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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte RITWIK SINHA, SANKET VAIBHAV MEHTA,
TAPAN BOHRA, and ADIT KRISHNAN

Appeal 2019-000260
Application 14/553,911
Technology Center 3600

Before JAMES P. CALVE, WILLIAM A. CAPP, and
JEREMY M. PLENZLER, *Administrative Patent Judges*.

CALVE, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the decision of the Examiner to reject claims 1–8 and 21–32, which are all the pending claims. Appeal Br. 2. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ “Appellant” refers to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies Adobe Inc. as the real party in interest. Appeal Br. 2.

CLAIMED SUBJECT MATTER

Claims 1, 21, and 29 are independent. Claim 1 is reproduced below.

1. In a digital media environment for determining a sequence of digital or mixed digital and non-digital communication channels for use in a digital or mixed multi-channel marketing campaign based on digital information concerning the digital and non-digital communication channels, a method comprising:

receiving historic marketing sequence data for multiple sequences, each sequence indicating communication channels included in the sequence, an order for IO those communication channels in the sequence, a category of the sequence, and a success of the sequence;

receiving a desired category for a desired multi-channel marketing campaign;

correlating the desired category to one or more categories of the sequences of the historic marketing sequence data;

reducing the historic marketing sequence data into filtered sequence data that includes multiple frequent maximal sequences that satisfy an objective based on the desired category, and an antecedent sequence for each of the frequent maximal sequences; and

determining from the filtered sequence data a sequence for the desired category for the desired multi-channel marketing campaign, the determining based on a confidence for each of the multiple frequent maximal sequences based on the corresponding antecedent sequence, the sequence for the desired category including multiple determined communication channels and a determined order for the multiple determined communication channels.

REJECTION

Claims 1–8 and 21–32 are rejected as directed to a judicial exception to 35 U.S.C. § 101.

ANALYSIS

Section 101 of the Patent Act states:

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

35 U.S.C. § 101. This provision contains an implicit exception: “Laws of nature, natural phenomena, and abstract ideas are not patentable.” *Alice Corp. Pty. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014).

To distinguish patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications, we first determine whether the claims are directed to a patent-ineligible concept. *Id.* at 217. If they are, we consider the elements of each claim, individually and “as an ordered combination,” to determine if additional elements “‘transform the nature of the claim’ into a patent-eligible application” as an “inventive concept” sufficient to ensure the claims in practice amount to significantly more than a patent on the ineligible concept itself. *See id.* at 217–18.

The USPTO has issued guidance about this framework. 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) (“Revised Guidance”). Under the Revised Guidance, to determine whether a claim is “directed to” an abstract idea, we evaluate whether the claim recites (1) any judicial exceptions, including certain groupings of abstract ideas listed in the Revised Guidance (i.e., mathematical concepts, certain methods of organizing human activities 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) (9th ed. rev. 08.2017 Jan. 2018) (“MPEP”)). *Id.* at 52–55.

Only if a claim (1) recites a judicial exception and also (2) does not integrate that exception into a practical application, do we then consider 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. *Id.* at 56.

Patent Eligibility of Claims 1–8 and 21–32

Appellant argues the claims as a group. Appeal Br. 11–29. We select claim 1 as representative of the group. *See* 37 C.F.R. § 41.37(c)(1)(iv).

Examiner’s Determination

The Examiner finds that claim 1 recites “receiving historic marketing sequence data for multiple sequences,” “receiving a desired category for a desired multi-channel marketing campaign,” “correlating the desired category to one or more categories of the sequences in the sequences of the historic marketing” sequence data based on a desired category, and “determining” “a sequence for the desired category for the desired multi-channel marketing campaign” “based on” the available data, the sequence including an order, and a plurality of channels. Final Act. 2. The Examiner determines these steps recite “certain methods of organizing human activity” for “advertising, marketing or sales activities or behaviors.” *Id.*; Ans. 3–4. The Examiner determines that the correlating and reducing steps are mental steps. Ans. 4. The Examiner determines claim 1 lacks additional elements beyond the abstract idea to provide a practical application and uses a generic computer (rather than a particular machine) to perform the idea without a transformation, reduction, or meaningful limit. Final Act. 3–4; Ans. 5–6.

Appellant's Contentions

Appellant argues that the claims are to a statutory category but they are not directed to a judicial exception under the Revised Guidance. Appeal Br. 11–12. Appellant argues that Example 39 of the 2019 Patent Eligibility Guidance indicates a claim that is not a mental process. *Id.* at 13. Appellant argues that claim 1 includes features that cannot be performed practically in the human mind including (1) receiving historic marketing sequence data for multiple sequences, each sequence indicating communication channels in the sequence, an order for those communication channels, a category of the sequence, and a success of the sequence, (2) reducing the historic marketing sequence data into filtered sequence data that includes multiple frequent maximal sequences that satisfy an objective based on the desired category, and an antecedent sequence for each of the frequent maximal sequences, and (3) determining from the filtered sequence data a sequence for the desired category for the desired multi-channel marketing campaign, the determining based on a confidence for each of the multiple frequent maximal sequences based on the corresponding antecedent sequence, the sequence for a desired category including multiple determined communication channels and a determined order for the multiple determined communication channels. *Id.* at 14. Appellant also contends that the claims are not directed to performing marketing activities under the Revised Guidance. *Id.* at 15–17.

Appellant argues that claim 1 provides a practical application because it determines a best marketing sequence and order for multiple determined communication channels out of billions of sequences that a marketer cannot analyze. *Id.* at 19–20. Appellant asserts that historic, maximal, antecedent, and filtered sequences impose meaningful limits on the claim. *Id.* at 20.

Step 1: Is Claim 1 Within a Statutory Category?

Claim 1 recites “[a] method” which is within a statutory category of 35 U.S.C. § 101, namely, a process. *See* Ans. 3; Appeal Br. 11. Therefore, we next consider whether it recites a judicial exception.

Step 2A, Prong 1: Does Claim 1 Recite a Judicial Exception?

We determine that claim 1 recites an abstract idea, which the Revised Guidance enumerates as certain methods of organizing the human activity of commercial interactions of advertising, marketing, and sales activities and mental processes of the human mind. Revised Guidance, 84 Fed. Reg. at 52.

Claim 1 determines sequences of digital/mixed digital and non-digital communication channels to use in a digital/mixed multi-channel marketing campaign. *See* Spec. ¶¶ 3, 18. “[C]ommunication channels” are digital and non-digital media such as billboards, television ads, radio, newspaper, phone calls (personal or computer-aided), physical stores (instore), and computer-enabled channels such as direct web visit, display ad view, display ad clicked, opened email, clicked email link, social media, paid search, organic search, online stores, direct messaging, and texting. *See id.* ¶ 22.

The first step of “receiving historic marketing sequence data for multiple sequences, each sequence indicating communication channels included in the sequence, an order for those communication channels in the sequence, a category of the sequence, and a success of the sequence” recites this abstract idea as it obtains data related to previous marketing activities conducted for a category/categories of goods and services and a success of each ordered sequence of communication channels. Appellant’s Figure 1 is reproduced below to illustrate this method of organizing marketing, sales, and advertising activities in a sequence of channels for a category of goods.

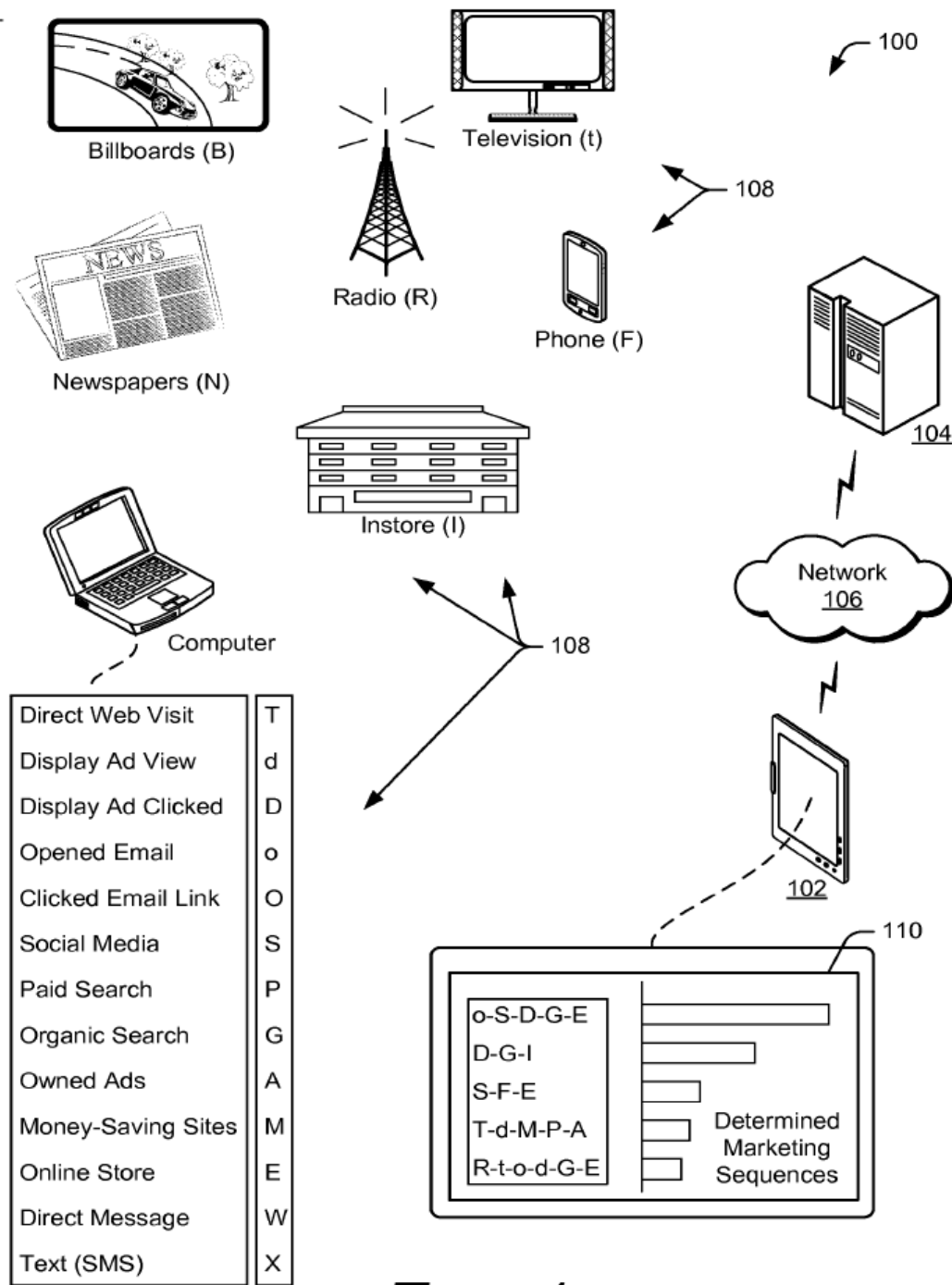


FIG. 1

Figure 1 illustrates media environment 100 and computing device 104, which receives marketing data as sequential orders and successes and builds historic data for sequences and product categories. Spec. ¶¶ 20–23.

Receiving historic marketing activity data in channel order sequence with its category and success organizes this marketing and sales activity as extra-solution activity. Claim 1 does not recite how the historic marketing activity data is organized into such sequence order by category and success.

The next steps recite “receiving a desired category for a desired multi-channel marketing campaign” and “correlating the desired category to one or more categories of the sequences of the historic marketing sequence data.” In these steps, a marketer can select a category at local computer 102, which passes the request to remote computer 104. *Id.* ¶ 21. Remote computer 104 determines one or more marketing sequences that are likely to be successful based on the desired category and historic data and passes those to computer 102 and its interface 110. *Id.* As one example, the top five sequences for an *after-market car parts* category selected by a marketer are provided to user interface 110 as “Determined Marketing Sequences” with predicted success for each sequence in Figure 1. *Id.* ¶ 23. The top sequence is “o-S-D-G-E,” which has the highest predicted success using its multi-channel marketing campaign order: Opened Email, Social Media, Display Ad Clicked, Organic Search, and Online Store. *Id.* Communication channels 108 are listed with an associated symbol for visual brevity in Figure 1. *Id.* ¶ 22.

The “correlating” step tries to match the historical marketing data to a requested “desired category.” *Id.* ¶ 18. Sequencer 210 matches a “desired category” with one or more same or similar categories that historically were successful. *Id.* ¶ 37. Therefore, if a desired category of “selling pet massage services” is unlikely to have sufficient historic data, similar categories may be used. Similar categories can include high-end cat scratching posts, high-end dog training classes, and high-end collars and pet clothing. *See id.* ¶ 51.

The limitation of “reducing the historic marketing sequence data into filtered sequence data that includes multiple frequent maximal sequences that satisfy an objective based on the desired category” recites the same abstract idea of certain methods of organizing human activity for marketing, sales, and advertising activities and mental processes identified above.

Table 1 of Appellant’s disclosure is reproduced below to illustrate how historic marketing sequence data can be filtered to provide reduced sequence data as a mental process and to organize such activity.

Table 1

| Customer ID | Sequence | Success |
|-------------|-------------|---------|
| 1 | O-W-A-D | Yes |
| 2 | D-P-A-M-W | Yes |
| 3 | D-P-A | Yes |
| 4 | P-M-A-O-D-W | No |
| 5 | S-W-A-G | Yes |
| 6 | O-P-M-A-M-W | No |

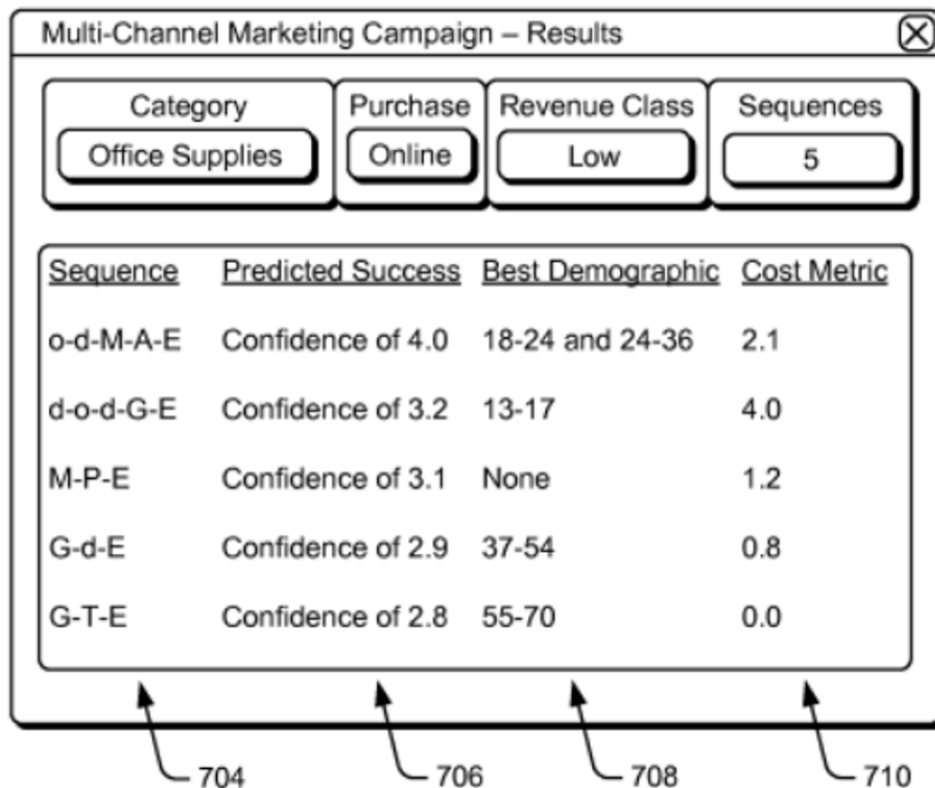
Table 1 above illustrates six multi-channel ordered sequences that are provided from historic marketing sequence data 212. *Id.* ¶ 36. Table 1 also indicates whether each sequence was successful. A product sale is not the sole measure of “success.” *Id.* ¶ 24. A successful outcome also may include a positive impression made by a user selecting to watch a video about a product or completing a survey about a subject of interest to the marketer’s company. *Id.* ¶¶ 25, 26.

The sequence P, A, W is a “frequent sequence” because it has support greater than or equal to a user-specified minimum support. *Id.* ¶ 40. In this example, the minimum support specified for this category is 0.2. P, A, W is *frequent* because it has a support of 0.5. It is used in three of six sequences ($3/6 = 0.5$) and thus exceeds the minimum support of 0.2. *See id.* ¶¶ 39, 40.

P, A, W is a “frequent *maximal* sequence” because it is not contained in another “frequent sequence”. *Id.* ¶ 40. The sequence P, A is a “frequent sequence” whose support of 4/6 is greater than 0.2, but it is not a “frequent *maximal* sequence” because it is contained in the P, A, W sequence. *Id.*

This filtering organizes marketing, sales, and advertising activities. It is a mental process performable in the human mind. Historic multi-channel marketing activities are filtered into “multiple frequent maximal sequences” that satisfy an objective (i.e., a marketing goal, *see id.* ¶ 41) for a category.

The final step of “determining from the filtered sequence data a sequence for the desired category for the desired multi-channel marketing campaign, the determining based on a confidence for each of the multiple frequent maximal sequences based on the corresponding antecedent sequence” recites this same abstract idea. We reproduce Appellant’s Figure 7 below to illustrate this organizing activity of the abstract idea.



Appellant’s Figure 7 above illustrates a determination of the five best sequences 704 for a desired category (Office Supplies), the purchase manner (Online), and the revenue class (Low). *Id.* ¶ 54. The predicted success 706 is shown as a statistical measure of confidence but may be provided through a ranking or a percentage likelihood. *Id.* ¶ 57.

The claimed “confidence for each of the multiple frequent maximal sequences” may be determined based on a statistical measure of confidence such as a confidence interval with upper and lower confidence bounds and a rank based on a mid-point of these upper and lower bounds. *Id.* ¶ 53. It may be calculated as a ratio of support for a multiple frequent maximal sequence (described above for Table 1) and an antecedent sequence. *See id.* ¶¶ 40–42. An “antecedent sequence” is some sequence of channels less than a purchase sequence. *See id.* ¶ 41. Support for an antecedent sequence is computed in a similar manner to the frequent maximal sequence support as described above for Table 1. *See id.* ¶ 42. This process also involves mental processes that can be performed in the human mind or by a person with a pen and paper.

Merely filtering historic marketing sequence data in multiple frequent maximal sequences to satisfy an objective, desired category, and antecedent sequence, without any details of the filtering process, also recites an abstract idea. Similar claims involving a content filtering system for filtering content retrieved from an Internet computer network was considered an abstract idea in *Bascom Global Internet Svcs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016). The court held that “filtering content is an abstract idea because it is a longstanding, well-known method of organizing human behavior, similar to concepts previously found to be abstract.” *Id.* at 1348.

Claim 1's method similarly receives historic marketing sequence data in ordered communication channels by category and filters that data to select multiple frequent maximal sequences that satisfy an objective of a category and then determines a sequence with a particular confidence and order for a desired category. Essentially, it targets a marketing sequence over multiple communication channels to persons interested in a category of products or services of a revenue class (high, medium, low), and purchase venue (online, instore, other). *See* Spec. ¶¶ 18, 37–42, 49–52, Fig. 6. The method attempts to optimize selection of multi-channel marketing campaigns by determining a confidence for each filtered, ordered multiple frequent maximal sequence. The Specification describes a step of selecting the best/five best sequences in a category based on a likelihood of success of each sequence. Spec. ¶ 54, Fig. 7. However, claim 1 does not recite this optimization. It determines a sequence “based on” a confidence, desired category, and determined order.

Similar claims to providing web pages customized to a user based on information known about the user and navigation data were held to recite an abstract idea. *See Intellectual Ventures ILLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1369–70 (Fed. Cir. 2015) (holding that a claim relating to customizing information and tailoring content based on information known about the user and navigation data recites an abstract idea).

Here, claim 1 recites a similar method that customizes multi-media marketing data provided to groups based on information known about their activities of visiting a website, clicking a displayed ad, opening an email, clicking an email link, and performing an organic search on the Internet. *See* Spec. ¶¶ 22, 23, 30, 35, 52, 77, Fig. 1. Sequences may be selected based on other information known about the groups such as demographics. *Id.* ¶ 56.

Targeting marketing activities through different communication channels also recites an abstract idea. *See Intellectual Ventures I*, 792 F.3d at 1369–70 (holding tailored newspaper inserts and website content based on information known about a user recites an abstract idea); *Bridge and Post, Inc. v. Verizon Commc'ns, Inc.*, 778 F. App'x 882, 887 (Fed. Cir. 2019) (“Targeted marketing is a form of ‘tailoring information based on [provided] data,’ which we have previously held is an abstract idea.” and “[t]argeted marketing and market segmentation were originally developed to increase effectiveness of advertisements placed in traditional media such as radio, television, and printed newspapers and magazines.”); *Customedia Tech., LLC v. Dish Network Corp.*, 951 F.3d 1359, 1362–63 (Fed. Cir. 2020) (holding claims to a data delivery system providing multimedia data from a remote server including advertising data recited “the abstract idea of using a computer to deliver targeted advertising to a user, not to an improvement in the functioning of a computer.”).

Here, the claimed method selects such channels of communication to target marketing for a desired category. The communication channels of a sequence include television, radio, newspapers, physical and online stores, and web content such as web pages. *See Spec.* ¶ 22, Fig. 1.

Optimizing a multi-channel marketing campaign based on historic marketing sequence data for categories and success recites an abstract idea. In *OIP Technologies, Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1361–62 (Fed. Cir. 2015), a method of selecting the optimal price for a product by testing prices sent over a network, gathering statistics of how customers reacted to offers testing the prices, estimating outcomes, and selecting and offering a new price based on the estimated outcome recited an abstract idea.

The court held that the claims recited “the concept of offer-based price optimization,” which concept is similar to fundamental economic concepts held to be abstract ideas. *Id.* at 1362. Here, claim 1 recites a similar method in which historic data is received for different sequences of previous multi-channel marketing campaigns in different categories and the success of those campaigns, which are similar to the price surveys in *OIP*. This historical marketing sequence data is filtered to determine a sequence “based on a confidence.” *See Spec.* ¶¶ 42, 53. Such sequence may include a best/set of best sequences for a category or a *trial run* (similar to a survey) (*see id.* ¶¶ 37–42, 54), but claim 1 does not require this level of optimization.

Such steps also are similar to claims that recited a mental process in *CyberSource Corporation v. Retail Decisions, Inc.*, 654 F.3d 1366 (Fed. Cir. 2011). There, the claims recited a method of detecting credit card fraud in online transactions. The first step obtained information about transactions that used an Internet address identified with a credit card transaction and “can be performed by a human who simply reads records of Internet credit card transactions from a preexisting database.” *CyberSource*, 654 F.3d at 1372. The second step constructed a *map* of credit card numbers and can be performed by a person writing down a list of credit card transactions made from an IP address. *Id.* (“There is no language in claim 3 or in the ’154 patent’s specification that requires the constructed ‘map’ to consist of anything more than a list of a few credit card transactions.”). The third step used the map of credit card numbers to determine if a credit card transaction was valid. It can be performed in the human mind by a person observing that numerous transactions used different credit cards with different user names and billing addresses originating at the same IP address. *Id.* at 1373.

Here, claim 1 recites similar mental steps. The method receives *data* for historic marketing sequences of communication channels of categories. Appellant’s Figure 1 and Table 1, which are reproduced above, illustrate that a person could receive such ordered sequences and record those pertaining to a category like the IP addresses received in *CyberSource*, 654 F.3d at 1372.

A person could determine from the list of sequences, which sequences were “multiple frequent maximal sequences” that satisfy an objective such as a minimum support level with a desired confidence of success by making the basic calculations described in the Specification for Figure 1 and Table 1 discussed above. *See* Spec. ¶¶ 20–25, 31, 36–42; *see also Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1354 (Fed. Cir. 2016) (“In a similar vein, we have treated analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, as essentially mental processes within the abstract-idea category.”); *In re TLI Commc’ns LLC Patent Litig.*, 823 F.3d 607, 613 (Fed. Cir. 2016) (“[T]he claims, as noted, are simply directed to the abstract idea of classifying and storing digital images in an organized manner. . . . [W]e have applied the ‘abstract idea’ exception to encompass inventions pertaining to methods or organizing human activity.”); *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1350 (Fed. Cir. 2014) (finding “a process of organizing information through mathematical correlations” is an abstract idea).

Example 39 of the 2019 Patent Eligibility Guidelines does not dictate a different result as Appellant contends. *See* Appeal Br. 13. Appellant is correct that Example 39 indicates the claim does not recite a mental process because the steps are not practically performed in the human mind. *Id.* However, the claim is for *training a neural network* unlike claim 1 here.

We agree with the Examiner that Example 39 includes a claim for training a neural network for facial detection. The claim is not similar to the method recited in claim 1 here and does not recite any of the abstract ideas enumerated in the Revised Guidance. *See* Final Act. 5; Ans. 4.

Unlike claim 1 of this appeal, the claim in Example 39 recites:

A computer-implemented method of training a neural network for facial detection comprising:

- collecting a set of digital facial images from a database;
- applying one or more transformations to each digital facial image including mirroring, rotating, smoothing, or contrast reduction to create a modified set of digital facial images;
- creating a first training set comprising the collected set of digital facial images, the modified set of digital facial images, and a set of digital nonfacial images;
- training the neural network in a first stage using the first training set;
- creating a second training set for a second stage of training comprising the first training set and digital non-facial images that are incorrectly detected as facial images after the first stage of training; and
- training the neural network in a second stage using the second training set.

Subject Matter Eligibility Examples: Abstract Ideas, 8–9 (Jan. 7, 2019).

Collecting a set of digital facial images and transforming each image by mirroring, rotating, smoothing, and/or contrast reduction effects physical transformations similar to the patent-eligible claims in *McRO, Inc. v. Bandai Namco Games America*, 837 F.3d 1299, 1314–15 (Fed. Cir. 2016); *see SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1167 (Fed. Cir. 2018) (noting the claims in *McRO* created something physical). Here, claim 1 receives historic marketing sequence data and performs mental process steps to filter that data as illustrated in Appellant’s Figure 1 and Table 1 discussed above.

Nor does claim 1 here involve steps of training a neural network with digital images or any other data through stages or otherwise. Claim 1 simply collects and filters sequence data in steps that are recited at a high level of generality. *See Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1317–18 (Fed. Cir. 2016) (holding claims to a database of business rules applied to email messages to determine a set of actions to be applied to the email message to control delivery of the email message recited an abstract idea because “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.”); Revised Guidance, 84 Fed. Reg. at 52 & n.14; MPEP § 2106.04(a)(2); Ans. 4.

The Examiner did not determine that claim 1 recites an abstract idea because it manipulates and shares information as Appellant alleges. Appeal Br. 15. The Examiner determined that claim 1 did not recite any additional claim limitations that amounted to significantly more than the abstract idea because it recited generic computer functions of manipulating information and sharing information with persons and/or other devices. Final Act. 3–4. We discuss this issue in Prong Two of Step 2A below.

Nor did the Examiner rely on *In re Ferguson*, 558 F.3d 1359 (Fed. Cir. 2009) to determine that claim 1 recites a method of organizing human activity for advertising, marketing, and sales activities. Ans. 5; Final Act. 2. *Ferguson* addressed a method of organizing business or legal relationships in the structuring of a sales force (or marketing company). *Ferguson*, 558 F.3d at 1364; *see* Revised Guidance, 84 Fed. Reg. at 52 n.13.

Accordingly, we determine that claim 1 recites certain methods of organizing human activity and mental processes identified above.

Step 2A, Prong Two: Integration into a Practical Application

We next consider whether claim 1 recites additional elements that integrate the abstract idea into a practical application. Revised Guidance, 84 Fed. Reg. at 54 (Revised Step 2A, Prong Two). Appellant argues that the claims are integrated into a practical application because they recite practical applications. Appeal Br. 19. Appellant argues that claim 1 determines a sequence of multiple determined communication channels in a determined order, and the Specification provides examples of ten different channels. *Id.* Appellant argues that the method provides a best sequence, or multiple trial sequences, that are likely to be successful for the desired category, and a marketer cannot determine a best marketing sequence with large numbers of potentially ten billion possible sequences. *Id.* at 19–20. Appellant further argues that the claims impose a meaningful limit on advertising, marketing, or sales activities or behaviors by receiving historic sequence data, reducing it into filtered sequence data with multiple frequent maximal sequences and an antecedent sequence, and determining a sequence based on a confidence. *Id.* at 20. Appellant also asserts that Example 42 of the 2019 PEG Examples illustrates that claim 1 is integrated into a practical application. *Id.* at 21–22.

We agree with the Examiner that these limitations of claim 1 recite the abstract idea identified in Prong One. Claim 1 does not recite any additional elements to integrate the abstract idea into a practical application. *See* Final Act. 3. The Examiner also determines that the limitations of claim 1 do not improve the functioning of a computer, use the abstract idea with a particular machine that is integral to the claim, transform or reduce a particular article to a different state or thing, or apply the abstract idea in a meaningful way to link it to a particular technological environment. Ans. 6. We agree.

“It has been clear since *Alice* that a claimed invention’s use of the ineligible concept to which it is directed cannot supply the inventive concept that renders the invention ‘significantly more’ than that ineligible concept.” *BSG Tech LLC v. Buyseasons, Inc.*, 899 F.3d 1281, 1290 (Fed. Cir. 2018); *see id.* at 1291 (“As a matter of law, narrowing or reformulating an abstract idea does not add ‘significantly more’ to it.”); *see also RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017) (“Adding one abstract idea (math) to another abstract idea (encoding and decoding) does not render the claim non-abstract.”); *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1151 (Fed. Cir. 2016) (“But, a claim for a *new* abstract idea is still an abstract idea.”); *Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1335 (Fed. Cir. 2015) (holding claims that improved an abstract idea but did not recite the supposed computer improvements were not patent eligible).

The claimed “historic marketing sequence data,” “communication channels,” category and success of the sequence, “multi-channel marketing campaign,” “filtered sequence data” with “multiple frequent maximal sequences,” “antecedent sequence,” “a confidence,” and “antecedent sequence” of claim 1 all recite aspects of the abstract idea identified above under Prong One. Thus, they cannot supply an additional element(s) to integrate that abstract idea into a practical application.

Appellant’s assertion that the technique can solve billions of possible sequences to determine the best possible sequence is not commensurate with the scope of claim 1 and therefore is not persuasive that claim 1 includes an additional element sufficient to integrate the judicial concept into a practical application. Stated simply, there is no requirement in claim 1 to process a billion sequences or to identify or select a best sequence.

Claim 1 simply recites “receiving historic marketing sequence data for multiple sequences” and “reducing the historic marketing sequence data into filtered sequence data that includes multiple frequent maximal sequences.” These steps recite an abstract idea as discussed above. “[D]etermining from the filtered sequence a sequence for the desired category . . . based on a confidence . . . based on the corresponding antecedent sequence . . . and a determined order for the multiple determined communication channels” also recites this abstract idea rather than advances in computers or networks. *See Ericsson Inc. v. TCL Commc’n Tech. Holdings Ltd.*, 955 F.3d 1317, 1325 (Fed. Cir. 2020) (holding that the specification must always yield to the claim language when identifying the true focus of a claim).

Claim 1 does not determine a *best* sequence for a category. The Specification merely describes sequencer 210 “find[ing] the best *or better* sequences likely to lead to a certain objective [to] . . . give[] a *measure of the chance* of this objective being satisfied by the sequence.” Spec. ¶ 42 (emphasis added). The Specification thus describes embodiments providing sequences *likely to lead* to certain objectives with a *measure of chance* of an objective being satisfied. *Id.* Other embodiments describe sequencer 210 providing “the five best sequences for the desired category” or “the best sequences for that demographic” (*id.* ¶¶ 54, 56), but claim 1 does not recite these features or limit its scope to determining only the best sequence(s) for an objective in a particular way. *See Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 913 (Fed. Cir. 2004) (“[I]t is improper to read limitations from a preferred embodiment described in the specification—even if it is the only embodiment—into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited.”).

The claimed “digital media environment” is claimed generically. It is described in the Specification as comprising generic computer and network communication elements as well. Appellant’s Figure 1 illustrates generic components of network 104, user device 102, and remote computer 104. Spec. ¶ 20. “[R]emote computing device 104 receives data about marketing sequences and builds, over time, historic data for these various sequences, as well as the category of products, services, and so forth.” *Id.* ¶ 21.

The “communication channels” are claimed and described generically to communicate digital and non-digital information. *See id.* ¶ 22, Fig. 1. Marketers may use some or all available communication channels 108. *Id.* ¶ 32. There is no indication that Appellant has improved the communication channels or used them in an innovative way beyond their generic function of conveying data. Channel order 218 is the order of communication channels 216 in a sequence. It can be chronological from when an email is sent or a radio ad is aired, or when an email is opened or a radio ad is heard. *Id.* ¶ 33.

A category can encompass a type or class of product, relationship, interaction, or service such as a furniture sale, watching a video about a new gymnasium, starting, renewing, or maintaining a magazine subscription or monthly subscription to a software app, a sale of a service, a visit to a new store, use of a coupon, a positive review, reviewing something, reading an article, completing a survey, or a sale of an item. *Id.* ¶ 34; *see Two-Way Media Ltd. v. Comcast Cable Commc’ns, LLC*, 874 F.3d 1329, 1340 (Fed. Cir. 2017) (“As with claim 1 of the ’187 patent, the problem is that no inventive concept resides in the claims.”). Arguments that merely repeat these limitations and assert that they integrate the claims into a practical application (Appeal Br. 20) are not persuasive.

These limitations recite abstract ideas not technological advances. *See Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d at 1371 (“Requiring the use of a ‘software’ ‘brain’ ‘tasked with tailoring information and providing it to the user’ provides no additional limitation beyond applying an abstract idea, restricted to the Internet, on a generic computer.”); *Bancorp Servs., LLC v. Sun Life Assur. Co. of Canada (U.S.)*, 687 F.3d 1266, 1278 (Fed. Cir. 2012) (“To salvage an otherwise patent-ineligible process, a computer must be integral to the claimed invention, facilitating the process in a way that a person making calculations or computations could not.”). Our reviewing court recently held similar activity involving advertising data in a similar context to be an abstract idea:

In short, by dedicating a section of the computer’s memory to advertising data, the claimed invention ensures memory is available for at least some advertising data. This does not, however, improve the functionality of the computer itself. Even if we accept Customedia’s assertions, the claimed invention merely improves the abstract concept of delivering targeted advertising using a computer only as a tool. This is not what the Supreme Court meant by improving the functioning of the computer itself nor is it consistent with our precedent applying this concept.

Customedia Techs., LLC v. Dish Network Corp., 951 F.3d 1359, 1363 (Fed. Cir. 2020). The claims did not enable computers to operate more quickly or efficiently, or solve any technological problem because:

The only improvements identified in the specification are generic speed and efficiency improvements inherent in applying the use of a computer to any task. Therefore, the claimed invention is at most an improvement to the abstract concept of targeted advertising wherein a computer is merely used as a tool. This is not an improvement in the functioning of the computer itself.

Id. at 1365 (“They merely recite reserving memory to ensure storage space is available for at least some advertising data.”).

Appellant’s arguments that the claim imposes meaningful limits is not persuasive because the limitations cited by Appellant recite the abstract idea identified above, which does not meaningfully limit the claim or integrate it into a practical application. *See* Appeal Br. 19–20; Reply Br. 7.

Arguing that claim 1 recites a process that handles a billion sequences and many communication channels (Appeal Br. 19–20) is not commensurate with the scope of claim 1 as discussed above. At best, it asserts benefits of using a computer as a tool to implement the abstract idea. Using computers as tools, without any improvement to computer function, is not sufficient to make an abstract idea patent-eligible. *See Customedia*, 951 F.3d at 1363.

Even recitation of concrete, tangible components is not sufficient to make abstract ideas performed on or with that processor patent-eligible. *Alice*, 573 U.S. at 223 (“[T]he mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention.”). Here, the focus of claim 1 is not on a technological advance in processors, networks, or communication channels. Rather, the focus is on performing an abstract idea for which computers are invoked as a tool. *See Enfish*, 822 F.3d at 1335–36; *Bancorp*, 687 F.3d at 1278 (“[T]he use of a computer in an otherwise patent-ineligible process for no more than its most basic function—making calculations or computations—fails to circumvent the prohibition against patenting abstract ideas and mental processes.”).

Appellant does not refute the Examiner’s determination that claim 1 does not improve computer functions, use a particular machine, reduce a particular article, or meaningfully link a computer to the abstract idea.

As our reviewing court held in a similar context:

The specification states that the invention filled a need for a system which would “ensure higher access rates, longer browse times, and increased consumption of media” by users. ’747 col. 3 ll. 15–22. But each of these goals is in the abstract realm—an improvement in the success or monetization of tracking users with personalized markings in order to serve advertisements—not an improvement in networking or computer functionality. None of these alleged improvements “enables a *computer . . .* to do things it could not do before.” *Finjan, Inc. v. Blue Coat Sys., Inc.*, 879 F.3d 1299, 1305 (Fed. Cir. 2018) (emphasis added). Such claims, whose focus is “not a physical-realm improvement but an improvement in a wholly abstract idea,” are not eligible for patenting. *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1168 (Fed. Cir. 2018).

Bridge and Post, 778 F. App’x at 889; see *Voit Techs., LLC v. Del-Ton, Inc.*, 757 F. App’x 1000, 1003 (Fed. Cir. 2019) (“Voit fails to explain how employing different formats, as claimed, improves compression techniques or the functioning of the computer. Instead, the specification demonstrates that the Asserted Claims are directed to use of generic computer components performing conventional compression techniques to carry out the claimed invention.”). “Information as such is an intangible” and collecting, analyzing, and displaying that information, without more, is an abstract idea. See *Interval Licensing LLC v. AOL, Inc.*, 896 F.3d 1335, 1344–45 (Fed. Cir. 2018) (quoting *Elec. Power Grp.*, 830 F.3d at 1353–54 and citing decisions holding that displaying different types or sets of information from various sources on a generic display is abstract absent a specific improvement to the way computers or other technologies operate).

Accordingly, we determine that claim 1 does not include additional elements that integrate the abstract idea into a practical application.

Step 2B: Does Claim 1 Include an Inventive Concept?

We next consider whether claim 1 recites 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 performance of well-understood, routine, and conventional activities previously known to the industry. *Berkheimerv. HP Inc.*, 881 F.3d 1360, 1367 (Fed. Cir. 2018); *see* Revised Guidance, 84 Fed. Reg. at 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 claims recite a combination of elements that are not well-understood, routine, or conventional, and incorporate steps that are unconventional and confine the claims to a particular useful application. Appeal Br. 23. Appellant also argues that the Examiner admits there is no prior art so it is unclear how a combination of elements that is not known in the art can be conventional or routine. *Id.* at 23–24; Reply Br. 9–11.

This argument is not persuasive because, as an ordered combination, claim 1 recites no more than the abstract idea identified above. Therefore, it cannot provide an inventive concept. *See BSG*, 899 F.3d at 1290. Even if the steps are groundbreaking, innovative, or brilliant, that is not enough for eligibility. *See Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 591 (2013); *accord SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1163 (“No matter how much of an advance in the finance field the claims recite, the advance lies entirely in the realm of abstract ideas, with no plausibly alleged innovation in the non-abstract application realm. An advance of that nature is ineligible for patenting.”).

Individually, the limitations of claim 1 recite aspects of that abstract idea. A novel or non-obvious abstract idea is still an abstract idea. *Ericsson*, 955 F.3d at 1330 (“Even assuming that this collection of elements led to a more efficient way of controlling resource access, ‘our precedent is clear that merely adding computer functionality to increase the speed or efficiency of the process does not confer patent eligibility on an otherwise abstract idea.”); *see also Customedia*, 951 F.3d at 1366 (“Aside from the abstract idea of delivering targeted advertising, the claims recite only generic computer components.”).

Notably, claim 1 recites results rather than innovative ways to achieve the results. Claim 1 recites “receiving historic marketing sequence data for multiple sequences” but does not describe an innovative way in which that data is recited or ordered. Claim 1 recites “reducing the historic marketing sequence data into filtered sequence data” but does not describe how that process is performed to improve computer functionality. The same can be said for “determining from the filtered sequence data a sequence for the desired category . . . based on a confidence” If an inventive step is used to perform any of these steps, it is not recited in claim 1.

Accordingly, we determine that claim 1 does not recite any elements, individually or as an ordered combination, that provide an inventive concept sufficient to transform the abstract idea into patent eligible subject matter.

Thus, we sustain the Examiner’s determination that claims 1–8 and 21–32 are directed to patent-ineligible subject matter under 35 U.S.C. § 101.

CONCLUSION

In summary:

| Claims Rejected | 35 U.S.C. § | Reference(s)/ Basis | Affirmed | Reversed |
|------------------------|--------------------|----------------------------|-----------------|-----------------|
| 1-8, 21-32 | 101 | Eligibility | 1-8, 21-32 | |

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