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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* MATTHEW G. BERRY

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Appeal 2017-002911  
Application 12/624,987<sup>1</sup>  
Technology Center 3600

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Before DENISE M. POTHIER, LARRY J. HUME, and JOYCE CRAIG,  
*Administrative Patent Judges.*

HUME, *Administrative Patent Judge.*

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) of the Final Rejection of claims 1–20, which are all claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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<sup>1</sup> According to Appellant, the real party in interest is TiVo, Inc. App. Br. 1.

## STATEMENT OF THE CASE<sup>2</sup>

### *Related Case*

An Appeal is pending before the Board in related Application Serial No. 14/707,440, Appeal No. 2017-003239. App. Br. 2.

### *The Invention*

Appellant's disclosed embodiments and claimed invention "relate generally to analyzing trends and patterns in video consumption, and more particularly to identifying trends in video viewer activity as a function of embedded video metadata for purposes of optimizing content associated with video media." Spec. 1, ll. 12–15.

### *Exemplary Claim*

Claim 1, reproduced below, is representative of the subject matter on appeal (*emphases* and labeling added to contested prior-art limitations):

1. A method for predicting viewer behavior toward a new video based on identified patterns in video consumption data associated with one or more existing videos, comprising the steps of:

[L1] *receiving video consumption data comprising one or more output states at particular time points within each of the one or more existing videos*, the video consumption data associated with all viewers of each of the one or more existing videos monitored by a tracking system;

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<sup>2</sup> Our decision relies upon Appellant's Appeal Brief ("App. Br.," filed May 4, 2016); Reply Brief ("Reply Br.," filed Dec. 9, 2016); Examiner's Answer ("Ans.," mailed Nov. 4, 2016); Final Office Action ("Final Act.," mailed Oct. 1, 2015); and the original Specification ("Spec.," filed Nov. 24, 2009) (claiming benefit of US 61/117,454, filed Nov. 24, 2008).



*Rejections on Appeal*

R1. Claims 1–20 stand rejected under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter. Final Act. 3.

R2. Claims 1–4, 8, 9, and 13–20 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Andrade. Final Act. 5.

R3. Claims 5–7 and 10–12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Andrade and Eriksson. Final Act. 28.

CLAIM GROUPING

Based on Appellant's arguments (App. Br. 5–24), we decide the appeal of patent-ineligible subject matter Rejection R1 of claims 1–20 on the basis of representative claim 1; and we decide the appeal of anticipation Rejection R2 of claims 1–4, 8, 9, and 13–20 on the basis of representative claim 1.

Remaining claims 5–7 and 10–12 in Rejection R3, not argued separately, stand or fall with the respective independent claim from which they depend.<sup>3</sup>

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<sup>3</sup> "Notwithstanding any other provision of this paragraph, the failure of appellant to separately argue claims which appellant has grouped together shall constitute a waiver of any argument that the Board must consider the patentability of any grouped claim separately." 37 C.F.R. § 41.37(c)(1)(iv). In addition, when Appellant does not separately argue the patentability of dependent claims, the claims stand or fall with the claims from which they depend. *In re King*, 801 F.2d 1324, 1325 (Fed. Cir. 1986).

## ISSUES AND ANALYSIS

In reaching this decision, we consider all evidence presented and all arguments actually made by Appellant. To the extent Appellant has not advanced separate, substantive arguments for particular claims, or other issues, such arguments are waived. 37 C.F.R. § 41.37(c)(1)(iv).

We disagree with Appellant's arguments with respect to claims 1–20 and, unless otherwise noted, we incorporate by reference herein and adopt as our own: (1) the findings and reasons set forth by the Examiner in the action from which this appeal is taken, and (2) the reasons and rebuttals set forth in the Examiner's Answer in response to Appellant's arguments. We highlight and address specific findings and arguments regarding claim 1 for emphasis as follows.

1. § 101 Rejection R1 of Claims 1–20

Issue 1

Appellant argues (App. Br. 5–16; Reply Br. 1–13) the Examiner's rejection of claim 1 under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter is in error. These contentions present us with the following issue:

Did the Examiner err in concluding claim 1 is directed to a judicial exception, i.e., an abstract idea, without significantly more, and thus is patent-ineligible under § 101?

Analysis

*Alice Framework*

Section 101 provides that anyone who "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. 35 U.S.C. § 101. The Supreme Court has repeatedly emphasized that patent protection should not extend to claims that monopolize "the basic tools of scientific and technological work." *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 71 (2012); *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2354 (2014). Accordingly, laws of nature, natural phenomena, and abstract ideas are not patent-eligible subject matter. *Id.*

The Supreme Court's two-part *Alice* framework guides us in distinguishing between patent claims that impermissibly claim the "building blocks of human ingenuity" and those that "integrate the building blocks into something more." *Id.* (internal quotation marks, citation, and bracketing omitted). First, we "determine whether the claims at issue are directed to [a] patent-ineligible concept[]." *Id.* at 2355. If so, we "examine the elements of the claim to determine whether it contains an 'inventive concept' sufficient to 'transform' the claimed abstract idea into a patent-eligible application." *Id.* at 2357 (quoting *Mayo*, 566 U.S. at 72, 79). While the two steps of the *Alice* framework are related, the "Supreme Court's formulation makes clear that the first-stage filter is a meaningful one, sometimes ending the § 101 inquiry." *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016). We note the Supreme Court "has not established a definitive rule to determine what constitutes an 'abstract idea'" for the purposes of step one.

*Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334 (Fed. Cir. 2016) (citing *Alice*, 134 S. Ct at 2357).

In *Enfish*, our reviewing court held claims directed to a self-referential logical model for a computer database patent-eligible under step one of *Alice*. *Enfish*, 822 F.3d at 1330. The disclosed technique enabled faster searching and more effective storage of data than previous methods. *Id.* at 1333. The court found the claims directed to "a specific improvement to the way computers operate, embodied in the self-referential table" (*id.* at 1336), and explained that the claims are "not simply directed to *any* form of storing tabular data, but instead are specifically directed to a *self-referential table* for a computer database" that functions differently than conventional databases. *Id.* at 1337.

In *McRO*, the claims were not held to be abstract because they recited a "specific . . . improvement in computer animation" using "unconventional rules that relate[d] sub-sequences of phonemes, timings, and morph weight sets." *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1302–03, 1307–08, 1314–15 (Fed. Cir. 2016). In *McRO*, "the incorporation of the claimed rules, not the use of the computer," improved an existing technological process. *Id.* at 1314.

However, our reviewing court has held claims ineligible as directed to an abstract idea when they merely collect electronic information, display information, or embody mental processes that could be performed by humans. *Elec. Power Grp.*, 830 F.3d at 1353–54 (collecting cases). At the same time, "all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas." *Mayo*, 566 U.S. at 71. Abstract ideas may include, but are not limited to, fundamental



economic practices, methods of organizing human activities, an idea of itself, and mathematical formulas or relationships. *Alice*, 134 S. Ct. at 2355–57. Under this guidance, we must therefore ensure at step one that we articulate what the claims are directed to with enough specificity to ensure the step one inquiry is meaningful. *Id.* at 2354 ("[W]e tread carefully in construing this exclusionary principle lest it swallow all of patent law.").

Under the "abstract idea" step we must evaluate "the 'focus of the claimed advance over the prior art' to determine if the claim's 'character as a whole' is directed to excluded subject matter." *Affinity Labs of Texas, LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016) (internal citation omitted). If the claims are not directed to a patent-ineligible concept, the inquiry ends. *See Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253, 1262 (Fed. Cir. 2017). If the concept is directed to a patent-ineligible concept, we proceed to the "inventive concept" step. For that second step we must "look with more specificity at what the claim elements add, in order to determine 'whether they identify an "inventive concept" in the application of the ineligible subject matter' to which the claim is directed." *Affinity Labs*, 838 F.3d at 1258 (quoting *Elec. Power Grp.*, 830 F.3d at 1353).

*Alice Step 1 — Abstract Idea*

The Examiner concludes:

Claim(s) **1-20** are directed to an inventive concept of predicting viewer behavior toward a new video based on identified patterns in video consumption data with one or more existing videos, which is considered an abstract idea using a fundamental economic practice. Such as in *Smart Gene*, which compares new and stored information and using rules to identify options, the current invention compares consumption data with time-based metadata associated with content to

generate rules for editing content in a new video. Therefore an abstract idea is present in the claims.

Final Act. 3. The Examiner further observes:

Finally, to the extent that the abstract idea is not considered a "fundamental" economic practice, initially note *buySAFE, Inc. v. Google, Inc.*, 112 USPQ2d 1093 (Fed. Cir. 2014) which stated that in "defining the excluded categories, the Court has ruled that the exclusion applies if a claim involves a natural law or phenomenon or abstract idea, even if the particular natural law or phenomenon or abstract idea at issue is narrow. *Mayo*, 132 S. Ct. at 1303".

Final Act. 4.

Appellant generally contends the Examiner did not properly apply the subject matter eligibility test by confusing the two inquiries in the two-part *Alice* test. App. Br. 5–6. More specifically, Appellant argues, "the Final Office Action directly alleges an inventive concept ('of predicting viewer behavior toward a new video based on identified consumption patterns in video consumption data with one or more existing videos') to which Claims 1–20 are directed." App. Br. 6. "[T]here is no evidence that the Final Office Action has performed a search for an inventive concept in light of a determination (in Part 1 of the test) of the judicially recognized exception such as abstract idea." App. Br. 7. Additionally, Appellant alleges *SmartGene*<sup>4</sup> is nonprecedential and "has no holding relating to **fundamental economic practice** . . . [alleged] in Claim 1 . . . [and] is devoid of any mention of the word 'fundamental', much less 'fundamental economic practice' . . . . *SmartGene* does not provide a valid legal basis for the . . . 'fundamental economic practice' assertion." *Id.*

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<sup>4</sup> *SmartGene, Inc. v. Adv. Bio. Labs. SA*, 555 F. App'x 950 (Fed. Cir. 2014) (nonprecedential).

In response, the Examiner states the requisite two-step *Alice* analysis was carried out (Ans. 3–4), and *SmartGene*, even if non-precedential, is cited as being one of many exemplary cases in USPTO Guidelines that provides a useful tool for determining patent eligibility. Ans. 6.

[T]here can be significant overlap between abstract idea categories, and one abstract idea that could be deemed as a fundamental economic practice may also be categorized as an idea of itself, and/or organizing human activity, [and] . . . while the inventive concept was labeled as a fundamental economic practice, the Examiner identified the inventive concept overlapping into an idea of itself, which is why *SmartGene* was cited.

*Id.*

Finally, the Examiner notes that it is reasonable that fundamental economic practices would not be limited to merely contractual relationships, hedging and mitigating settlement risk. Additionally, in accordance with the "July 2015 Update: Subject Matter Eligibility", section III. A., the Examiner notes "The term 'fundamental'" is used in the sense of being foundational or basic, and not in the sense of necessarily being "old" or "well-known." As such, inserting advertisements into video programming can certainly and reasonably be construed as "foundational or basic" in the art of content-based media advertising (e.g. video and/or television advertising). Aside from this fact, *SmartGene* was specifically used because like *SmartGene*, the current invention compares current time-code information with user characteristics metadata and time-based metadata file to select an appropriate advertisement to present to an end user. Thus, the claim is directed towards an abstract idea and hence ineligible.

Ans. 7–8.

Under the "abstract idea" step we must evaluate "the 'focus of the claimed advance over the prior art' to determine if the claim's 'character as a

whole' is directed to excluded subject matter." *Affinity Labs*, 838 F.3d at 1257 (citation omitted).

Turning to the claimed invention, claim 1 recites: "[a] method for predicting viewer behavior toward a new video based on identified patterns in video consumption data associated with one or more existing videos." Claim 1 (preamble). The limitations of method claim 1 also require the steps of:

- (a) "receiving video consumption data . . . ;"
- (b) "receiving time-based metadata . . . ;"
- (c) "analyzing . . . the video consumption data and metadata . . . ;"
- (d) "generating . . . one or more rules based on multiple metadata variables . . . to identify and target likely output states . . . based on time-based metadata . . . and based on the identified patterns; and"
- (e) editing . . . content . . . to incorporate additional content . . . matching the targeted likely output states using the generated rules."

Under step one, we agree with the Examiner that the inventions claimed in each of independent claims 1 and 8 are directed to an abstract idea. *However*, we disagree that a conclusion of a fundamental *economic* practice most correctly characterizes the subject matter of the claims on appeal. Instead, as a matter of claim construction, and while recognizing the potential overlap between the various characterizations of abstract subject matter in examination guidelines found in the MPEP<sup>5</sup> based upon the body of our controlling case law precedent, we conclude the claims on appeal may

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<sup>5</sup> *See, e.g.*, Manual of Patent Examination Procedure (MPEP) §§ 2103–2106.

be more appropriately characterized as being directed to a fundamental practice, albeit not an *economic* practice, or may alternatively be characterized as being directed to a method of organizing human activity. *See* Ans. 8. Regardless of how the claims are characterized under Step 1, we conclude they are directed to patent-ineligible subject matter.

In *Intellectual Ventures I LLC v. Capital One Bank (USA)*, analogous in key respects to the claims before us on appeal (both of which tailor content based on information about the user), our reviewing court determined such claims were directed to an abstract idea and, thus, patent-ineligible.

At step one of the *Alice* framework, it is often useful to determine the breadth of the claims in order to determine whether the claims extend to cover a "fundamental . . . practice long prevalent in our system . . . ." *Alice*, 134 S. Ct. at 2356. As noted, the claim relates to customizing information based on (1) information known about the user and (2) navigation data. . . . [T]ailoring is "a fundamental . . . practice long prevalent in our system . . . ." *Id.* There is no dispute that newspaper inserts had often been tailored based on information known about the customer—for example, a newspaper might advertise based on the customer's location. Providing this minimal tailoring—e.g., providing different newspaper inserts based upon the location of the individual—is an abstract idea.

*Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1369 (Fed. Cir. 2015).

As the Specification discloses, "[t]he present systems and methods relate generally to analyzing trends and patterns in video consumption, and more particularly to identifying trends in video viewer activity as a function of embedded video metadata for purposes of optimizing content associated

with video media." Spec. 1, ll. 12–15.<sup>6</sup> We find this type of activity, i.e., tailoring content based on information about the user, for example, includes longstanding conduct that existed well before the advent of computers and the Internet and, outside the recitation of "one or more computing devices," could be carried out by a human with pen and paper. *See CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1375 (Fed. Cir. 2011) ("That purely mental processes can be unpatentable, even when performed by a

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<sup>6</sup> *See also* Spec. 20 ("Abstract") (emphasis added):

Systems and methods are described for analyzing video content in conjunction with historical video consumption data, *and identifying and generating relationships, rules, and correlations between the video content and viewer behavior.* According to one aspect, a system receives video consumption data associated with one or more output states for one or more videos. The output states generally comprise tracked and recorded viewer behaviors during videos such as pausing, rewinding, fast-forwarding, clicking on an advertisement (for Internet videos), and other similar actions. Next, the system receives metadata associated with the content of one or more videos. The metadata is associated with video content such as actors, places, objects, dialogue, etc. The system then analyzes the received video consumption data and metadata via a multivariate analysis engine to generate an output analysis of the data. The output may be a scatter plot, chart, list, or other similar type of output that is used to identify patterns associated with the metadata and the one or more output states. Finally, the system generates one or more rules incorporating the identified patterns, *wherein the one or more rules define relationships between the video content (i.e. metadata) and viewer behavior (i.e. output states).*

computer, was precisely the holding of the Supreme Court in *Gottschalk v. Benson*.").<sup>7</sup>

Our reviewing court has previously held other patent claims ineligible for reciting similar abstract concepts. For example, while the Supreme Court has enhanced the § 101 analysis since *CyberSource* in cases like *Mayo* and *Alice*, the Federal Circuit continues to "treat[ ] 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." *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1146–47 (Fed. Cir. 2016) (alteration in original) (quoting *Elec. Power Grp.*, 830 F.3d at 1354).

In addition, our reviewing court has concluded that abstract ideas include the concepts of collecting data, recognizing certain data within the collected data set, and storing the data in memory. *Content Extraction & Transmission LLC v. Wells Fargo Bank, N.A.*, 776 F.3d 1343, 1347 (Fed. Cir. 2014). Additionally, the collection of information and analysis of information (e.g., recognizing certain data within the dataset) are also abstract ideas. *Elec. Power Grp.*, 830 F.3d at 1353–54 (collecting information and "analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, [are] essentially mental processes within the abstract-idea category"). Similarly, "collecting, displaying, and manipulating data" is an abstract idea. *Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1340 (Fed. Cir. 2017).

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<sup>7</sup> *CyberSource* further guides that "a method that can be performed by human thought alone is merely an abstract idea and is not patent-eligible under § 101." *CyberSource*, 654 F.3d at 1373.

Also, collecting and comparing known information has been determined to be an abstract idea. *Classen Immunotherapies, Inc. v. Biogen IDEC*, 659 F.3d 1057, 1067 (Fed. Cir. 2011) ("Claim 1 of the '283 patent states the idea of collecting and comparing known information"). Further, a process that employs mathematical algorithms to manipulate existing information to generate additional information is abstract. *Digitech Image Techs., LLC v. Elec. for Imaging, Inc.*, 758 F.3d 1344, 1351 (Fed. Cir. 2014). More recently, our reviewing court has also concluded that acts of parsing, comparing, storing, and editing data are abstract ideas. *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1367 (Fed. Cir. 2018).

Appellant also alleges claim 1 is patent-eligible because its practice does not preempt practice by others. App. Br. 13–14. "Claim 1, viewed **as a whole**, clearly does not seek to tie up [preempt] the entire idea of 'predicting viewer behavior toward a new video based on identified consumption patterns in video consumption data with one or more existing videos.'" App. Br. 13.

Regarding preemption, "[w]hile preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility. . . . Where a patent's claims are deemed only to disclose patent ineligible subject matter under the *Mayo* framework, as they are in this case, preemption concerns are fully addressed and made moot." *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015); *see also OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1362–63 (Fed. Cir. 2015) ("that the claims do not preempt all price optimization or may be limited to price optimization in the e-commerce setting do not make them any less abstract"). We agree with the Examiner's



response in this Appeal, which we incorporate herein by reference.

Ans. 13–14.

Therefore, in agreement with the Examiner, we conclude claim 1 involves nothing more than identifying, collecting, storing, comparing, and generating data, without any particular inventive technology — an abstract idea. *See Elec. Power Grp.*, 830 F.3d at 1354.<sup>8</sup>

Accordingly, on this record, and under step one of *Alice*, we agree with the Examiner's conclusion the claims are directed to an abstract idea.

*Alice Step 2 —Inventive Concept*

If the claims are directed to a patent-ineligible concept, as we conclude above, we proceed to the "inventive concept" step. For that step we must "look with more specificity at what the claim elements add, in order to determine 'whether they identify an "inventive concept" in the application of the ineligible subject matter' to which the claim is directed." *Affinity Labs*, 838 F.3d at 1258 (quoting *Elec. Power Grp.*, 830 F.3d at 1353).

In applying step two of the *Alice* analysis, our reviewing court guides we must "determine whether the claims do significantly more than simply describe [the] abstract method" and thus transform the abstract idea into patentable subject matter. *Ulramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715 (Fed. Cir. 2014). We look to see whether there are any "additional features" in the claims that constitute an "inventive concept," thereby rendering the claims eligible for patenting even if they are directed to an abstract idea. *Alice*, 134 S. Ct. at 2357. Those "additional features" must be

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<sup>8</sup> Merely automating previously manual processing by using computers does not qualify as an eligibility-rejection-defeating improvement. *Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044, 1055 (Fed. Cir. 2017).

more than "well-understood, routine, conventional activity." *Mayo*, 566 U.S. at 79.

Evaluating representative claim 1 under step 2 of the *Alice* analysis, we agree with the Examiner that it lacks an inventive concept that transforms the abstract idea of "predicting viewer behavior toward a new video based on identified patterns in video consumption data associated with one or more existing videos" by receiving and analyzing data using "one or more computing devices" (claim 1); or the abstract idea of "identifying trends in video viewing behavior across a plurality of existing videos" by receiving and analyzing data using "one or more computing devices" (claim 8) into a patent-eligible application of that abstract idea. *See* Ans. 17–18.<sup>9</sup>

The Examiner further concludes,

[t]he additional elements are each functional generic computer components that perform the generic functions of processing, communicating and displaying, all common to electronics and computer systems. Generic computer implementation does not provide significantly more than that

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<sup>9</sup> For example, the Examiner concludes:

The claim recites the additional limitations of "a tracking system", "one or more computing devices" and "a multivariate analysis engine" (and similarly in claim 8). The additional elements are recited at a high level of generality and are recited as performing generic computer functions routinely used in computer applications. As such, the additional elements of the claim do not add a meaningful limitation to the abstract idea because they would be generic computer functions in any computer implementation.

Ans. 17.

abstract idea. The multiple receiving steps are merely extra-resolution activity and does not meaningfully limit the claim.

Ans. 18.

We note the patent eligibility inquiry may contain underlying issues of fact. *Mortg. Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1325 (Fed. Cir. 2016). In particular, "[t]he question of whether a claim element or combination of elements is well-understood, routine and conventional to a skilled artisan in the relevant field is a question of fact." *Berkheimer*, 881 F.3d at 1368.

As evidence of the conventional nature of the claimed network components and processes, we note the disclosure of Appellant's Specification. For example:

Referring now to the drawings, FIG. 1 illustrates one embodiment of the system architecture for a system **100** for analyzing and identifying trends between video content and viewer behavior. In the embodiment shown, the system **100** includes a server **105**, a video database **110**, a metadata database **115**, and a viewing metrics database **120**. The system **100** further includes a multivariate analysis (MVA) engine **125** that receives limiting parameters from a parameter generator **130**, and generates an output **400**. Although the embodiment of system **100** shown in FIG. 1 includes only one of each of these components, one having ordinary skill in the art will understand that further embodiments may include a plurality of each or any of these components.

In the embodiment shown, the server **105** provides processing functionality for the system **100**, including receiving instructions from an operator **102**, retrieving videos and viewing metric data, extracting embedded metadata from videos (or obtaining metadata otherwise associated with the videos), providing information to the MVA engine **125**, and a host of other operations that will be or become apparent to one of ordinary skill in the art. Additionally, while only one server **105**

is shown, it will be understood that a plurality of servers may be incorporated within embodiments of a computerized system **100**. It will also be understood that such server(s) **105** include suitable hardware and software components for performing the functions and/or steps and taking the actions described herein.

Spec. 6, ll. 8–25.

We agree with the Examiner that the claim limitations may be broadly but reasonably construed as reciting conventional computer components and techniques, particularly in light of Appellant's Specification, as quoted above.<sup>10</sup>

With respect to the *Step 2* analysis, we agree with the Examiner because, as in *Alice*, the recitation of either a "method for predicting viewer behavior toward a new video based on identified patterns in video consumption data associated with one or more existing videos" using "one or more computing devices" (claim 1); or a "method of identifying trends in video viewing behavior across a plurality of existing videos" using "one or more computing devices" (claim 8) is simply not enough to transform the patent-ineligible abstract idea here into a patent-eligible invention. *See Alice*, 134 S. Ct. at 2357 ("[C]laims, which merely require generic computer

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<sup>10</sup> During prosecution, claims must be given their broadest reasonable interpretation when reading claim language in light of the specification as it would be interpreted by one of ordinary skill in the art. *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). Under this standard, we interpret claim terms using "the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant's specification." *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997).

implementation, fail to transform [an] abstract idea into a patent-eligible invention." ).<sup>11</sup>

Accordingly, based upon the findings above, on this record, we are not persuaded of error in the Examiner's conclusion that the appealed claims are directed to patent-ineligible subject matter. Therefore, we sustain the Examiner's § 101 rejection of independent claim 1, and grouped claims 2–20, not argued separately, and which fall therewith. *See Claim Grouping, supra.*

Therefore, based upon the findings above, on this record, we are not persuaded of error in the Examiner's factual findings in support of the legal conclusion that independent claim 1 and grouped claims 2–20 are directed to patent-ineligible subject matter. *See Claim Grouping, supra.*

2. § 102(e) Rejection R2 of Claims 1–4, 8, 9, and 13–20

Issue 2

Appellant argues (App. Br. 16–24; Reply Br. 13–22) the Examiner's rejection of claim 1 under 35 U.S.C. § 102(e) as being anticipated by Andrade is in error. These contentions present us with the following issue:

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<sup>11</sup> Appellant essentially alleges the Examiner failed to properly carry out the *Alice* analysis. Reply Br. 13.

This belated two-part analysis in the Examiner's Answer is a constructive admission on the part of the Examiner that the Final Office Action has failed to perform properly the two-part analysis, and in particular, fails to properly perform the second step of the subject matter eligibility test, as argued in the Appeal Brief.

Reply Br. 12.

Did the Examiner err in finding the cited prior art discloses "[a] method for predicting viewer behavior toward a new video based on identified patterns in video consumption data associated with one or more existing videos," that includes, *inter alia*, limitation L1, "receiving video consumption data comprising one or more output states;" limitation L2, "receiving time-based metadata associated with content of the one or more existing video;" limitation L3, "analyzing, by one or more computing devices, the video consumption data and metadata via a multivariate analysis engine to identify patterns associated with the metadata associated with the one or more output states;" limitation L4, "generating, by the one or more computing devices, one or more rules based on multiple metadata variables linking combinations of metadata to the one or more output states to identify and target likely output states at time points within the new video based on time-based metadata for the new video and based on the identified patterns;" and limitation L5, "editing, by the one or more computing devices, content in the new video at time points within the new video to incorporate additional content into the new video," as recited in claim 1?

Analysis

Anticipation of a claim under 35 U.S.C. § 102 occurs when each claimed element and the claimed arrangement or combination of those elements is disclosed, inherently or expressly, by a single prior art reference. *Therasense, Inc. v. Becton, Dickinson & Co.*, 593 F.3d 1325, 1332 (Fed. Cir. 2010).

*Limitation L1 – Receiving video consumption data*

During prosecution, claims must be given their broadest reasonable interpretation when reading claim language in light of the specification as it would be interpreted by one of ordinary skill in the art. *In re Am. Acad.*, 367 F.3d at 1364. Under this standard, we interpret claim terms using "the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant's specification." *In re Morris*, 127 F.3d at 1054.

Appellant contends Andrade does not anticipate because "[c]laim 1 does not claim the general concept of 'video consumption data,' but rather recites 'video consumption data' with features specific to the claimed invention." App. Br. 16. Specifically, claim 1 "comprises one or more **output states at particular time points** within each of the one or more existing videos." App. Br. 17. Further, Appellant alleges the Examiner "fails to identify which elements in *Andrade* correspond to 'output states' and 'particular time points' as featured in Claim 1. This omission is material, as the Final Office Action fails to identify an element in the cited art that corresponds to the omitted claim limitation." *Id.*

In response, as a preliminary matter, the Examiner cites Appellant's Specification:

[V]ideo consumption data is data related to viewer behavior in the form of various "output states", which describe viewer interactions with a video, such as fast-forwarding, rewinding, pausing, playing, exiting the video, interacting with an

advertisement, changing the channel, etc. As will be understood, virtually any user behavior may be tracked, and video consumption data is not limited to the specific output states mentioned.

Ans. 19 (citing Spec. 8, ll. 16–20).

The Examiner reiterates Andrade's disclosure in paragraphs 5–9, 19, 21–38, and 41–63 discloses the disputed limitation under the broadest reasonable interpretation consistent with the Specification. Ans. 19–20.

Clearly, this disclosure of Andrade is in accordance with Appellant's specification, as the system of Andrade tracks the specific time-code locations (i.e. "time-based metadata associated with the content" as claimed) of which content is actually watched, or skipped, fast-forwarded, paused etc. (i.e. tracked viewer behavior that satisfies the "output states" limitations in accordance with page 8 of Appellant's specification).

Ans. 20–21 (emphasis omitted).

We agree with the Examiner's finding above that Andrade discloses "receiving video consumption data comprising one or more output states at particular time points within each of the one or more existing videos," as recited in claim 1. We agree with the Examiner because, under the broadest reasonable interpretation, we find Andrade's disclosed "technique for tailoring television advertisements (or other multimedia content) at a more specific level, such as at the level of the household or individual user" (Andrade ¶ 5), discloses the contested "receiving" limitation.

*Limitation L2 – Receiving associated time-based video content metadata*

Appellant contends, "the metadata tags in *Andrade* are text based, not time-based. There is no disclosure in *Andrade* that a metadata tag there



includes a time-code or range of time-codes indicating a point or points in a video in which the metadata associated content occurs, as featured in Claim 1." App. Br. 18.

In response, the Examiner finds:

Andrade is clear that actions of the user are monitored, and as the user views or skips certain content, the metadata database is updated. Furthermore, [0027] clearly discloses that "the specific point in a content item where a user initiated a skip operation is noted, as well as the specific point where the user resumed watching the content. Data records for metadata tags . . . are stored for example at database." And as per [0029], the metadata database includes records representing metadata tags associated with the viewed content.

Based on these findings of fact, Andrade is clear that the specific point in time a content item receives a skip operation (i.e. consumption data comprising one or more output states) is associated and stored as the metadata tag. So the metadata tag is not limited to just be text-based, or associated with a keyword as purported by Appellant, but actually vitally connected to a time within the video.

Ans. 22 (emphasis omitted).

We agree with the Examiner's finding above that Andrade discloses "receiving time-based metadata associated with content of the one or more existing videos," as recited in claim 1. We agree with the Examiner because Andrade discloses that a specific point in a video where a user initiates an operation, e.g., a skip operation, is recorded as metadata, and thus stores time-based metadata.

*Limitation L3 – Analyzing data to identify patterns*

Appellant contends "*Andrade* teaches a completely different approach from that of Claim 1. *Andrade*'s system does not identify and target likely

output states at time points within the new video based on time-based metadata for the new video and based on the identified patterns." App. Br. 19.

*Andrade's* system calculates a chance or probability that an item having a metadata tag containing a word (e.g., "bicycle") would be of interest based on a percentage of the metadata tag appearing in the metadata of all content items (e.g., commercials), a percentage of all commercials that the user watches, and a percentage of all commercials that user watches without skipping.

App. Br. 21 (emphasis omitted).

The Examiner finds Andrade paragraphs 26 through 29 disclose that user actions are monitored and the metadata database is updated as the user views or skips various content. Ans. 22. "Furthermore, [0027] clearly discloses that 'the specific point in a content item where a user initiated a skip operation is noted, as well as the specific point where the user resumed watching the content. . . .'" Ans. 22 (citing Andrade ¶ 27).

In agreement with the Examiner, we find this discussion in Andrade discloses analyzing data to identify patterns. We agree with the Examiner because, as further disclosed by Andrade:

According to the present invention, such actions by the user are monitored **103**; these actions are collectively referred to herein as "user behavior". As the user views and/or skips certain content, the metadata database **303** is updated **104** to include a user exposure score indicating how many times the user was exposed to, and did not skip, the content. In one embodiment, additional details regarding the user's behavior with respect to the content are stored.

Andrade ¶ 26 (cited by the Examiner, *see* Final Act. 7). Under the broadest reasonable interpretation, we find at least this portion of Andrade discloses analyzing data to identify patterns.

*Limitation L4 – Generating rules to identify output states*

Appellant contends Andrade teaches a different approach from claim 1. "[U]nder the approach of *Andrade*, a filter similar to one that filters spam emails may be used to compute probability values for metadata tags associated with content items for the purpose of ranking and selecting content items." App. Br. 20–21. Appellant further contends "*Andrade's* system takes into account a specific time at which a skip event occurs . . . so as to isolate specific elements of the content that the user finds objectionable or of less interest." App. Br. 21 (emphasis omitted).

The Examiner cites Andrade paragraphs 5–9, 21–38, and 41–63 as disclosing the "generating rules" limitation. Final Act. 7–8. For example:

Metadata tags associated with non-skipped viewings of content are stored and tracked. In this manner, the user's behavior with respect to content associated with the various metadata tags is stored. Subsequently, candidate content items are scored according to their metadata tags, giving higher scores to candidate content items associated with higher occurrences of non-skipped viewings. *The higher-scoring candidate content items are then favored over other candidate content items.* Thus, based on the choices the user makes with respect to skipping or not skipping particular content items, inferences are made as to the user's level of interest in various subjects, and subsequent content items are delivered in a personalized manner to the user.

Andrade ¶ 6 (emphasis added). We find favoring higher-scoring candidates broadly but reasonably discloses generating a rule. Further,

In one aspect, the present invention uses a Bayesian filter analysis to make determinations as to the likelihood that a particular content item will be of interest to a particular user, given the user's past behavior with respect to content items. The results of the Bayesian analysis are a set of probabilities that can be ranked so that appropriate content items can be selected for display to the user.

Andrade ¶ 9. We also find ranking probabilities and selecting an item for display broadly but reasonably discloses generating a rule.

Thus, under the broadest reasonable interpretation, we find Andrade discloses generating a rule to identify output states.

*Limitation L5 – Editing content in the new video*

With respect to the "editing" limitation, Appellant contends:

The Final Office Action mischaracterizes the *Andrade* reference. *Andrade* does not disclose or in any way teach that **T\_3 and T\_4 that was presented to the user as part of T\_entire had been "added" or "inserted" based on tracked information**, as argued by the Final Office Action.

FIG. 7 and paragraphs [0058-63] in *Andrade* describe that *Andrade's* system takes into account a specific time at which a skip event occurs **so as to so as to [sic] isolate specific elements of the content that the user finds objectionable or of less interest**. For example, "[l]ine 701 indicates skip operations on a time axis 703. As shown in FIG. 7, in this example the user presses the skip button after the portion of the content item associated with metadata tag T2 is shown, and releases the skip button after the portion of the content item associated with metadata tag T4 is shown. Thus, the portions of the content item associated with metadata tags T3 and T4 were not seen."

Thus, the portions of the content item associated with metadata tags T3 and T4 were originally a part of the content item, not **"added" or "inserted" based on tracked**

**information**, as argued by the Final Office Action. The very word "skipped" inherently means that the portion skipped is already there in the content item.

App. Br. 22–23.

In response, the Examiner finds Andrade's paragraph 6 "clearly discloses new video content by Andrade's 'subsequent content items', and even under a broadest reasonable interpretation, a new video can reasonably construed as a previous content program with replacement content." Ans. 26 (citing Andrade ¶ 6). Specifically, the Examiner finds:

The Examiner understands that based on the entirety of Andrade's disclosure, particularly [0006], [0026-29], [0035-36] . . . it is reasonable to construe that based on T 3 and T 4 being "skipped" previously, that the "subsequent content items" (i.e. an edited new video) that are "delivered in a personalized manner to the user" ([0006] in Andrade) would be presented to the user as T entire, *but with new content items being "added" or "inserted" as the new, more relevant T 3 and T 4 segments*, based on the tracked information. Therefore, the content in the new video T entire would indeed be "edited" by "incorporating additional content . . . using the generated rules" (i.e. based on probability values for the specific metadata content tags of Andrade).

Ans. 26–27 (emphasis added).

We agree with the Examiner's determination that Andrade's disclosure of adding content items broadly but reasonably discloses editing content in a new video.

Therefore, based upon the findings above, on this record, we are not persuaded of error in the Examiner's reliance on the cited prior art to disclose the disputed limitation of claim 1, nor do we find error in the Examiner's resulting finding of anticipation. Therefore, we sustain the

Examiner's anticipation rejection of independent claim 1, and grouped claims 2–4, 8, 9, and 13–20 which fall therewith. *See* Claim Grouping, *supra*.

3. § 103(a) Rejection R3 of Claims 5–7 and 10–12

In view of the lack of any substantive or separate arguments directed to obviousness Rejection R3 of claims 5–7 and 10–12 under § 103 (*see* App. Br. 24), we sustain the Examiner's rejection of these claims. Arguments not made are waived.<sup>12</sup>

REPLY BRIEF

To the extent Appellant *may* advance new arguments in the Reply Brief (Reply Br. 1–23) not in response to a shift in the Examiner's position in the Answer, we note arguments raised in a Reply Brief that were not raised in the Appeal Brief or are not responsive to arguments raised in the Examiner's Answer will not be considered except for good cause (*see* 37 C.F.R. § 41.41(b)(2)), which Appellant has not shown.

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<sup>12</sup> Appellant merely argues, "[e]ach of Claims 5-7 and 10-12 depends from Claim 1 or 8. *Eriksson* fails to disclose the features of Claim 1 or 8 as discussed above that are missing in *Andrade*. Moreover, the remaining pending claims include additional elements that the cited references also do not teach or suggest." App. Br. 24.

## CONCLUSIONS

(1) The Examiner did not err with respect to patent-ineligible subject matter Rejection R1 of claims 1–20 under 35 U.S.C. § 101, and we sustain the rejection.

(2) The Examiner did not err with respect to anticipation Rejection R2 of claims 1–4, 8, 9, and 13–20 under 35 U.S.C. § 102(e) over the cited prior art of record, and we sustain the rejection.

(3) The Examiner did not err with respect to obviousness Rejection R3 of claims 5–7 and 10–12 under 35 U.S.C. § 103(a) over the cited prior art combination of record, and we sustain the rejection.

## DECISION

We affirm the Examiner's decision rejecting claims 1–20.

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). *See* 37 C.F.R. § 41.50(f).

AFFIRMED