technological solution to a technological problem [] rooted in computer technology.” App. Br. 15–17; Reply Br. 8–9.

Appellants also argue the claims include “recitations [that] are not ‘well-understood, routine, and conventional activities previously known to the pertinent industry,’” i.e., “a results parsing component that obtains inventory items as search results from a search component” and “a specific ranking, based on a purchase likelihood” before generating “a user interface for output on the display of the computing device.” App. Br. 18. According to Appellants, these “additional features that ensure that claims are more than a drafting effort designed to monopolize ‘ranking items.’” *Id.*

Appellants’ arguments are not persuasive. Under current Federal Circuit precedent, an “inventive concept” under *Alice* step 2 can be established by showing, for example, that the patent claims:

- (1) provide a technical solution to a technical problem unique to the Internet, e.g., a “solution . . . necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks” (*see DDR*, 773 F.3d at 1257));
- (2) transform the abstract idea into “a particular, practical application of that abstract idea,” e.g., “installation of a filtering tool at a specific location, remote from the end-users, with customizable filtering features specific to each end user” (*see Bascom*, 827 F.3d at 1352, 1350 (Fed. Cir. 2016); or
- (3) “entail[] an unconventional technological solution ([e.g.,] enhancing data in a distributed fashion) to a technological problem ([e.g.,] massive record flows [that] previously required massive databases)” and “improve the performance of the system itself” (*see Amdocs*, 841 F.3d at 1300, 1302).

Similarly, as recognized by the PTO § 101 Memorandum, an “inventive concept” under *Alice* step 2 can also be evaluated based on whether an additional element or combination of elements:

- (1) “[a]dds 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” (*see* MPEP § 2106.05(d)); 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* PTO § 101 Memorandum, 84 Fed. Reg. at 56.

In this case, we find no additional element or combination of elements recited in Appellants’ claims 20, 31, and 43 contains any “inventive concept” or adds anything “significantly more” to transform the abstract concept into a patent-eligible application. *Alice*, 573 U.S. at 221–222. For example, Appellants’ abstract idea of “ranking [inventory] items” of search results based on criteria such as pricing and user ratings or according to their respective purchase likelihoods is not rooted in computer technology; nor does it (1) provide any technical solution to a technical problem as required by *DDR Holdings*; (2) provide any particular practical application as required by *Bascom*; or (3) entail an unconventional technological solution to a technological problem as required by *Amdocs*. Instead, Appellants’ invention simply uses generic computer components to perform the abstract idea of “ranking [inventory] items” of search results based on criteria such as pricing and user ratings (Spec. ¶¶ 3, 10, 12–13, 70, Fig. 1). As recognized by the Examiner, “[t]here is no indication that the combination of elements

improves the functioning of a computer or improves any other technology.”  
Ans. 4–5. In fact, the only “additional [] elements” recited merely  
implement the abstract idea on generic computing elements (i.e., datastore,  
computing device, user interface, and display, shown in Figure 1).” *Id.* at 5.  
However, the use of a generic computer device does not alone transform an  
otherwise abstract idea into patent-eligible subject matter. As our reviewing  
court has observed, “after *Alice*, there can remain no doubt: recitation of  
generic computer limitations does not make an otherwise ineligible claim  
patent-eligible.” *DDR*, 773 F.3d at 1256 (citing *Alice*, 573 U.S. at 223).  
Moreover, Appellants have not shown any specific limitation in claims 20,  
31, and 43 beyond the judicial exception that is not “well-understood,  
routine, and conventional” in the field (*see* MPEP § 2106.05(d)).

With respect to the alleged limitations in Appellants’ claims 20, 31,  
and 43 that are not “well-understood, routine, and conventional activities,”  
we acknowledge the Federal Circuit’s decision in *Berkheimer v. HP Inc.*,  
881 F.3d 1360 (Fed. Cir. 2018) where the court held that “[w]hether  
something [(i.e., additional elements beyond the abstract idea)] is well-  
understood, routine, and conventional to a skilled artisan at the time of the  
patent is a factual determination” under *Alice* step 2. *See Berkheimer*, 881  
F.3d 1369. However, as correctly recognized by the Examiner (Ans. 4–5),  
the additional elements beyond the abstract idea are generic computing  
elements such as datastore, computing device, user interface, and display.  
Using these generic computing components to perform an abstract idea, i.e.,  
organizing or ranking inventory items of search results based on criteria such  
as price or user ratings or according to their respective purchase likelihoods  
cannot transform the abstract idea into a patent-eligible invention.

Moreover, the use of these generic computing components is well-understood, routine, and conventional to a skilled artisan as evidenced in Appellants' own Specification (*see* Spec. ¶ 14) and prior art of record, including, for example: (1) Geoghegan et al. (US 2008/0091480 A1; published Apr. 17, 2008) ¶¶ 31–36, Figs. 1–2; and (2) Keil et al. (US 2008/0033787 A1; published Feb. 7, 2008) ¶¶ 66–67, Figs. 2–3.

#### *Additional Argument*

Appellants further argue that the claims do not preempt the abstract idea of “ranking items” along with the requirement to perform it on a computer, or “all ways of ranking items on computers.” App. Br. 17. However, this argument is not persuasive because, although “preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility.” *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015). “Where a patent’s claims are deemed only to disclose patent ineligible subject matter” under the *Alice/Mayo* framework, “preemption concerns are fully addressed and made moot.” *Id.*

Because Appellants' claims 20, 31, and 43 are directed to a patent-ineligible abstract concept and do not recite something “significantly more” under the second prong of the *Alice* analysis, we sustain the Examiner's rejection of claims 20–26, 31–34, 40–48, 54, and 56 under 35 U.S.C. § 101.

#### CONCLUSION

On the record before us, we conclude Appellants have not demonstrated the Examiner erred in rejecting claims 20–26, 31–34, 40–48, 54, and 56 under 35 U.S.C. § 101.

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DECISION

As such, we AFFIRM the Examiner's rejection of claims 20–26, 31–34, 40–48, 54, and 56 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