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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/308,496	11/30/2011	Jacob Sisk	113027.000072US1	1244

79804 7590 10/25/2019

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ART UNIT	PAPER NUMBER
3693	

NOTIFICATION DATE	DELIVERY MODE
10/25/2019	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JACOB SISK

Appeal 2018-006110
Application 13/308,496
Technology Center 3600

Before ST. JOHN COURTENAY III, JOHN A. EVANS, and MATTHEW J. McNEILL, *Administrative Patent Judges*.

COURTENAY, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant[1] appeals under 35 U.S.C. § 134(a) from a final rejection of claims 1–4, 6–14, 16–24, 26, and 30–32, which are all the claims pending in this application. Claims 5, 15, 25, and 27–29 are canceled. We have jurisdiction over the pending claims under 35 U.S.C. § 6(b).

We affirm.

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[1] We use the word "Appellant" to refer to "Applicants" as defined in 37 C.F.R. § 1.42(a). Although the Appeal Brief (1) identifies the real party in interest as "Thomson Reuters Global Resources Unlimited Corporation," as of October 2019 (Execution Date 02/28/2019), the real party in interest is recorded as: "REFINITIV US ORGANIZATION LLC."

STATEMENT OF THE CASE [2]

Introduction

Embodiments of Appellant's claimed invention relate "generally to financial services and to the mining of information from news articles and other sources of content to discern sentiment. . . . [the invention] provides a dynamic tool that leverages machine learning capabilities, news sentiment expertise, and intelligent analytics that enable measuring and/or scoring of sentiment and predictive firm valuation behavior of companies as perceived by conventional and new media." Spec. ¶ 1.

Rejection

Claims 1–4, 6–14, 16–24, 26, and 30–32 are rejected under 35 U.S.C. § 101, as being directed to a judicial exception, without significantly more. Final Act. 2.

ANALYSIS

We reproduce *infra* independent claim 1 in Table One. We have considered all of Appellant's arguments and any evidence presented. To the extent Appellant has not advanced separate, substantive arguments for particular claims, or other issues, such arguments are waived. *See* 37 C.F.R. § 41.37(c)(1)(iv).

[2] We herein refer to the Final Office Action, mailed Aug. 22, 2017 ("Final Act."); Appeal Brief, filed Jan. 22, 2018 ("Appeal Br."); Examiner's Answer, mailed Mar. 22, 2018 ("Ans."), and the Reply Brief, filed May 22, 2018 ("Reply Br.").

Issue

Issue: Under 35 U.S.C. § 101, did the Examiner err by rejecting claims 1–4, 6–14, 16–24, 26, and 30–32, as being directed to a judicial exception, without significantly more?

Principles of Law — 35 U.S.C. § 101

An invention is patent-eligible if it claims a "new and useful process, machine, manufacture, or composition of matter." 35 U.S.C. § 101. However, the Supreme Court has long interpreted 35 U.S.C. § 101 to include implicit exceptions: "'[L]aws of nature, natural phenomena, and abstract ideas' are not patentable." *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 70 (2012) (quoting *Diamond v. Diehr*, 450 U.S. 175, 185 (1981)).

In determining whether a claim falls within an excluded category, we are guided by the Supreme Court's two-step framework, described in *Mayo* and *Alice. Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. 208, 217–18 (2014) (citing *Mayo*, 566 U.S. at 75–77). In accordance with that framework, we first determine what concept the claim is "directed to." *See Alice*, 573 U.S. at 219 ("On their face, the claims before us are drawn to the concept of intermediated settlement, *i.e.*, the use of a third party to mitigate settlement risk." (emphasis omitted)); *see also Bilski v. Kappos*, 561 U.S. 593, 611 (2010) ("Claims 1 and 4 in petitioners' application explain the basic concept of hedging, or protecting against risk.").

Concepts determined to be abstract ideas, and thus patent ineligible, include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–20; *Bilski*, 561 U.S. at 611); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and

mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 69 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as "molding of rubber products" (*Diehr*, 450 U.S. at 193); "tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores" (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S. (15 How.) 252, 267–68 (1854))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

In *Diehr*, the claim at issue recited a mathematical formula, but the Supreme Court held that "[a] claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula." *Diehr*, 450 U.S. at 187; *see also id.* at 191 ("We view respondents' claims as nothing more than a process for molding rubber products and not as an attempt to patent a mathematical formula."). Having said that, the Supreme Court also indicated that a claim "seeking patent protection for that formula in the abstract . . . is not accorded the protection of our patent laws, . . . and this principle cannot be circumvented by attempting to limit the use of the formula to a particular technological environment." *Id.* (citing *Benson* and *Flook*); *see, e.g.*, *id.* at 187 ("It is now commonplace that an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.").

If the claim is "directed to" an abstract idea, we turn to the second step of the *Alice* and *Mayo* framework, where "we must 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." *Alice*, 573 U.S. at 221 (citation omitted). "A claim

that recites an abstract idea must include 'additional features' to ensure 'that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].'" *Id.* (alterations in original) (quoting *Mayo*, 566 U.S. at 77). "[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention." *Id.*

Subject Matter Eligibility — 2019 Revised Guidance

The USPTO recently published revised guidance on the application of 35 U.S.C. § 101. *See* 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) ("2019 Revised Guidance"). *This new guidance is applied in this Opinion.* Under the 2019 Revised Guidance, we first look to whether the claim recites:

> (1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, mental processes, or certain methods of organizing human activity such as a fundamental economic practice or managing personal behavior or relationships or interactions between people);[3] and
>
> (2) additional elements that integrate the judicial exception into a practical application (*see* Manual of Patent Examining Procedure ("MPEP") §§ 2106.05(a)–(c), (e)–(h)).[4, 5]

See 2019 Revised Guidance, 84 Fed. Reg. at 51–52, 55.

A claim that integrates a judicial exception into a practical application applies, relies on, or uses the judicial exception in a manner that imposes a

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[3] Referred to as "*Step 2A, Prong One*" in the Revised Guidance (hereinafter "*Step 2A, prong 1*").

[4] Referred to as "*Step 2A, Prong Two*" in the Revised Guidance (hereinafter "*Step 2A, prong 2*").

[5] All references to the MPEP are to the Ninth Edition, Revision 08.2017 (rev. Jan. 2018).

meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception. *See* 2019 Revised Guidance, 84 Fed. Reg. at 54. When the judicial exception is so integrated, then the claim is not directed to a judicial exception and is patent eligible under 35 U.S.C. § 101. *Id.*

Only if a claim: (1) recites a judicial exception and (2) does not integrate that exception into a practical application, do we then evaluate whether the claim provides an inventive concept. *See* 2019 Revised Guidance, 84 Fed. Reg. at 56; *Alice*, 573 U.S. at 217–18.

For example, we look to whether the claim:

> (3) adds a specific limitation beyond the judicial exception that is not "well-understood, routine, conventional" in the field (*see* MPEP § 2106.05(d)); **or**
>
> (4) simply appends well-understood, routine, and conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.[6]

See 2019 Revised Guidance, 84 Fed. Reg. at 56.

Because there is no single definition of an "abstract idea" under *Alice* step 1, the PTO has recently synthesized, for purposes of clarity, predictability, and consistency, key concepts identified by the courts as abstract ideas to explain that the "abstract idea" exception includes the following three groupings:

1. Mathematical concepts—mathematical relationships, mathematical formulas or equations, mathematical calculations;

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[6] Items (3) and (4) continue to be collectively referred to as "*Step 2B*" of the Supreme Court's two-step framework, described in *Mayo* and *Alice*.

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

See 2019 Revised Guidance, 84 Fed. Reg. at 52.

According to the 2019 Revised Guidance, "[c]laims that do not recite [subject] matter that falls within these enumerated groupings of abstract ideas should not be treated as reciting abstract ideas," except in rare circumstances. Even if the claims recite any one of these three groupings of abstract ideas, these claims are still not "directed to" a judicial exception (abstract idea), and thus are patent eligible, if "the claim as a whole integrates the recited judicial exception into a practical application of that exception." *See* 2019 Revised Guidance, 84 Fed. Reg. at 53.

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

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

> judicial exception to a particular technological environment, such that the claim as a whole is more than a drafting effort designed to monopolize the exception — *see* MPEP § 2106.05(e).

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

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

See 2019 Revised Guidance, 84 Fed. Reg. at 54–55 ("Prong Two").

2019 Revised Guidance, Step 2A, Prong One[7]
The Judicial Exception

Under the 2019 Revised Guidance, we begin our analysis by first considering whether the claims recite any judicial exceptions, including certain groupings of abstract ideas, in particular: (a) mathematical concepts, (b) mental steps, and (c) certain methods of organizing human activities.

We note the Examiner concludes all claims 1–4, 6–14, 16–24, 26, and 30–32 recite an abstract idea, i.e., predicting the price behavior of the company using sentiment scores derived from news content. *See* Final Act. 3. The Examiner analogizes Appellant's claimed concept to collecting

[7] Throughout this opinion, we give the claim limitations the broadest reasonable interpretation consistent with the Specification. *See In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997).

information, analyzing it, and displaying certain results of the collection and analysis which has been identified by the courts as abstract. *Id.* In support, the Examiner cites to *Electric Power Group, LLC v. Alstom S.A.* (830 F.3d 1350 (Fed. Cir. 2016)). *See* Final Act. 3.

In Table One below, we identify in *italics* the specific claim limitations that we conclude recite an abstract idea. We also identify in **bold** the additional (non-abstract) claim limitations that are generic computer components:

TABLE ONE

Independent Claim 1	Revised 2019 Guidance
[a] Presented) **A non-transitory computer useable medium** having a set of executable code comprising:	A medium is a statutory subject matter class — a manufacture. *See* 35 U.S.C. § 101 ("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."). The "computer" and "medium" are additional non-abstract limitations.
[b] a first set of computer program code adapted to receive by a document processing module of **a computer** electronic news content comprising a first news story from **a set of databases**;	Receiving information is insignificant extra-solution activity. 2019 Revised Guidance, 55 n.31; *see also* MPEP § 2106.05(g). The "computer" and "set of databases" are additional non-abstract limitations.

Independent Claim 1	Revised 2019 Guidance
[c] a second set of computer program code adapted to process by the document processing module of **the computer** the first news story to *identify* information pertaining to **a first company**;	Document processing is insignificant extra-solution activity. 2019 Revised Guidance, 55 n.31; *see also* MPEP § 2106.05(g). "*identify*" information could be performed alternatively as a mental process. *See* 2019 Rev. Guid. 52. "a first company" and "the computer" are additional non-abstract limitations.
[d] a third set of computer program code adapted to apply by a sentiment scoring module of **the computer** sentiment analysis and *arrive at a first sentiment score* associated with the first news story as it relates to **the first company**;	Abstract idea, i.e., "*arrive at a first sentiment score*" is a "mathematical concept" that could be performed alternatively as a mental process. *See* 2019 Rev. Guid. 52. "the computer" and "the first company" are additional non-abstract limitations.
[e] a fourth set of computer program code adapted to *determine* by the sentiment scoring module of **the computer** a derivative sentiment value related to **the first company** in close to real-time, wherein the derivative sentiment value represents as a function a change in value over time of the first sentiment score as compared to a previous sentiment score, wherein the fourth set of computer program code adapted to determine the	Abstract idea, i.e., *determine* by the sentiment scoring module of **the computer** a derivative sentiment value is a "mathematical concept" that could be performed alternatively as a mental process. *See* 2019 Rev. Guid. 52. "the computer" and "the first company" are additional non-abstract limitations.

Independent Claim 1	Revised 2019 Guidance
derivative sentiment value comprises the function:	
[f] S = *dx* / *dy*	Abstract idea, i.e., "mathematical formula" that could be performed alternatively as a mental process. *See* 2019 Rev. Guid. 52.
[g] wherein the derivative sentiment value, *S*, is the derivative of *x*, a first value related to the first company, with respect to *y*, a second value related to the first company, *the first sentiment score being determined temporally proximate to the publication of the first news story and weighted more heavily than the previous sentiment score*, the previous sentiment score representing a set of prior sentiment scores related to **the first company** and determined prior to the first sentiment score over a temporal period extending back in time from the publication of the first news story;	Abstract idea, i.e., "*the first sentiment score being determined temporally proximate to the publication of the first news story and weighted more heavily than the previous sentiment score*" is a mathematical concept that could be performed alternatively as a mental process. *See* 2019 Rev. Guid. 52. "the first company" is an additional non-abstract limitation.
[h] a fifth set of computer program code adapted to *provide by a predictive module* of **the computer** a predictive model *using the derivative sentiment value and the first sentiment*	Abstract idea, i.e., "*provide by a predictive module … using the derivative sentiment value and the first sentiment score to arrive at a predicted price behavior* could be performed alternatively as a mental process (i.e., a mathematical

Independent Claim 1	Revised 2019 Guidance
score to arrive at a predicted price behavior associated with **the first company**, the predictive module having been trained using machine learning by a feature engine, the feature engine having automatically generated a set of features based on historical sentiment data, and wherein the set of features are calibrated by the feature engine by *analyzing a set of historical present data* and are used to more accurately arrive at the predicted price behavior; and	concept applied to a fundamental economic practice). *See* 2019 Rev. Guid. 52. "the computer" and "the first company" are additional non-abstract limitations. Abstract idea, i.e., "*analyzing a set of historical present data*" could be performed alternatively as a mental process. *See* 2019 Rev. Guid. 52.
[i] a sixth set of computer program code adapted to *generate* by the predictive module of the computer *a visual indicator related to and based at least in part on the predicted behavior* in a **graphical user interface** integrated with the document processing module, the sentiment scoring module, and the predictive module by an integration framework module.	"*generate* by the predictive module of the *computer a visual indicator related to and based at least in part on the predicted behavior*" is insignificant post-solution activity. 2019 Revised Guidance, 55 n.31; *see also* MPEP § 2106.05(g). "a **graphical user interface**" is an additional non-abstract limitation.

Abstract Ideas — Mental Processes and Mathematical Formulas

We conclude the *italicized* abstract idea steps identified above in Table One could be performed alternatively as mental processes under the

Revised Guidance, or as a mathematical formula or concept. *See* Claim 1. *See* 2019 Revised Guidance, 84 Fed. Reg. at 52.

Our reviewing court guides: "An abstract idea can generally be described at different levels of abstraction." *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1240 (Fed. Cir. 2016). Moreover, merely combining several abstract ideas does not render the combination any less abstract. *See RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017) ("Adding one abstract idea (math) to another abstract idea . . . does not render the claim non-abstract."); *FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1093–94 (Fed. Cir. 2016) (determining the pending claims were directed to a combination of abstract ideas).

If a method can be performed by human thought alone, or by a human using pen and paper, it is merely an abstract idea and is not patent eligible under § 101. *See CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1372-73 (Fed. Cir. 2011); "That purely mental processes can be unpatentable, even when performed by a computer, was precisely the holding of the Supreme Court in *Gottschalk v. Benson*." *CyberSource*, 654 F.3d at 1375. *See also Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1146–47 (Fed. Cir. 2016).

Moreover, "[u]sing a computer to accelerate an ineligible mental process does not make that process patent-eligible." *Bancorp Services, L.L.C. v. Sun Life Assur. Co. of Canada* (U.S.), 687 F.3d 1266, 1279 (Fed. Cir. 2012); *see also OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1363 (Fed. Cir. 2015) ("relying on a computer to perform routine tasks more quickly or more accurately is insufficient to render a claim patent eligible.").

Additional Limitations

As emphasized in **bold** *supra*, we note the additional non-abstract limitation of a generic computer. The computer (implicit because of the recited "*computer* usable medium" (claim 1), the "*computer*-implemented method" (claim 11), and the "*computer*-based system" (Claim 21)) are additional non-abstract limitations (emphasis added). *See* 2019 Revised Guidance, 84 Fed. Reg. at 52. We also note the supporting exemplary descriptions of generic computer, server, database, and network components in the Specification, for example:

> With reference to Fig. 1, access device 130, such as a client device, is generally representative of one or more access devices. In the exemplary embodiment, access device 130 takes the form of a personal computer, workstation, personal digital assistant, mobile telephone, or any other device capable of providing an effective user interface with a server or database. Specifically, access device 130 includes a processor module 131 one or more processors (or processing circuits) 131, a memory 132, a display 133, a keyboard 134, and a graphical pointer or selector 135. Processor module 131 includes one or more processors, processing circuits, or controllers. In the exemplary embodiment, processor module 131 takes any convenient or desirable form. Coupled to processor module 131 is memory 132. Memory 132 stores code (machine-readable or executable instructions) for an operating system 136, a browser 137, document processing software 138. In the exemplary embodiment, operating system 136 takes the form of a version of the Microsoft Windows operating system, and browser 137 takes the form of a version of Microsoft Internet Explorer.

Spec. ¶ 46.

We emphasize that *McRO, Inc. v. Bandai Namco Games America Inc*., (837 F.3d 1299 (Fed. Cir. 2016)), guides: "[t]he abstract idea exception

prevents patenting a *result* where 'it matters not by what process or machinery the result is accomplished.'" 837 F.3d at 1312 (quoting *O'Reilly v. Morse*, 56 U.S. 62, 113 (1854)) (emphasis added).

Independent claims 11 and 21 recite similar language of commensurate scope that we conclude also falls into the same abstract idea categories of mental processes, and mathematical formulas or concepts, as mapped above for independent claim 1. *See supra* Table One. Because we conclude all claims on appeal recite an abstract idea, as identified above, under *Step 2A, Prong One*, we proceed to *Step 2A, Prong Two*.

2019 Revised Guidance, Step 2A, Prong Two

Integration of the Judicial Exception into a Practical Application

Pursuant to the 2019 Revised Guidance, we consider whether there are additional elements set forth in the claims that integrate the judicial exception into a practical application. *See* 2019 Revised Guidance, 84 Fed. Reg. at 54–55.

MPEP § 2106.05(a)
Improvements to the Functioning of a Computer or to Any Other Technology or Technical Field

Appellant argues the claims of the present invention provide an improvement to the functioning of a computer. *See* Appeal Br. 12.

> The use of the specific formula, features, and calibration method as claimed provides the claimed invention with the ability to capture "shocks" that could not be accurately captured or processed using prior systems and methods. The specifically recited components, configurations, and steps of claim 11 provide for an improvement to a computer or technical field

> like the claims at issue in ***Enfish*** and ***McRO***. The claimed method provides for the processing and management of data to generate a useful output and for the automatic configuration of a special purpose computer system that improves upon known systems and methods. Like the claims at issue in ***Enfish***, the feature engine of the claimed invention improves the functioning of a computer by making it faster or more efficient. Specifically, the feature engine enables for the generation of a set of features and for the calibration of the seat of features to more accurately arrive at a predicted price behavior. Similarly, the specifically recited steps, which provide rules like those in ***McRO***, enable a computer to perform a function that it could not have performed previously and which provide for an improvement to the computer system.

Appeal Br. 12–13.

Enfish

Regarding Appellant's arguments analogizing the claims before us on appeal to the subject claim in *Enfish*, we note the *Enfish* court concluded "the claims at issue . . . are not directed to an abstract idea within the meaning of *Alice*. Rather, they are directed to a *specific improvement to the way computers operate*, embodied in the self-referential table." *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1336 (Fed. Cir. 2016) (emphasis added).

Here, the "set of databases" recited in each independent claim does not involve a self-referential table, as was the focus in *Enfish*. Therefore, Appellant's claims do not involve a self-referential database table similar to the specific type of logical table arrangement the *Enfish* court found was designed to improve the way a computer stores and retrieves data in memory. *See Enfish*, 822 F.3d at 1336. Thus, Appellant has not persuasively shown that the recited "set of databases" *improve* the way the

computer stores and retrieves data in a manner analogous to that found by the court in *Enfish*.

McRO

We find Appellant's argument based upon *McRO* unavailing because we conclude Appellant's computer usable medium (claim 1), computer-implemented method (claim 11), and computer-based system (claim 21) are unlike the subject claim(s) considered by the court in *McRO*.[8] *See* Appeal Br. 13.

The patent at issue in *McRO* describes that prior character animation and lip synchronization were accomplished by human animators, with the assistance of a computer, which involved the use of a so-called "keyframe" approach in which animators set appropriate parameters, i.e., morph weights, at certain important times, i.e., in order to produce accurate and realistic lip synchronization and facial expressions. *McRO*, 837 F.3d at 1305. Animators knew what phoneme a character pronounced at a given time from a time-aligned phonetic transcription (a "timed transcript"). *Id*.

In accordance with the prior technique, animators, using a computer, thus, manually determined the appropriate morph weight sets for each keyframe based on the phoneme timings in the timed transcript. *Id*. *See also SAP Am. v. InvestPic, LLC*, 898 F.3d 1161, 1167 (Fed. Cir. 2018) (distinguishing *McRO*):

> The claims in *McRO* were directed to the creation of something physical—namely, the display of "lip synchronization and facial expressions" of animated characters on screens for viewing by human eyes. *Id*. at 1313. *The claimed improvement was to how the physical display operated (to produce better quality images)*, unlike (what is present here) a claimed

[8] Appellant refers to *McRO*, 837 F.3d 1299.

> improvement in a mathematical technique with no improved display mechanism. The claims in *McRO* thus were not abstract in the sense that is dispositive here. And those claims also avoided being "abstract" in another sense reflected repeatedly in our cases (based on a contrast not with "physical" but with "concrete"): they had the specificity required to transform a claim from one claiming only a result to one claiming a way of achieving it.

SAP, 898 F.3d at 1167 (emphasis added).

In contrast to the claimed invention in *McRO* that *improved how a physical display operated to produce better quality images (id.)*, claim 1 merely uses a generic computer to predict a price behavior associated with a company based upon a derivative sentiment value and a first sentiment score.

Thus, Appellant's claims on appeal do not *improve the operation of a physical display*, as was the case in *McRO*, nor the operation of any other computer component, such as the generic computer implicitly required to execute the sets of "computer program code" recited in the body of claim 1. *See SAP*, 898 F.3d at 1167.

Moreover, we conclude Appellant's generic computer implementation performs steps or functions that can be performed alternatively as mental processes, as discussed above. On this record, we see nothing in Appellant's claims that specifically improves the efficiency of the computer, or another technology or technical field.

Accordingly, on this record, we conclude independent claims 1, 11, and 21 do not recite an improvement to the functionality of a computer or other technology or technical field. *See* MPEP § 2106.05(a).

MPEP §§ 2106.05(b) and (c)
The Bilski Machine-or-Transformation test ("MoT")
as applied to method claims 11–14 and 16–20

At the outset, we note the Supreme Court cautions that the *MoT* test is not the sole test, but may provide a useful clue:

> This Court's precedents establish that the machine-or-transformation test is a useful and important clue, an investigative tool, for determining whether some claimed inventions are processes under § 101. The machine-or-transformation test **is not the sole test** for deciding whether an invention is a patent-eligible "process."

Bilski, 561 U.S. at 604 (emphasis added).

Because a generic computer is implicit in the computer-implemented method claims on appeal, we conclude method claims 11–14 and 16–20 do not define or rely upon a "particular machine." *See* MPEP § 2106.05(b). Further, we conclude these method claims do not transform an article to a different state or thing. *See* MPEP § 2106.05(c).

We note Appellant advances no arguments regarding the *Bilski* Machine-or-Transformation test in the Briefs. To the extent that the method claims on appeal might effect a *transformation of data*, we note the "[t]ransformation and reduction of an article 'to a different state or thing' is the clue to the patentability of a process claim that does not include particular machines." *Gottschalk v. Benson*, 409 U.S. at 70. "The mere manipulation or reorganization of data, however, does not satisfy the transformation prong." *CyberSource*, 654 F.3d at 1375.

Thus, without more, we conclude method claims 11–14 and 16–20 do not use a "particular machine" to apply the judicial exception (see MPEP

§ 2106.05(b)), or perform a transformation of an article to a different state or thing (see MPEP § 2106.05(c)).

MPEP § 2106.05(e) — Meaningful Claim Limitations [9]

The Examiner finds: "The claim(s) do not include additional elements that are sufficient to amount to significantly more than the judicial exception because the additional computer elements are recited at a high level of generality and in doing so provide conventional computer function[s] that do not add *meaningful limitations* to practicing the abstract idea." Final Act. 2 (emphasis added).

Appellant argues:

> The Examiner did not examine the claims as a whole or as an ordered combination, because if he had he would see that what is claimed has a specific way in which the derivative sentiment value or sentiment values are determined. This **meaningful limitation** consists of a specific formula, S = *dx*/*dy'* which is apparent in the amended independent claims and dependent claims 26-29. This certainly adds a meaningful limitation beyond the abstract idea of "simply organiz[ing] and compar[ing] data without significantly more."

Appeal Br. 20 (emphasis added).

We disagree, because Appellant's claimed derivative is a mathematical formula that is an abstract idea per se. Moreover, to the extent that the derivative formula is used to obtain a derivative sentiment value that

[9] MPEP § 2106.05(e): "Applying or using the judicial exception in some other *meaningful* way beyond generally linking the use of the judicial exception to a particular technological environment, such that the claim as a whole is more than a drafting effort designed to monopolize the exception." (emphasis added).

is used to calculate "the first sentiment score to arrive at a predicted price behavior associated with the first company" (claim 1), we note an improved abstract idea it is still an abstract idea. *See Mayo*, 566 U.S. at 90 (holding that a novel and nonobvious claim directed to a purely abstract idea is, nonetheless patent-ineligible).

We see nothing in Appellant's claims that specifically improves the efficiency of the computer, or another technology or technical field, as addressed above under MPEP § 2106.05(a). Appellant does not advance further substantive arguments to any particular "meaningful" claim limitations, such as those of the types addressed under MPEP § 2106.05(e), that impose meaningful limits on the judicial exception.

Accordingly, on this record, we conclude representative claim 1 has no other argued meaningful limitations, as considered under section 2106.05(e) of the MPEP, pursuant to the 2019 Revised Guidance.

MPEP § 2106.05(f)
Merely including instructions to implement
an abstract idea on a computer, or
Merely using a computer as a tool
to perform an abstract idea

As noted above, the Examiner finds: "The claim(s) do not include additional elements that are sufficient to amount to significantly more than the judicial exception because the additional computer elements are recited at a high level of generality and in doing so provide conventional computer function[s] that do not add meaningful limitations to practicing the abstract idea." Final Act. 2.

Without more, we agree with the Examiner that Appellant's claimed

invention merely implements the abstract idea using generic computer components, as depicted in **bold** type in Table One, and as supported in our reproduction of the Specification, paragraph 46, *supra*.

MPEP § 2106.05(g)
Adding insignificant extra-solution activity
to the judicial exception

As mapped in the right column of Table One, *supra*, we conclude representative independent claim 1 recites extra-solution activities that courts have determined to be insufficient to transform judicially excepted subject matter into a patent-eligible application. *See* MPEP § 2106.05(g); 84 Fed. Reg. at 55 n.31.

MPEP § 2106.05(h)
Generally linking the use of the judicial exception to a particular technological environment or field of use

The Supreme Court guides: "the prohibition against patenting abstract ideas 'cannot be circumvented by attempting to limit the use of the formula to a particular technological environment' or [by] adding 'insignificant post solution activity.'" *Bilski*, 561 U.S. at 611–12, (quoting *Diamond v. Diehr*, 450 U.S. 175, 191–92 (1981)).

Appellant argues that the claims of the present invention could not be performed in the human mind. Appeal Br. 16.

But see "*Intellectual Ventures I LLC v. Symantec Corp*., 838 F.3d 1307, 1318 (Fed. Cir. 2016) ('[W]ith 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.')."

84 Fed. Reg. at 52 n.14. Moreover, the "performance of a claim limitation using generic computer components does not necessarily preclude the claim limitation from being in the mathematical concepts grouping, *Benson*, 409 U.S. at 67, or the certain methods of organizing human activity grouping, *Alice*, 573 U.S. at 219-20." 84 Fed. Reg. at 52 n.14.

Preemption

Appellant further contends: "even if the claims are directed towards the alleged abstract idea, the claims *do not preempt* every method for processing news stories and determining a sentiment value or derivative sentiment in near real-time because the claims are sufficiently limited when viewing all the limitations and the entirety of the claims as a whole." Appeal Br. 17 (emphasis added).

In response, we note that preemption is not the sole test for patent eligibility. As our reviewing court has explained, "questions on preemption are inherent in and resolved by the § 101 analysis," and, although "preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility." *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015); *cf. OIP* Techs, 788 F.3d at 1362–63 ("[T]hat 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.").

Nor do claims 1–4, 6–14, 16–24, 26, and 30–32 on appeal present any other issues as set forth in the 2019 Revised Guidance regarding a determination of whether the additional generic elements integrate the judicial exception into a practical application. *See* Revised Guidance, 84 Fed. Reg. at 55.

Thus, under *Step 2A, Prong Two* (MPEP §§ 2106.05(a)–(c) and (e)–(h)), we conclude claims 1–4, 6–14, 16–24, 26, and 30–32 **do not integrate the judicial exception into a practical application.** Therefore, we proceed to *Step 2B, The Inventive Concept*.

The Inventive Concept – Step 2B

Under the 2019 Revised Guidance, only if a claim: (1) recites a judicial exception, and (2) does not integrate that exception into a practical application, do we then look to whether the claim adds a specific limitation beyond the judicial exception that is not "well-understood, routine, conventional" in the field (*see* MPEP § 2106.05(d)); **or**, simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.

The Examiner finds:

> The claim 11 recites the additional limitations of a document processing module of a computer, sentiment scoring module of the computer, predictive module of the computer, databases and a graphical user interface integrated with the document processing module, the sentiment scoring module, and the predictive module by an integration framework module. The document processing module, sentiment scoring module and the predictive module are all associated with a computer which is recited at a high level of generality and its broadest reasonable interpretation comprises a general purpose computer (as supported by the specification in [0040]-[0043]) and other computer related conventional components which are performing their *routine, well-understood and conventional* function similar to what has been found by the courts (in Alice) not to be adding significantly more to the underlying abstract idea.

Final Act. 4–5 (emphasis added).

In the Reply Brief, Appellant cites to *Berkheimer v. HP Inc*., 881 F.3d 1360 (Fed. Cir. 2018), and urges: "General statements that the claimed limitations are 'well-understood, routine, and conventional' are not sufficient to show that said limitations were 'well-understood, routine, and conventional' to a person having ordinary skill in the art at the time of invention." Reply Br. 3.

We note the "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 v. HP Inc*., 881 F.3d at 1368; *see also Mortg. Grader, Inc. v. First Choice Loan Servs. Inc*., 811 F.3d. 1314, 1325 (Fed. Cir. 2016) (holding that patent eligibility inquiry may contain underlying issues of fact).

Here, we find Appellant has failed to substantively and persuasively traverse the Examiner's factual findings that specifically rely on paragraphs 40–43 of the Specification as evidence. *See* Final Act. 4–5.

BASCOM [10]

Appellant additionally cites to *Bascom* in support, and urges:

> Specifically, the claimed invention addresses deficiencies in systems and methods provided in the prior art that are not able to properly identify similar entities based on both the significance, degree of significance, and similarity of entities. Like in *Bascom*, the claimed particular arrangement of elements is a technical improvement to [the] Examiner's alleged abstract idea for at least the reason that, like the

[10] *See BASCOM Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016).

> phenomes and morph weights at issue in *McRO* the claimed limitations provide specific rules tied to a technological environment that improve the functioning of the computer system.

Appeal Br. 15.

We find Appellant's analogy to *BASCOM* unavailing. *See id.* The Federal Circuit held in *BASCOM* that the claimed Internet content filtering, which featured an implementation "versatile enough that it could be adapted to many different users' preferences while also installed remotely in a single location," expressed an inventive concept in "the non-conventional and non-generic arrangement of known, conventional pieces." *BASCOM*, 827 F.3d at 1350.

Here, Appellant has not shown a non-conventional, non-generic *arrangement* regarding the non-abstract limitations of generic computer and database components. *See* independent claim 1. *See* 2019 Revised Guidance, 84 Fed. Reg. at 54 n.22. Moreover, we find no *per se* rules recited in any of Appellant's claims, such as was the case with the subject claim considered by the court in *McRO*.

Therefore, it is our view that Appellant's claims do not involve any improvements to another technology, technical field, or improvements to the functioning of the computer or network, as was seen by the court in *BASCOM*. Instead, we conclude Appellant's claims 1–4, 6–14, 16–24, 26, and 30–32 merely invoke generic computer components as a tool in which the instructions executing on the computer apply the judicial exception.

Further, regarding the use of the recited generic computer and "set of databases" identified above in Table One, the Supreme Court has held "the mere recitation of a generic computer cannot transform a patent-ineligible

abstract idea into a patent-eligible invention." *Alice*, 573 U.S. at 223. Our reviewing court provides additional guidance: *See FairWarning*, 839 F.3d at 1096 ("[T]he use of generic computer elements like a microprocessor or user interface do not alone transform an otherwise abstract idea into patent-eligible subject matter."); *OIP Techs*, 788 F.3d at 1363 (claims reciting, *inter alia*, sending messages over a network, gathering statistics, using a computerized system to automatically determine an estimated outcome, and presenting offers to potential customers found to merely recite "'well-understood, routine conventional activit[ies],' either by requiring conventional computer activities or routine data-gathering steps" (alteration in original)).

This reasoning is applicable here. Therefore, on the record before us, Appellant has not shown that the claims on appeal add a specific limitation beyond the judicial exception that is not "well-understood, routine, and conventional" in the field (*see* MPEP § 2106.05(d)).

In light of the foregoing, we conclude, under the 2019 Revised Guidance, that each of Appellant's claims 1–4, 6–14, 16–24, 26, and 30–32, considered as a whole, is *directed to a patent-ineligible abstract idea that is not integrated into a practical application, and does not include an inventive concept.*

Accordingly, for the reasons discussed above, we sustain the Examiner's Rejection under 35 U.S.C. § 101 of claims 1–4, 6–14, 16–24, 26, and 30–32.[11]

[11] To the extent Appellant has not advanced separate, substantive arguments for particular claims, or other issues, such arguments are waived. *See* 37 C.F.R. § 41.37(c)(1)(iv).

CONCLUSION

Under our Revised Guidance, governed by relevant case law, we conclude all claims in the rejection under 35 U.S.C. § 101 are directed to patent-ineligible subject matter, and we sustain the rejection of claims 1–4, 6–14, 16–24, 26, and 30–32.

DECISION SUMMARY

Claims Rejected	Basis	Affirmed	Reversed
1–4, 6–14, 16–24, 26, and 30–32	§ 101	1–4, 6–14, 16–24, 26, and 30–32	

FINALITY AND RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv). *See* 37 C.F.R. § 41.50(f).

AFFIRMED