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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/686,896	04/15/2015	Ming LEI	ORA150664 (O-359)	3818

51444 7590 08/27/2020

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EXAMINER	
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ART UNIT	PAPER NUMBER
3683	

NOTIFICATION DATE	DELIVERY MODE
08/27/2020	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MING LEI and CATALIN POPESCU

Appeal 2020-001496
Application 14/686,896
Technology Center 3600

Before ROBERT E. NAPPI, ST. JOHN COURTENAY III, and ELENI MANTIS MERCADER, *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 1–20. 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 "applicant" as defined in 37 C.F.R. § 1.42(a). According to Appellant, the real party in interest is Oracle International Corporation. *See* Appeal Br. 2.

STATEMENT OF THE CASE [2]

Introduction

Appellant's claimed invention relates generally to "[s]ystems, methods, and other embodiments are disclosed that are configured to generate promotion effects for use by a demand forecast model." Abstract.

Rejection

Claims Rejected	**35 U.S.C. §**	**Reference(s)/Basis**
1–20	101	Eligibility

Rejection under 35 U.S.C. § 101

USPTO § 101 Guidance

The U.S. Patent and Trademark Office (USPTO) has published revised guidance on the application of 35 U.S.C. § 101. *See* USPTO January 7, 2019 Memorandum, 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 ("January 2019 Memorandum").[3]

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[2] We herein refer to the Final Office Action, mailed Jan. 31, 2019 ("Final Act."); Appeal Brief, filed July 1, 2019 ("Appeal Br."); the Examiner's Answer, mailed Oct. 18, 2019 ("Ans."); and the Reply Brief, filed Dec. 18, 2019.

[3] The Office issued a further memorandum on October 17, 2019 (the "October 2019 Memorandum") clarifying guidance of the January 2019 Memorandum in response to received public comments. *See* https://www.uspto.gov/sites/default/files/documents/peg_oct_2019_update.pdf. Moreover, "[a]ll USPTO personnel are, as a matter of internal agency management, expected to follow the guidance." January 2019 Memorandum at 51; *see also* October 2019 Memorandum at 1.

Under that guidance, we first look to whether the claim recites:

> (1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activity such as a fundamental economic practice, or mental processes) (*see* January 2019 Memorandum *Step 2A – Prong One*); and
>
> (2) any additional elements that integrate the judicial exception into a practical application (*see* MPEP § 2106.05(a)–(c), (e)–(h)) (*see* January 2019 Memorandum *Step 2A – Prong Two*).[4]

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:

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

See January 2019 Memorandum *Step 2B*.

Because there is no single definition of an "abstract idea" under *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208 (2014) Step 1, the January 2019 Memorandum synthesizes, for purposes of clarity, predictability, and

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[4] This evaluation is performed by (a) identifying whether there are any additional elements recited in the claim beyond the judicial exception and (b) evaluating those additional elements individually and in combination to determine whether the claim as a whole integrates the exception into a practical application. *See* 2019 October Memorandum, Section III(A)(2), page 10, *et seq*.

consistency, key concepts identified by the courts as abstract ideas to explain that the "abstract idea" exception includes the following three groupings:

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

See January 2019 Memorandum, 84 Fed. Reg. at 52.

According to the January 2019 Memorandum, "[c]laims that do not recite [subject] matter that falls within these enumerated groupings of abstract ideas should not be treated as reciting abstract ideas," except in rare circumstances. Even if the claims recite any one of these three groupings of abstract ideas, these claims are still not "directed to" a judicial exception (abstract idea), and thus are patent eligible, if "the claim as a whole integrates the recited judicial exception into a practical application of that exception." *See* January 2019 Memorandum, 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 including 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 January Memorandum, 84 Fed. Reg. at 54–55 ("Prong Two").

ANALYSIS

January 2019 Memorandum, Step 2A, Prong One
The Judicial Exception

We reproduce *infra* independent claim 1 in Table One. We have considered all of Appellant's arguments and any evidence presented. We highlight and address specific findings and arguments for emphasis in our

analysis below.[5]

The Examiner concludes that independent method claim 1 recites one or more types of abstract ideas:

> These steps relate to an abstract idea which fall[s] under the grouping of a mental process. Additionally[,] the steps relate[] to regression analysis which relate[s] to the abstract idea groupings of mathematical relationships/formulas. The phrase "mathematical relationships/formulas" is used to describe mathematical concepts such as mathematical algorithms, mathematical relationships, mathematical formulas, and calculations.

Final Act. 7.

Under the January and October 2019 Memorandums, 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.

Independent Claim 1

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 claim elements that we find are generic computer components:

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

TABLE ONE

Independent Claim 1	January 2019 Memorandum
[a] A method implemented by **a computing device** configured to execute a computer application, wherein the computer application is configured to process data in electronic form, the method comprising: [6]	**A computing device** is a generic computer component, as shown in bold. *See* January 2019 Memorandum, 84 Fed. Reg. at 52 n.14.
[b] *controlling an algorithm to perform regression analysis* on a plurality of promotion components *in a joint analysis and in a subsequent phased analysis* to mitigate inaccurate results of the joint analysis, the regression analysis comprising:	Abstract Idea: *Controlling an algorithm to perform a regression analysis* is a mathematical concept or calculation that can be performed alternatively by a person as a mental process with the aid of pen and paper. A "plurality of promotion components" involves advertising, marketing or sales activities. Therefore, all claim limitations *infra* that recite "promotion components" and/or "promotion effect values" involve a fundamental economic practice, e.g., *see* Spec. ¶ 2 "Retailers often use promotions to boost sales of items." *See* January 2019 Memorandum, 84 Fed. Reg. at 52.

[6] A method falls under the statutory subject matter class of a process. *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.").

Independent Claim 1	January 2019 Memorandum
	Similarly, *performing a joint analysis and a subsequent phased analysis* can be performed alternatively by a person as a mental process with the aid of pen and paper.
[c] *performing the joint analysis by applying a first regression analysis on historical performance data for an item to generate first promotion effect values by jointly analyzing a plurality of promotion components associated with the item*, wherein the historical performance data includes at least unit sales data and data associated with the plurality of promotion components across a plurality of time periods;	Abstract Idea: *performing the joint analysis by applying a first regression analysis on historical performance data for an item to generate first promotion effect values by jointly analyzing a plurality of promotion components associated with the item* involves a fundamental economic practice (promotion effects and components), and a mathematical concept or calculation (regression analysis) that can be performed alternatively by a person as a mental process with the aid of pen and paper. *See* January 2019 Memorandum, 84 Fed. Reg. at 52.
[d] *comparing the first promotion effect values from the joint analysis to a plurality of first rules to determine if one or more of the plurality of first rules is*	Abstract Idea: *comparing the first promotion effect values from the joint analysis to a plurality of first rules* involves a fundamental economic practice (i.e., promotion effects – sales and advertising) that

Independent Claim 1	January 2019 Memorandum
violated by one or more of the first promotion effect values;	can be performed alternatively by a person as a mental process. *See* January 2019 Memorandum, 84 Fed. Reg. at 52.
[e] if none of the plurality of first rules are violated, *outputting the first promotion effect values to an output data structure* as final promotion effect values for adjusting an order quantity of the item;	Outputting the first promotion effect values to an output data structure is insignificant extra-solution activity (i.e., data transmission). *See* January 2019 Memorandum, 84 Fed. Reg. at 55 n.31; *see also* MPEP § 2106.05(g).
[f] in response to at least one of the plurality of first rules being violated, *setting a flag or signal to indicate that the phased analysis of the regression analysis is to be performed*;	Abstract Idea: *Setting a flag or signal to indicate that the phased analysis of the regression analysis is to be performed* can be performed alternatively by a person as a mental process. *See* January 2019 Memorandum, 84 Fed. Reg. at 52.
[g] in response to the flag or signal being set, *initiating and performing the phased analysis* comprising:	Abstract Idea: *Initiating and performing the phased analysis* can be performed alternatively by a person as a mental process. *See* January 2019 Memorandum, 84 Fed. Reg. at 52.
[h] (i) *selecting a first subset of promotion components from the plurality of promotion components, and performing a second regression analysis on the*	Abstract Idea: *Selecting a first subset of promotion components from the plurality of promotion components, and performing a second regression analysis on the*

Independent Claim 1	January 2019 Memorandum
historical performance data associated to the first subset of promotion components to generate *second promotion effect values* that *identify which promotion components from the first subset are effective for the item*;	*historical performance data* involves a fundamental economic practice (promotions), and a mathematical concept or calculation (regression analysis) that can be performed alternatively by a person as a mental process with the aid of pen and paper. *See* January 2019 Memorandum, 84 Fed. Reg. at 52. Similarly, using *second promotion effect values* to *identify which promotion components from the first subset are effective for the item* involves a fundamental economic practice (promotions including marketing, advertising and sales), that can be performed alternatively by a person as a mental process. *See* January 2019 Memorandum, 84 Fed. Reg. at 52.
[i] (ii) *selecting a second subset of promotion components from the plurality of promotion components, and performing a third regression analysis on the historical performance data* associated to the second subset of promotion components to generate *third promotion effect values* that	Abstract Idea: *Selecting a second subset of promotion components from the plurality of promotion components, and performing a third regression analysis on the historical performance data* involves a fundamental economic practice (promotions including marketing, advertising and sales), that also involves a

Independent Claim 1	January 2019 Memorandum
identify which promotion components from the second subset are effective for the item; and	mathematical concept or calculation that can be performed alternatively by a person as a mental process with the aid of pen and paper. *See* January 2019 Memorandum, 84 Fed. Reg. at 52. Similarly, using *third promotion effect values* to *identify which promotion components from the first subset are effective for the item* involves a fundamental economic practice (promotions including marketing, advertising and sales), that can be performed alternatively by a person as a mental process. *See* January 2019 Memorandum, 84 Fed. Reg. at 52.
[j] (iii) *adjusting the order quantity of the item based on at least the promotion components that are determined to be effective for the item, wherein the second promotion effect values and the third promotion effect values are applied to mitigate results of the joint analysis*.	Abstract Idea: *adjusting the order quantity of the item based on at least the promotion components that are determined to be effective for the item, wherein the second promotion effect values and the third promotion effect values are applied to mitigate results of the joint analysis* involves a fundamental economic practice (promotion components including marketing, advertising and

Independent Claim 1	January 2019 Memorandum
	sales), that can be performed alternatively by a person as a mental process with the aid of pen and paper. *See* January 2019 Memorandum, 84 Fed. Reg. at 52.

Abstract Idea — Step 2A, Prong One Arguments

Appellant contends:

> MPEP [§] 2111 requires the pending claims must be "given their broadest reasonable interpretation consistent with the specification." Thus, the claims cannot be interpreted to be performed in the human mind because such an interpretation is not reasonable and inconsistent with the both the specification and the explicitly recited limitations in the claim. Nothing in the present specification suggests in any way that the invention can be performed in the human mind.

Appeal Br. 11.

Appellant also contends that claim 1 does not recite a mathematical concept. *See* Reply Br. 4.

We disagree on both counts. As identified above in Table One, we conclude steps (b), (c), (f), (h), and (i) recite a mathematical concept or calculation (a "regression analysis") that can be performed alternatively by a person as a mental process with the aid of pen and paper. As clarified in the October 2019 Memorandum:

> A claim that recites a mathematical calculation will be considered as falling within the "mathematical concepts" grouping. A mathematical calculation is a mathematical operation (such as multiplication) or an act of calculating using mathematical methods to determine a variable or number, e.g.,

> performing an arithmetic operation such as exponentiation. There is no particular word or set of words that indicates a claim recites a mathematical calculation. That is, a claim does not have to recite the word "calculating" in order to be considered a mathematical calculation. For example, a step of "determining" a variable or number using mathematical methods or "performing" a mathematical operation may also be considered mathematical calculations when the broadest reasonable interpretation of the claim in light of the specification encompasses a mathematical calculation.

October 2019 Memorandum 4.

Applying this guidance here, we conclude a *regression analysis*, as claimed, may also be considered a mathematical calculation because the broadest reasonable interpretation of claim 1 in light of the specification (e.g., at paragraphs 61–70) encompasses a mathematical calculation.

Moreover, we conclude each recitation of "promotion components" or "promotion effect values" in claim 1 involves advertising, marketing, or sales activities. These are judicial exceptions (abstract ideas) under the January 2019 Memorandum. For example, see the Specification at paragraph 2: "Retailers often use promotions to boost sales of items."

Therefore, we conclude steps (b) (c), (d), (e), (h), (i), and (j), which each recite "promotion effect values" and/or "promotion components" involve a fundamental economic practice, and thus recite an abstract idea. *See* January 2019 Memorandum, 84 Fed. Reg. at 52.

Similarly, we conclude that *all* the steps of method claim 1 that are identified in Table One as reciting an abstract idea can be performed alternatively by a person as a mental process. *See* January 2019 Memorandum, 84 Fed. Reg. at 52. *See also* October 2019 Memorandum, section C: "Mental Processes" page 7.

Although claim 1 requires the recited steps to be performed by "a computing device" this generic computer implementation of a mental process is insufficient to take the invention out of the realm of abstract ideas. See independent claim 17, which recites "a computer" and independent claim 11, which recites "a processor connected to at least one memory."

"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 Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1375 (Fed. Cir. 2011). 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 id.* at 1372–73; *see also Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1335 (Fed. Cir. 2015) ("Courts have examined claims that required the use of a computer and still found that the underlying, patent-ineligible invention could be performed via pen and paper or in a person's mind."); *Alice*, 573 U.S. at 223 ("Stating an abstract idea while adding the words 'apply it with a computer'" is insufficient to confer eligibility.).

Moreover, "[u]sing a computer to accelerate an ineligible mental process does not make that process patent-eligible." *Bancorp Servs., L.L.C. v. Sun Life Assurance Co. of Can. (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) ("[R]elying on a computer to perform routine tasks more quickly or more accurately is insufficient to render a claim patent eligible.").

Merely combining several abstract ideas does not render the combination any less abstract. *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."); *see also 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). Thus, we conclude representative claim 1 recites an abstract idea.

Because claim 1 considered as a whole **recites** an abstract idea, as identified in Table One, *supra*, and because remaining independent claims 11 and 17 recite similar language of commensurate scope, we conclude all claims 1–20 recite an abstract idea, as identified above, under *Step 2A, Prong One*. Therefore, we proceed to *Step 2A, Prong Two*.

January 2019 Memorandum, Step 2A, Prong Two

Integration of the Judicial Exception into a Practical Application [7]

The Examiner finds: "the claims do not include additional elements that are sufficient to amount to significantly more than the judicial exception because the additional computer elements, which are recited at a high level

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[7] Under the January 2019 Memorandum, at *Step 2A, Prong Two*, we determine whether the claims recite:

(i) an improvement to the functioning of a computer;
(ii) an improvement to another technology or technical field;
(iii) an application of the abstract idea with, or by use of, a particular machine (for method or process claims);
(iv) a transformation or reduction of a particular article to a different state or thing (for method or process claims); or
(v) other meaningful limitations beyond generally linking the use of the abstract idea to a particular technological environment.

of generality, provide conventional computer functions that do not add meaningful limits to practicing the abstract idea." Final Act. 7.

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

Additional Limitations

As emphasized in bold in Table One, *supra*, we note the additional generic computer component recited in claim 1: "a computing device." Similarly, independent claim 17 recites "a computer" and independent claim 11 recites "a processor connected to at least one memory."

We further note the supporting exemplary, non-limiting descriptions of generic computer components in the Specification, as found by the Examiner:

> When looking at these additional elements individually, each step does no more than require a generic computer to perform generic computer functions, the computer components are recited purely functional and generic. ¶0097-0099 recite general purpose computer configurations. ¶0097 states generally describing an example configuration of the computer 600, the processor 602 may be a variety of various processors including dual microprocessor and other multi-processor architectures. A memory 604 may include volatile memory and/or non-volatile memory. Non-volatile memory may include, for example, ROM, ROM, and so on. Volatile memory may include, for example, RAM, SRAM, DRAM, and so on. This shows general purpose computer configurations. See MPEP 2106.05.

Ans. 8.

We emphasize that *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299 (Fed. Cir. 2016), guides: "The 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 (1853)) (emphasis added). *See supra*, Table One.

Thus, we conclude Appellant's claimed invention merely implements the abstract idea using *instructions* executed on generic computer components, as depicted in Table One (above), and as supported in Appellant's Specification, for example, at paragraphs 97–100. Therefore, we conclude Appellant's claims merely use a generic programmed computer as a tool to perform an abstract idea. *See* MPEP § 2106.05(f).

As mapped in the right column of Table One, *supra*, we conclude that independent claim 1 recites several additional limitations that are extra-solution activities the courts have determined to be insufficient to transform judicially excepted subject matter into a patent-eligible application. *See* MPEP § 2106.05(g); January 2019 Memorandum, 84 Fed. Reg. at 55 n.31.

For example, *see supra* Claim 1, Table One, step (e). We conclude that "*outputting the first promotion effect values to an output data structure*" is insignificant extra-solution activity (i.e., data transmission). Claim 1 (emphasis added). *See* January 2019 Memorandum, 84 Fed. Reg. at 55 n.31; *see also* MPEP § 2106.05(g). *See buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014) ("That a computer receives and sends the information over a network—with no further specification—is not even arguably inventive.").

These extra or post-solution limitations use a generic computer component that performs a generic computer function as a tool to perform an abstract idea. Thus, these limitations do not integrate the abstract idea into a practical application. *See Alice*, 573 U.S. at 223–24.

Instead, these limitations merely perform insignificant extra-solution activities. *Cf. Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1242 (Fed. Cir. 2016) (agreeing with the Board that printing and downloading generated menus are insignificant post-solution activities). *See also Two-Way Media Ltd. v. Comcast Cable Commc'ns, LLC*, 874 F.3d 1329, 1341 (Fed. Cir. 2017) (streaming audio/visual data over a communications system like the Internet held patent ineligible.).

We consider next the question of whether there are any claimed improvements to the functioning of a computer or to any other technology or technical field, applying the January 2019 Memorandum and the guidance set forth under MPEP § 2106.05(a).

The Examiner finds:

> The claims do not show [] a technological improvement. The claims are geared toward providing an improved algorithm to mitigate inaccurate results of a joint analysis as well as accurately predict[ing] promotional effects in [a] retail business in relation to forecast demanding. Having a better algorithm or a better mathematical process is not analogous to an improvement in the computer itself. The claims and specification[] fail to show an improvement to a computer. The claims are geared toward improving a business process side of promotional effects and forecast demanding and [do] not show an improvement on the technological side.

Final Act. 3 (emphasis added).

Appellant disagrees with the Examiner. Appellant urges that "[t]he controlled regression analysis with joint analysis and phased analysis is explicitly recited in the claim and is an improvement to previous technological processes." Appeal Br. 16. Appellant further contends:

> Mitigating inaccurate results is an improvement to a computer and its technological processes. Performing two phases based on detected errors is an improvement to inventory controlled computer processes. These are meaningful limitations. Thus the claim is directed to an improvement to the existing technological processes of regression analysis and inventory control. The claim is not directed to an abstract idea.

Appeal Br. 16.

To the extent that Appellant claims an improved approach to "controlled regression analysis with joint analysis and phased analysis" (Appeal Br. 16), an improved abstract idea is still an abstract idea. *See Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 90 (2012) (holding that a novel and nonobvious claim directed to a purely abstract idea is, nonetheless, patent ineligible). *See also Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1151 (Fed. Cir. 2016) ("[A] claim for a *new* abstract idea is still an abstract idea.").

Regarding independent claims 1, 11, and 17, our reviewing court provides further applicable guidance: The "'mere automation of manual processes using generic computers' . . . 'does not constitute a patentable improvement in computer technology.'" *Trading Techs. Int'l, Inc. v. IBG LLC*, 921 F.3d 1378, 1384 (Fed. Cir. 2019) (quoting *Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044, 1055 (Fed. Cir. 2017)).

Simply adding generic hardware and computer components to perform abstract ideas does not integrate those ideas into a practical application, because the "mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention." *Alice*, 573 U.S. at 223; *see* January 2019 Memorandum, 84 Fed. Reg. at 55, n.30; *see id.* at 55 ("merely includ[ing] instructions to implement an abstract

idea on a computer" is an example of when an abstract idea has not been integrated into a practical application).

As set forth under MPEP § 2106.05(a):

> To show that the involvement of a computer assists in *improving the technology*, the claims *must recite the details regarding how a computer aids the method, the extent to which the computer aids the method, or the significance of a computer to the performance of the method*. Merely adding generic computer components to perform the method is not sufficient. Thus, the claim must include more than mere instructions to perform the method on a generic component or machinery to qualify as an improvement to an existing technology.

(Emphasis added).

Here, we find Appellant has not persuasively shown how the claims "*recite the details regarding how a computer aids the method, the extent to which the computer aids the method, or the significance of a computer to the performance of the method*." MPEP § 2106.05(a) (emphasis added).

Accordingly, on this record, we conclude independent claims 1, 11, and 17, which recite similar limitations of commensurate scope, do not recite an improvement to the functionality of a computer or other technology or technical field. *See* MPEP § 2106.05(a).

Further, Appellant advances no arguments that any of the method claims on appeal are tied to a particular machine, or transform an article to a different state or thing. *See* MPEP § 2106.05(b), 2106.05(c).

Appellant additionally contends that "[t]he present invention is a novel process that improves the functioning of the computer and existing technological processes for at least generating more accurate data and controlling order quantities in an improved manner (two phased technique). These are meaningful limitations." Appeal Br. 16.

In support, Appellant urges: "Claim 1 does not recite a known business process and then simply perform that known process on a computer." *Id.*

However, we have addressed this argument *supra*: *See Mayo Collaborative Servs.*, 566 U.S. at 66 (holding that a novel and nonobvious claim directed to a purely abstract idea is, nonetheless, patent ineligible). "Groundbreaking, innovative, or even brilliant discovery does not by itself satisfy the § 101 inquiry." *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 591 (2013); *see also Diamond v. Diehr*, 450 U.S. 175, 188–89 (1981) ("The 'novelty' of any element or steps in a process, or even of the process itself, is of no relevance in determining whether the subject matter of a claim falls within the § 101 categories of possibly patentable subject matter."); *Affinity Labs. of Texas, LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1263 n.3 (Fed. Cir. 2016) (noting that an eligibility finding does not turn on the novelty of using a user-downloadable application for the particular purpose recited in the claims). Moreover, an improved abstract idea 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).

On this record, we find no "meaningful" claim limitations, such as those of the types addressed under MPEP § 2106.05(e), that impose meaningful limits on the judicial exception.[8]

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[8] *See* January 2019 Memorandum, 84 Fed. Reg. at 55, citing MPEP § 2106.05(e): "[A]ppl[ying] or us[ing] the judicial exception in some other *meaningful* way beyond generally linking the use of the judicial exception to

"[T]he 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 postsolution activity.'" *Bilski v. Kappos*, 561 U.S. 593, 610–12 (2010) (quoting *Diehr*, 450 U.S. at 191–92). *See* MPEP § 2106.05(h). We note Appellant advances no arguments regarding a lack of preemption in the Appeal Brief.

Nor do claims 1–20 present any other issues as set forth in the January and October 2019 Memorandums regarding a determination of whether the additional generic computer elements integrate the judicial exception into a practical application.

Thus, under *Step 2A, Prong Two* (MPEP § 2106.05(a)–(c) and (e)–(h)), we conclude claims 1–20 do not integrate the judicial exception into a practical application.

The Inventive Concept – Step 2B

Under the January 2019 Memorandum, 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.

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a particular technological environment, such that the claim as a whole is more than a drafting effort designed to monopolize the exception." (Emphasis added).

Berkheimer v. HP Inc., 881 F.3d 1360 (Fed. Cir. 2018)

Berkheimer was decided by the Federal Circuit on February 8, 2018. On April 19, 2018, the PTO issued the Memorandum titled: "Changes in Examination Procedure Pertaining to Subject Matter Eligibility, Recent Subject Matter Eligibility Decision (*Berkheimer v. HP, Inc.*)" (hereinafter "*Berkheimer* Memorandum").[9] The *Berkheimer* Memorandum provided specific requirements for an Examiner to support with evidence any finding that *claim elements* (or a *combination of elements*) are well-understood, routine, or conventional.

Appellant contends:

> The application of *Berkheimer* is not conditional upon the Examiner using or not using the rational of the claim being well-understood, routine, and conventional. The Examiner cannot avoid *Berkheimer*. *Berkheimer* is a test that applies to all claims. It is clear from the analysis in the FOA that the Examiner identified all elements of claim 1 and excluded them all from the Step 2B analysis because he believed the elements were well-understood, routine, and conventional (see FOA pages 7-9).

Appeal Br. 19 (emphasis added).

However, the record supports the Examiner's response (Ans. 7) that the Examiner made no findings that any claim elements were well-understood, routine, and conventional in the Final Action.

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[9] Available at https://www.uspto.gov/sites/default/files/documents/memo-berkheimer-20180419.PDF.

To the extent that the Examiner finds *repetitive calculations* were well-understood, routine, and conventional in the Answer (7), we note the Examiner supports this finding with case law as *Berkheimer* evidence:[10]

> Performing repetitive calculations, *Flook*, 437 U.S. at 594, 198 USPQ2d at 199 (re-computing or readjusting alarm limit values); *Bancorp Services v. Sun Life*, 687 F.3d 1266, 1278, 103 USPQ2d 1425, 1433 (Fed. Cir. 2012) ("The computer required by some of *Bancorp's* claims is employed only for its most basic function, the performance of repetitive calculations, and as such does not impose meaningful limits on the scope of those claims.")

Ans. 7.

We find Appellant has not substantively traversed this *Berkheimer* type 2 case law evidence in the Reply Brief. Arguments not made are waived. *See* 37 C.F.R. § 41.37(c)(1)(iv).

Therefore, in light of the foregoing, and under the January 2019 and October 2019 Memorandums, we conclude that each of Appellant's claims 1–20, 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, we sustain the Examiner's rejection under 35 U.S.C. § 101 of representative claim 1, and the rejection of grouped claims 2–20 (not argued separately), which fall with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv).

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[10] "2. A citation to one or more of the court decisions discussed in MPEP § 2106.05(d)(II) as noting the well-understood, routine, conventional nature of the additional element(s)." *Berkheimer* Memorandum 4.

CONCLUSION

Under the January and October 2019 Memorandums, we conclude that claims 1–20, rejected under 35 U.S.C. § 101, are directed to patent-ineligible subject matter.

DECISION SUMMARY

Claims Rejected	**35 U.S.C. §**	**Reference(s)/Basis**	**Affirmed**	**Reversed**
1–20	101	Eligibility	1–20	

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