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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte PHILIP ADAM HEWINSON, ADAM STEVENS,
BEN PARSONS, ANALA JOELLE PRABHU, MAYA CAHIER, and
SEBASTIAN MICHAEL ANTHONY TOTTE

Appeal 2020-003152
Application 15/216,664
Technology Center 3600

Before JAMES P. CALVE, BRADLEY B. BAYAT, and
ROBERT J. SILVERMAN, *Administrative Patent Judges*.

BAYAT, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant¹ appeals under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1–20, which constitute all pending claims in the application. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ We use the term “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as “Facebook, Inc.” Appeal Br. 2.

INVENTION

Appellant's "invention relates generally to presenting content to users of an online system, and more specifically to predicting performance of content presented to users." Spec. ¶ 1.

CLAIMED SUBJECT MATTER

Claims 1 and 13 are the independent claims on appeal and recite substantially similar subject matter. Claim 1, reproduced below with added bracketed notations and reformatting, is representative of the claimed subject matter. *See* Appeal Br. 19, Claims App. (emphasis added).

1. A method comprising:

[(a)] obtaining a plurality of content items *at an online system* for presentation to users *of the online system*;

[(b)] maintaining information *at the online system* describing contexts in which content items are presented to users *of the online system*, a context in which a content item is presented to a user identifying a combination of: content presented in conjunction with the content item, content presented prior to presentation of the content item, an action performed by a user prior to presentation of the content item, *an application in which the content item is presented*, and a format in which the content item is presented;

[(c)] determining a quality score *by the online system* for each of at least a set of contexts in which content items are presented to users *of the online system*, the quality score for a context based on actions performed by users *of the online*

system who were previously presented with one or more content items in the context;

[(d)] identifying a context in which a selected content item is to be presented to users *of the online system*;

[(e)] retrieving a quality score for the identified context from the information maintained *at the online system*; and

[(f)] determining a predicted performance of the content item based on the retrieved quality score for the identified context and one or more characteristics of the selected content item including a location in which the content item is to be presented.

REJECTIONS

Claims 13–20 are rejected under 35 U.S.C. § 112(b) as indefinite.

Claims 1–20 are rejected under 35 U.S.C. § 101 as directed to a judicial exception without integration into a practical application and significantly more.

Claims 1, 4, 7–13, 15, and 17–20 are rejected under 35 U.S.C. § 103 as unpatentable over Shay et al. (US 2015/0088644 A1, pub. Mar. 26, 2015) (“Shay”) and Sarukkai et al. (US 2013/0174045 A1, pub. July 4, 2013) (“Sarukkai”).

Claims 2, 3, 5, 6, 14, and 16 are rejected under 35 U.S.C. § 103 as unpatentable over Shay, Sarukkai, and Non-patent Literature titled “Add or Multiply? A Tutorial on Ranking and Choosing with Multiple Criteria” available at <https://pubsonline.informs.org/doi/pdf/10.1287/ited.2013.0124> by Chris Tofallis (“Tofallis”).

OPINION

35 U.S.C. § 112(b)

The Examiner rejects claims 13–20 as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as his invention. Final Act. 2. In particular, the Examiner maintains that independent claim 13’s recitation of “[a] *computer program product **comprising** a non-transitory computer-readable-storage medium*” renders the claim indefinite because it is unclear how a computer program product (i.e., software) can comprise a computer readable storage medium (i.e., hardware), as supported by at least paragraph 56 of the Specification. Ans. 5.

Appellant disagrees and argues that claim 13 is not indefinite because “[t]he definition of a ‘computer program product’ is specifically provided in the specification, for example at paragraph [0055], which recites ‘a computer program product comprising a **computer-readable medium containing computer program code, which can be executed by a computer processor for performing any or all of the steps, operations, or processes described.**’” Reply Br. 2; *see also* Appeal Br. 4.

During examination, claims are to be given their broadest reasonable interpretation consistent with the specification, and the language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art. *In re Amer. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004) (citations omitted).

Even though Appellant correctly asserts that as “their own lexicographers” they “can define in the claims what they regard as their invention essentially in whatever terms they choose *so long as any special*

meaning assigned to a term is clearly set forth in the specification” (Reply Br. 2, emphasis added), we find Appellant’s written description of the invention creates ambiguity as to the meaning of the term “computer program product,” which is described as both software and hardware in the Specification. For example, paragraph 54 discloses that “algorithms and symbolic representations of operations on information . . . while described functionally, computationally, or logically, are understood to be implemented by computer programs or equivalent electrical circuits,” which distinguishes computer programs from hardware. Paragraph 55 discloses that “a software module is implemented with a computer program product comprising a computer-readable medium containing computer program code,” which supports Appellant’s position that “computer program product” would be understood as a tangible medium or hardware. Paragraph 56 discloses that “a computer program may be stored in a non-transitory, tangible computer readable storage medium,” which describes a “computer program” as software.

However, paragraph 57 of Appellant’s Specification discloses that a product may comprise information resulting from a computing process, the information is stored on a medium and “may include any embodiment of a *computer program product or other data combination.*” (Emphasis added). We find this disclosure creates ambiguity by equating a “computer program product” with “data,” which supports the Examiner’s position. Appellant’s different treatments of “computer program product” and “product” in the Specification makes it unclear whether a “product” is a tangible medium or data with no physical embodiment. “The claims, when read in light of the specification and the prosecution history, must provide objective boundaries

for those of skill in the art.” *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014). In other words, one of ordinary skill in the art would be unable to discern from the Specification whether “computer program product” is limited to a tangible medium or also includes disembodied data. “Without better guidance, an artisan must speculate which choice of the alternative characteristics better describes any of these terms in a given situation.” *IQASR LLC v. Wendt Corp.*, Appeal No. 2020-2227, 2020 WL 5525021, at *11 n.5 (Fed. Cir. Sept. 15, 2020) (nonprecedential). “[I]f a claim is amenable to two or more plausible claim constructions, the [Examiner] is justified in requiring the applicant to more precisely define the metes and bounds of the claimed invention by holding the claim indefinite.” *Ex parte Miyazaki*, 89 USPQ2d 1207, 1211 (BPAI 2008) (precedential); *see also In re McAward*, No. 2015-006416, 2017 WL 3669566 (PTAB Aug. 25, 2017) (precedential). Therefore, we are not persuaded of error by the Examiner.

Accordingly, we sustain the rejection of claims 13–20 as indefinite.

35 U.S.C. § 101

Under 35 U.S.C. § 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. The Supreme Court, however, has long interpreted § 101 to include an implicit exception: “[l]aws of nature, natural phenomena, and abstract ideas” are not patentable. *Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014).

The Supreme Court, in *Alice*, reiterated the two-step framework previously set forth in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66 (2012), “for distinguishing patents that claim

laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts.” *Alice Corp.*, 573 U.S. at 217. The first step in that analysis is to “determine whether the claims at issue are directed to one of those patent-ineligible concepts.” *Id.* If the claims are not directed to a patent-ineligible concept, e.g., an abstract idea, the inquiry ends. Otherwise, the inquiry proceeds to the second step where the elements of the claims are considered “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.* (quoting *Mayo*, 566 U.S. at 78, 79). This is “a 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.* at 217–18 (alteration in original) (citation omitted).

The Examiner rejects claims 1–20 as being directed to patent ineligible subject matter by discussing independent claims 1 and 13 separately, and evaluating the claims under the *Alice* framework and the 2019 Revised Guidance.² Final Act. 4–11. Appellant disputes the rejection

² The U.S. Patent and Trademark Office (“USPTO”) published revised guidance for use by USPTO personnel in evaluating subject matter eligibility under 35 U.S.C. § 101. 2019 REVISED PATENT SUBJECT MATTER ELIGIBILITY GUIDANCE, 84 Fed. Reg. 50, 57 (Jan. 7, 2019) (the “2019 Revised Guidance”). That guidance revised the USPTO’s examination procedure with respect to the first step of the *Alice* framework by (1) “[p]roviding groupings of subject matter that [are] considered an abstract idea”; and (2) “clarifying that a claim is not ‘directed to’ a judicial exception if the judicial exception is integrated into a practical application of that exception.” *Id.* at 50.

of claims 1–20 based on claim 1. Appeal Br. 5–12. We select claim 1 as representative of the claims, with claims 2–20 standing or falling therewith. *See* 37 C.F.R. § 41.37(c)(1)(iv)(2019).

Statutory Categories under § 101

To determine subject matter eligibility under 35 U.S.C. § 101, the Examiner must first determine if the claims fall into one of the four statutory categories of invention: processes, machines, manufactures, or composition of matter. *See* MPEP § 2106.03. The Examiner determines that claim 1 recites a method, and is directed to a process, which is one of the statutory categories under § 101. Final Act. 4.

We now turn to the two step *Alice* framework.

Step One of the Alice Framework (2019 Revised Guidance, Step 2A)
Step 2A, Prong One

The first step in the *Alice* framework is to determine whether the claims at issue are “directed to” a patent-ineligible concept, e.g., an abstract idea. *Alice Corp.*, 573 U.S. at 217. This first step, as set forth in the 2019 Revised Guidance (i.e., Step 2A), is a two-prong test; in Step 2A, Prong One, the Examiner must look to whether the claim recites a judicial exception, e.g., one of the following three groupings of abstract ideas: (1) mathematical concepts; (2) certain methods of organizing human activity, e.g., fundamental economic principles or practices, commercial or legal interactions; and (3) mental processes. 2019 Revised Guidance, 84 Fed. Reg. at 54. If so, the Examiner must next consider whether the claim includes additional elements, beyond the judicial exception, that “integrate the [judicial] exception into a practical application,” i.e., that 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 judicial exception (Step 2A, Prong Two). *Id.* at 54–55. Only if the claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, then the Examiner can conclude that the claim is “directed to” the judicial exception, e.g., an abstract idea.

To that end, the Examiner determines that claim 1 is “directed to the abstract idea of presenting one or more content items to users by analyzing user behavioral data associated with contexts in which the one or more content item is to be presented.” Final Act. 5. The Examiner states that steps (a)–(f) of claim 1, except for the recitation of the “online system” and “an application in which the content item is presented” (italicized in claim 1 *supra*), encompass the abstract idea. *Id.* According to the Examiner, these steps describe “certain methods of organizing human activity between content provider and content consumer implemented by utilizing mathematical concepts.” *Id.* at 6 (emphasis omitted). The Examiner maintains that the certain methods of organizing human activity grouping applies to commercial interactions in the form of advertising, marketing or sales activities or behaviors, and mathematical concepts grouping applies although Appellant’s determination of predicted performance is recited in words rather than a mathematical expression. Ans. 6.

Appellant argues that claim 1 is not directed to an abstract idea and does not fall within the category of certain methods of organizing human activity or mathematical concepts. Appeal Br. 5–6. Additionally, Appellant asserts “claim 1 includes multiple steps that require action by a processor that cannot practically be performed in the mind.” *Id.* at 7. According to

Appellant, none of steps (a)–(e) of claim 1 “can [be] practically [] performed in the mind. As such, the claims are patent eligible under Prong 1 of Step 2A.” *Id.* at 8.

For the reasons discussed below, we are not persuaded the Examiner erred in concluding that claim 1 recites an abstract idea under Prong 1, Step 2A of the Revised Guidance.

Appellant’s claimed invention “determines a predicted performance of presenting a content item based on factors including a context in which the content items is to be presented.” Spec., Abstract. Process steps (a)–(f) of claim 1 describe how this is performed, however, the “steps of the method may be performed in different orders than the order described in conjunction with FIG. 3” (*id.* ¶ 41), which mirrors the order in claim 1. We begin our analysis by broadly but reasonably construing the steps recited in claim 1.

Step (a) of claim 1 recites “obtaining a plurality of content items . . . for presentation to users.” Appeal Br. 19, Claims App. An example of content (e.g., text, image, audio, video, or any other suitable data) items collected for presentation to users is advertisements. Spec. ¶¶ 18, 23. In *Electric Power Group, LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016), the Federal Circuit reiterated: “[W]e have treated collecting information, including when limited to particular content (which does not change its character as information), as within the realm of abstract ideas.”³ Therefore, step (a) recites an abstract idea.

³ See also, e.g., *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1349 (Fed. Cir. 2015); *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1363 (Fed. Cir. 2015); *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat’l Ass’n*, 776 F.3d 1343, 1347 (Fed. Cir. 2014); *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1351

Step (b) recites

maintaining information . . . describing contexts in which content items are presented to users, a context in which a content item is presented to a user identifying a combination of: content presented in conjunction with the content item, content presented prior to presentation of the content item, an action performed by a user prior to presentation of the content item, an application in which the content item is presented, and a format in which the content item is presented

Appeal Br. 19, Claims App. This step describes “stor[ing] information associated with various content items identifying contexts in which content items were presented to users or in which content items are to be presented to users . . . to categorize presentation of various content items.” Spec. ¶ 27. Step (b) recites an abstract idea because in *TLI Communications LLC v. AV Automotive LLC*, 823 F.3d 607, 611 (Fed. Cir. 2016), the court held the concept of storing and classifying data in an organized manner is an abstract idea.

Step (c) recites “determining a quality score . . . for each of at least a set of contexts in which content items are presented to users . . . the quality score for a context based on actions performed by users . . . who were previously presented with one or more content items in the context.” Appeal Br. 19, Claims App. A quality score for a context is a numeric value (e.g., between 1 and 5) describing effectiveness of the context in causing users to perform a particular action. *Id.* ¶ 46. Determining a quality score by assigning a numeric value can be done in the human mind by observing and evaluating user actions. For example, a person can observe each consumer’s

(Fed. Cir. 2014); *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1370 (Fed. Cir. 2011).

reaction to a product display advertisement in a store and assign a quality score of 5, as most effective, when a consumer purchases the product in response to the advertisement. Mental processes, which are concepts performed in the human mind (including an observation, evaluation, judgment, opinion), recite an abstract idea. 2019 Revised Guidance, 84 Fed. Reg. at 52; *see CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1373 (Fed. Cir. 2011) (“[A] method that can be performed by human thought alone is merely an abstract idea.”); *accord Versata Dev. Grp. Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1335 (Fed. Cir. 2015). Therefore, step (c) recites an abstract idea.

Step (d) recites “identifying a context in which a selected content item is to be presented to users.” Appeal Br. 19, Claims App. For example, by selecting a content item from the maintained content items and identifying a context (e.g., having a maximum likelihood of engagement) in which the selected content item is to be presented. Spec. ¶ 47 (“the selected content item includes a description or an identifier of the context in which the content item is to be presented”). The step of identifying a context in which to present the selected content item, recites a mental process performed in the human mind by evaluating a content item, which is described in Appellant’s Specification as capable of being performed “by manual review of the content item by an administrator of the content item.” *Id.* ¶ 39; *see, e.g., Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1316–18 (Fed. Cir. 2016) (relying upon the specification, the Federal Circuit explained that the claimed electronic post office is analogous to how a person evaluates a particular piece of mail and decides whether to read or dispose of it, “with the exception of generic computer-implemented steps, there is nothing in the

claims themselves that foreclose them from being performed by a human, mentally or with pen and paper”); *Secured Mail Sols. LLC v. Universal Wilde, Inc.*, 873 F.3d 905, 910 (Fed. Cir. 2017), *cert. denied*, 138 S. Ct. 2000 (2018) (“The fact that an identifier can be used to make a process more efficient, however, does not necessarily render an abstract idea less abstract.”). Therefore, step (d) recites an abstract idea.

Step (e) of “retrieving a quality score for the identified context from the information maintained” (Appeal Br. 19, Claims App.) may be performed in the human mind by observing a quality score recorded on paper, which is a mental process and an abstract idea.

Step (f) recites “determining a predicted performance of the content item based on the retrieved quality score for the identified context and one or more characteristics of the selected content item including a location in which the content item is to be presented.” Appeal Br. 19, Claims App. Determining the predicted performance of the content item is described as a product of a value based on a location in which the content item is to be presented and a constant raised to a power of the quality score for the context in which the content item is to be presented—e.g., “the predicted performance is determined 330 as a product of a percentage of presentations of the content item in a particular location and two raised to the power of the quality score for the context in which the content item is to be presented.” Spec. ¶ 48. This mathematical calculation recites an abstract idea as being both a mental process that can be performed in the human mind or with pen and paper, and a mathematical concept. *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1163–65 (Fed. Cir. 2018) (performing a resampled statistical analysis to generate a resampled distribution is an abstract idea). In fact,

step (f) is recited as being performed manually without any tie to the online system.

Our analysis above identifies each step of claim 1 individually as reciting an abstract idea. In evaluating steps (a)–(f) in combination, we agree with the Examiner that claim 1 recites a method of organizing human activity of a content administrator predicting revenue generated from presenting a content item (e.g., advertising) to users in a particular location to accurately assess how contexts in which the content is presented influence user behavior so that revenue obtained from third party systems (e.g., advertisers) is increased. *See Spec.* ¶¶ 9, 10, 49, 52. The steps of claim 1 together reflect commercial interactions in the form of marketing or sales activities or behaviors between a content administrator and user, which falls within the enumerated “Certain methods of organizing human activity” grouping of abstract ideas set forth in the 2019 Revised Guidance. 84 Fed. Reg. at 52.

The abstract idea recited here is not meaningfully different from the ideas found to be abstract in other cases before our reviewing court. Notably, our reviewing court has held that “tailoring of content based on information about the user—such as where the user lives or what time of day the user views the content—is an abstract idea.” *Affinity Labs of Texas, LLC v. Amazon.com Inc.*, 838 F.3d 1266, 1271 (Fed. Cir. 2016) (describing *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1369 (Fed. Cir. 2015)). And, in *Bridge and Post, Inc. v. Verizon Communications, Inc.*, 778 F. App’x 882 (Fed. Cir. 2019), the Federal Circuit held that abstract ideas include tracking a user’s computer network activity and using information gained about the user to deliver targeted

media such as advertisements. Recently, the court reiterated that claims reciting “targeted advertising and bidding to display advertising . . . are abstract ideas relating to customizing information based on the user and matching them to the advertiser.” *In re Morsa*, 809 F. App’x 913, 917 (Fed. Cir. 2020). *See also Evolutionary Intelligence, LLC v. Spring Nextel Corp.*, 137 F. Supp. 3d 1157 (N.D. Cal. 2015), *aff’d*, 677 F. App’x 679 (Fed. Cir. 2017) (tailoring content based upon the time of day and location is abstract) and *Morsa v. Facebook, Inc.*, 77 F. Supp. 3d 1007, 1013 (C.D. Cal. 2014), *aff’d*, 622 F. App’x 915 (Fed. Cir. 2015) (concluding that targeting advertisements to certain consumers is no more than an abstract idea). In light of these precedents, we conclude that claim 1 equally recites an abstract idea.

Appellant’s argument that claim 1 requires “action by a processor that cannot practically be performed in the mind” (Appeal Br. 7) is unavailing because “purely mental processes can be unpatentable, even when performed by a computer, was precisely the holding of the Supreme Court in *Gottschalk v. Benson*.” *CyberSource*, 654 F.3d at 1375.

We are not persuaded by Appellant’s argument that “claim 1 resembles the claim found eligible in Example 39” of the Abstract Ideas Examples in the 2019 Revised Patent Subject Matter Eligibility Guidance (2019 PEG).⁴ Appeal Br. 7. The claim of Example 39 is directed to a computer-implemented method of training a neural network for facial detection comprising collecting a set of digital facial images, applying one

⁴ USPTO, Subject Matter Eligibility Examples: Abstract Ideas, available at https://www.uspto.gov/sites/default/files/documents/101_examples_37to42_20190107.pdf (January 7, 2019) (“2019 PEG”).

or more transformations to the images including mirroring, rotating, smoothing, or contrast reduction to create a modified set of digital facial images, creating first and second training sets, and training the neural network. 2019 PEG, 8. The claim in Example 39 does not recite an abstract idea because, among other things, the steps can “not practically be performed in the human mind.” *Id.* at 9.

We also find no parallel between claim 1 and claim 2 of Example 37 of the 2019 PEG because as discussed, contrary to Appellant’s argument (Appeal Br. 7), claim 1 recites multiple steps that can practically be performed in the human mind. “[T]he claimed step of determining the amount of use of each icon by tracking how much memory has been allocated to each application associated with each icon over a predetermined period of time,” in claim 2 of Example 37, cannot be “practically performed in the human mind, at least because it requires a processor accessing computer memory indicative of application usage.” 2019 PEG, 3.

Accordingly, we agree with the Examiner that claim 1 recites an abstract idea.

Step 2A, Prong Two

Having concluded that claim 1 recites a judicial exception, i.e. an abstract idea (Step 2A, Prong One), we next consider whether the claim recites additional elements that integrate the judicial exception into a practical application (Step 2A, Prong Two). 2019 Revised Guidance, 84 Fed. Reg. at 51. When a claim recites a judicial exception and fails to integrate the exception into a practical application, the claim is “directed to” the judicial exception. *Id.* A claim may integrate the judicial exception

when, for example, it reflects an improvement to technology or a technical field. *Id.* at 55.

The Federal Circuit has explained that “the ‘directed to’ inquiry applies a stage-one filter to claims, considered in light of the specification, 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 at 1346). 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.

Under Step 2A, Prong Two, the Examiner identifies the recitation of “*online system*” and “*an application in which the content item is presented*” as elements in addition to the abstract idea. Final Act. 5, 8. The Examiner finds that these additional elements comprise generic computer components described at a high level of generality, which “are simply utilized as tools to implement the abstract idea.” *Id.* (citing Spec. ¶¶ 16, 17, 54–57, Fig. 1). According to the Examiner, beyond generally linking the use of the abstract idea to a technological environment, the claims are “implementing a commercial solution to a commercial problem . . . not a technical one.” *Id.* (citing Spec. ¶¶ 2–10, 25, 26, 51). The Examiner considers the claim as a whole and determines the additional elements do not reflect an improvement in the functioning of a computer or technology and fail to integrate the abstract idea into a practical application. *Id.* at 9.

Appellant asserts that “the claimed invention is directed to an improvement over conventional content selection or distribution systems by accounting for characteristics of a content item along with how the content

item is to be presented, and where the content item is to be presented, to more effectively select content for presentation in a context to maximize interaction with the content.” Appeal Br. 10; Reply Br. 5. According to Appellant, “claim 1 is like eligible claim 1 of Example 42 . . . [because beyond] merely storing information, providing access, and storing the updated information . . . it converted it, generated a message, and transmitted it.” Appeal Br. 10; Reply Br. 6. Appellant argues that similarly, “claim 1 includes steps with additional technical detail that is sufficient to integrate . . . the alleged judicial exception into a practical application.” Appeal Br. 10. We disagree.

Claim 1 in Example 42 is directed to solving the problem of format inconsistencies in medical records that are stored locally at various medical offices preventing the records from being shared easily from one office to another. 2019 PEG, 18. The format inconsistencies of the medical records is a technical problem that the claimed invention of Example 42 solves by converting the various medical records into a standardized format. *Id.* at 18–19. Unlike Example 42, the claimed invention does not solve a technical problem. Rather, as the Examiner points out, Appellant’s invention is intended to solve a commercial problem; that is, predicting performance of content items such as advertisements presented to users based on circumstances or contexts in which those advertisements are presented to users in order to increase future opportunities to obtain increased revenue from advertisers. *See Spec.* ¶¶ 4, 9–10.

We acknowledge that “[s]oftware can make non-abstract improvements to computer technology just as hardware improvements can, and sometimes the improvements can be accomplished through either

route.” *Enfish*, 822 F.3d at 1335. However, “to be directed to a patent-eligible improvement to computer functionality, the claims must be directed to an improvement to the functionality of the computer or network platform itself.” *Customedia Techs., LLC v. Dish Network Corp.*, 951 F.3d 1359, 1365 (Fed. Cir. 2020) (citing *Enfish*, 822 F.3d at 1336–39). Claim 1 recites an online system arranged in no particular way to perform basic functions of collecting and storing information, determining a score, identifying a context, and retrieving a stored score. The Specification’s description of the online system and an application in which a content item is presented makes clear that generic computer components are utilized as tools to implement the abstract idea in an online environment, rather than improving the functioning of the computer system or other technology. *See* Spec. ¶¶ 15–19, 54–57. As a whole, claim 1 does no more than use instructions to implement the abstract idea on the generic online system.

Accordingly, we determine that claim 1 lacks any additional elements sufficient to integrate the abstract idea into a practical application.

Step Two of the Alice Framework (2019 Revised Guidance, Step 2B)

We next consider whether claim 1 recites additional elements, individually, or as an ordered combination, that provide an inventive concept. *Alice*, 573 U.S. at 217–18. The second step of the *Alice* test is satisfied when the claim limitations involve more than the performance of well-understood, routine, and conventional activities previously known to the industry. *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1367 (Fed. Cir. 2018); *see* 2019 Revised Guidance, 84 Fed. Reg. 56 (explaining that the second step of the *Alice* analysis considers whether a claim adds a specific limitation

beyond a judicial exception that is not “well-understood, routine, conventional” activity in the field).

Appellant argues that the Examiner is “specifically ignoring the inventive concepts that are supposed to be considered when determining whether the inventive concept amounts to significantly more.” Appeal Br. 10–11. Appellant reproduces steps (b), (c), (e), and (f) and argues that these steps in combination provide “multiple additional elements with technical details of the claim that are clearly significantly more than the alleged judicial exceptions identified.” *Id.* at 11–12. We are not persuaded because “the relevant inquiry is not whether the claimed invention as a whole is unconventional or non-routine.” *BSG Tech LLC v. BuySeasons, Inc.*, 899 F.3d 1281, 1290 (Fed. Cir. 2018). And, a claim does not gain subject matter eligibility solely because it is narrowed or limited to Appellant’s alleged improvement over existing processes. *See, e.g., Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1321 (Fed. Cir. 2016) (“A narrow claim directed to an abstract idea, however, is not necessarily patent-eligible.”). The question is whether the claim includes additional elements, i.e., elements other than the abstract idea itself, that “‘transform the nature of the claim’ into a patent-eligible application.” *Alice Corp.*, 573 U.S. at 217 (quoting *Mayo*, 566 U.S. at 79, 78).

We agree with the Examiner that claim 1 lacks additional elements that provide an inventive concept. As discussed, the additional elements recited in claim 1 comprise the “*online system*,” which are described as conventional computer components that perform well-understood, routine, or conventional functions of collecting and storing, determining, identifying, and retrieving information at a high level of generality. Spec. ¶ 19 (“[T]he

online system 140 may include additional, fewer, or different components for various applications. Conventional components such as network interfaces, security functions, load balancers, failover servers, management and network operations consoles, and the like are not shown so as to not obscure the details of the system architecture.”). *See, e.g., buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014) (“That a computer receives and sends the information over a network—with no further specification—is not even arguably inventive.”); *In re Katz Interactive Call Processing Patent Litig.*, 639 F.3d 1303, 1316 (Fed. Cir. 2011) (Absent a possible narrower construction of the terms processing, receiving, and storing functions can be achieved by any general purpose computer without special programming). And the recitation of “*an application in which the content item is presented*” simply appends well-understood, routine conventional activity of displaying information to a conventional mobile device previously known to the industry to the judicial exception.

As an ordered combination, the additional elements provide no more than when they are considered individually. *Alice*, 573 U.S. at 225. They recite generic computer components that perform well-understood and conventional functions. They are used as tools to implement the judicial exception. *See SAP Am.*, 898 F.3d at 1169–70 (limitations of various databases and processors did not improve computers but used already available computers and available functions as tools to execute the claimed process); *Inventor Holdings LLC v. Bed Bath & Beyond, Inc.*, 876 F.3d 1372, 1378 (Fed. Cir. 2017) (considering the method steps of the representative claims as an “ordered combination” reveals that they “amount to ‘nothing significantly more’ than an instruction to apply [an] abstract

idea” using generic computer technology).

Accordingly, we agree with the Examiner that claim 1 lacks an inventive concept sufficient to transform the abstract idea into patent-eligible subject matter. We sustain the rejection of independent claim 1 as directed to patent ineligible subject matter under 35 U.S.C. § 101, and claims 2–20, which fall with claim 1.

35 U.S.C. § 103

We are persuaded by Appellant’s argument that Shay, on which the Examiner relies (*see* Ans. 11), does not disclose

maintaining information at the online system describing contexts in which content items are presented to users of the online system, a context in which a content item is presented to a user identifying a combination of: content presented in conjunction with the content item, content presented prior to presentation of the content item, an action performed by a user prior to presentation of the content item, an application in which the content item is presented

as recited in limitation (b) of claim 1. Appeal Br. 12. In particular, Appellant argues “[t]he information described by Shay does not maintain a context identifying ‘a combination of’” various contexts in which the content item is presented, “but instead accounts for prior user actions to determine a likelihood of a user performing an initial action and subsequent actions with an advertisement.” *Id.* at 13–14 (citing Shay ¶¶ 13, 41, 42).

According to Appellant:

This likelihood of user action does not identify a context in which the advertisement is presented that identifies “a combination of content presented in conjunction with the content item, content presented prior to presentation of the content item, an action performed by a user prior to presentation of the content item, an application in which the content item is presented, and a format in which the content

item is presented,” as claimed, but maintains prior user actions with content in association with the user and the content with which the user interacted.

Id. at 14.

In response to Appellant’s argument, the Examiner “is unclear as to why [the] combination of Shay in view of Sarukkai does not teach the argued claim limitation” and finds Appellant’s arguments “lack particularity” and “to be mere allegation.” Ans. 10. For example, the Examiner finds Shay’s description of an “ad action for presenting an advertisement associated with a flight simulator game application” to “an application in which the content item is presented” as part of the identified combination of the claimed context. *Id.* at 12 (citing Shay ¶¶ 42, 44) (emphasis omitted). We are persuaded of error.

In describing limitation (b), the Specification discloses that “the online system 140 maintains various contexts in which a content item is presented, or is to be presented, to categorize presentation of various content items.” Spec. ¶ 27.

[T]he online system 140 maintains associations between different sets of contexts in which a content item was presented or is to be presented and different applications. For example, the online system 140 stores a set of contexts in which a content item was presented by an application in association with an identifier of the application, identifying contexts in which the application corresponding to the identifier of the application is capable of presenting content. As certain contexts may apply to certain applications and not to other applications, associating sets of contexts with identifiers of different applications allows the online system 140 to more efficiently identify contexts in which a content item is to be presented or in which a content item was presented by determining an application in which the content item was presented or in which the content item is to be

presented and selecting from the set of contexts associated with the determined application.

Id. ¶ 45.

As Appellant points out, “the ad action described by Shay is unrelated to an application in which the content item is presented, but describes the subject matter of the advertisement being displayed.” Reply Br. 9 (citing Shay ¶ 41). Paragraph 41 of Shay discloses that “an ad action for presenting an advertisement associated with a flight simulator game application to a user is determined **310** by multiplying the likelihood that the user installs the application by an amount of money the user is expected to spend in the application if installed it.” To determine ad action for presentation of the ad to the user, Shay retrieves data describing interactions previously performed by the user and analyzes ad information to determine a likelihood of the user interacting with the ad. Shay ¶ 42; *see also id.* ¶ 44 (“[T]he predicted amount of interaction with the object associated with the advertisement is the determined ad action for presenting the advertisement to the user.”). The Examiner’s finding fails to disclose maintaining information identifying an application in which the content item is presented as understood in light of the Specification. Moreover, we agree that the cited portions of Shay do not disclose maintaining a context in which a content item is presented that *identifies a combination* of content presented in conjunction with the content item, content presented prior to presentation of the content item, an action performed by a user prior to presentation of the content item, and an application in which the content item is presented, as required by claim 1. *Cf.* Final Act. 12–13.

Accordingly, we do not sustain the rejection of independent claim 1 as unpatentable over Shay and Sarukkai, and independent claim 13, which

recites a similar limitation and is rejected based on the same deficient finding in Shay. *See* Final Act. 16. We also do not sustain the rejection of claims 4, 7–12, 15, and 17–20, which depend from claims 1 and 13. For the same reasons, we do not sustain the rejection of dependent claims 2, 3, 5, 6, 14, and 16 because the Examiner’s reliance on Tofallis does not remedy the deficiency in Shay.

CONCLUSION

The Examiner’s decision to reject claims 1–20 is affirmed.

Decision summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
13–20	112(b)	Indefiniteness	13–20	
1–20	101	Eligibility	1–20	
1, 4, 7–13, 15, 17–20	103	Shay, Sarukkai		1, 4, 7–13, 15, 17–20
2, 3, 5, 6, 14, 16	103	Shay, Sarukkai, Tofallis		2, 3, 5, 6, 14, 16
Overall Outcome			1–20	

TIME PERIOD FOR RESPONSE

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