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| Jenkins, Wilson, Taylor & Hunt, P.A.<br>3015 Carrington Mill Boulevard<br>Suite 550<br>Morrisville, NC 27560 |             |                      | TINKLER, MURIEL S   |                  |
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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* EDWARD M. LEE

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Appeal 2018-005738  
Application 14/262,583  
Technology Center 3600

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Before LARRY J. HUME, MELISSA A. HAAPALA, and  
JULIET MITCHELL DIRBA, *Administrative Patent Judges*.

HUME, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant,<sup>1</sup> Mastercard International Incorporated, appeals from the Examiner's decision rejecting claims 1–4, 6–13, and 15–20, which are all claims pending in the application. Appellant has canceled claims 5 and 14.<sup>2</sup> We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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<sup>1</sup> We use the word “Appellant” to refer to “Applicant” as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as MasterCard International Incorporated. App. Br. 2.

<sup>2</sup> *See* Request for Reconsideration After Non-Final Rejection filed Jan. 7, 2016.

## STATEMENT OF THE CASE<sup>3</sup>

### *The Invention*

The claims are directed to methods, systems and computer readable media for determining criminal propensities in a geographic location based on purchase card transaction data. *See* Spec. 1 (Title). In particular, Appellant’s disclosed embodiments and claimed invention relate to “the use of purchase card transaction information to generate a model for predicting the likelihood of criminal activity in a geographic region or area.” Spec. 1, ll. 6–8.

### *Exemplary Claim*

Claim 1, reproduced below, is representative of the subject matter on appeal:

1. A method for determining criminal propensities in a geographic location based on purchase card transaction data, the method comprising:

utilizing, by a processing server, purchase card transaction data associated with purchase card transactions conducted during a designated time period to determine a plurality of first normalized regional expenditure indices corresponding to a plurality of industry categories for a first geographic location, wherein the purchase card transaction data is obtained from a purchase card transaction data repository by the processing server, wherein each of the plurality of first normalized regional expenditure indices corresponding to the plurality of industry categories is equal to a quotient of a

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<sup>3</sup> Our decision relies upon Appellant’s Appeal Brief (“App. Br.,” filed Dec. 27, 2017); Reply Brief (“Reply Br.,” filed May 11, 2018); Examiner’s Answer (“Ans.,” mailed Mar. 13, 2018); Final Office Action (“Final Act.,” mailed June 30, 2017); and the original Specification (“Spec.,” filed Apr. 25, 2014).

regional consumer card transaction expenditure per capita of an industry category within the first geographic location and a national consumer card transaction expenditure per capita of the industry category;

generating, by the processing server, an algorithmic model based on correlations between each of the first normalized regional expenditure indices and a plurality of criminal offense types committed during the designated time period and in the first geographic location, wherein the algorithmic model includes ratio model parameters correlating each of the first normalized regional expenditure indices to a number of committed offenses associated with each of the plurality of criminal offense types, wherein data representative of the plurality of criminal offense types is included in criminal activity data obtained from a criminal offense data repository by the processing server; and

applying, by the processing server, the algorithmic model to each of a plurality of second normalized regional expenditure indices corresponding to the plurality of industry categories associated with a second geographic location in order to determine a criminal propensity indicator in the second geographic location for each of the plurality of criminal offense types, wherein the criminal propensity indicator includes a numeric value that represents a number of probable criminal offenses associated with each of the plurality of criminal offense types committed in the second geographic location.

App. Br. 19–20 (Claims Appendix).

*Rejection on Appeal*<sup>4</sup>

Claims 1–4, 6–13 and 15–20 stand rejected under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter. Final Act. 3.

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<sup>4</sup> In the event of further prosecution, we invite the Examiner’s attention to dependent claims 6, 7, 15, and 16 for either cancellation or rejection as being indefinite under 35 U.S.C. § 112(b). These claims variously depend from

## CLAIM GROUPING

Based on Appellant’s arguments (App. Br. 10–17) and our discretion under 37 C.F.R. § 41.37(c)(1)(iv), we decide the appeal of the patent-ineligible subject matter rejection of claims 1–4, 6–13, and 15–20 on the basis of representative claim 1.<sup>5</sup>

## ISSUE

Appellant argues (App. Br. 10–17; Reply Br. 2–5) 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:

Under the USPTO’s Revised Guidance, informed by our governing case law concerning 35 U.S.C. § 101, is claim 1 patent-ineligible under § 101?

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canceled claims 5 and 14, which were canceled by Appellant in an Amendment filed January 7, 2016.

<sup>5</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).

## PRINCIPLES OF LAW

### A. 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.<sup>6</sup>

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) (brackets in original) (citing *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. 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.”); *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

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<sup>6</sup> This threshold analysis of whether a claim is directed to one of the four statutory categories of invention, *i.e.*, a process, machine, manufacture, or composition of matter, is referred to as “*Step 1*” in the USPTO’s patent-eligibility analysis under § 101. Manual of Patent Examining Procedure (MPEP) § 2106.

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, 67 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as “molding rubber products” (*Diehr*, 450 U.S. at 191); “tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores” (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S. 252, 267–68 (1853))); 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 “[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.* (citation omitted) (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.”).

Abstract ideas may include, but are not limited to, fundamental economic practices, methods of organizing human activities, and mathematical formulas or relationships. *Alice*, 573 U.S. at 217–21. 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 217 (“[W]e tread carefully in construing this exclusionary principle lest it swallow all of patent law.”).

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.*

#### B. USPTO Revised Guidance

The USPTO recently published revised guidance in the Federal Register concerning the application of § 101. *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (January 7, 2019) (hereinafter “Revised Guidance”) (<https://www.govinfo.gov/content/pkg/FR-2019-01-07/pdf/2018-28282.pdf>).

Under the Revised 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);<sup>7</sup> and

(2) additional elements that integrate the judicial exception into a practical application (*see* Manual for Patent Examining Procedure (“MPEP”) §§ 2106.05(a)–(c), (e)–(h)).<sup>8</sup>

*See* Revised Guidance 52–53.

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.<sup>9</sup>

*See* Revised Guidance 56.

*Step 2A(i) – Abstract Idea*

Informed by our judicial precedent, the Revised Guidance extracts and synthesizes key concepts identified by the courts as abstract ideas to explain that the abstract idea exception includes the following groupings of subject matter, when recited as such in a claim limitation:

(a) Mathematical concepts—mathematical relationships, mathematical formulas or equations, mathematical calculations;

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<sup>7</sup> Referred to as “*Revised Step 2A, Prong 1*” in the Revised Guidance (hereinafter “*Step 2A(i)*”).

<sup>8</sup> Referred to as “*Revised Step 2A, Prong 2*” in the Revised Guidance (hereinafter “*Step 2A(ii)*”).

<sup>9</sup> 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*.

(b) 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); and

(c) Mental processes—concepts performed in the human mind (including an observation, evaluation, judgment, opinion).

Under the Revised Guidance, if the claim does not recite a judicial exception (a law of nature, natural phenomenon, or subject matter within the enumerated groupings of abstract ideas above), then the claim is patent-eligible at *Step 2A(i)*. This determination concludes the eligibility analysis, except in rare situations identified in the Revised Guidance.<sup>10</sup>

However, if the claim recites a judicial exception (i.e., an abstract idea enumerated above, a law of nature, or a natural phenomenon), the claim requires further analysis for a practical application of the judicial exception in *Step 2A(ii)*.

#### *Step 2A(ii) – Practical Application*

If a claim recites a judicial exception in *Step 2A(i)*, we determine whether the recited judicial exception is integrated into a practical application of that exception in *Step 2A(ii)* by: (a) identifying whether there are any additional elements recited in the claim beyond the judicial

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<sup>10</sup> In the rare circumstance in which an examiner believes a claim limitation that does not fall within the enumerated groupings of abstract ideas should nonetheless be treated as reciting an abstract idea, the procedure described in of the Guidance for analyzing the claim should be followed. *See* Revised Guidance, Section III.C.

exception(s); and (b) evaluating those additional elements individually and in combination to determine whether they integrate the exception into a practical application.

The seven identified “practical application” sections of the MPEP,<sup>11</sup> cited in the Revised Guidance under *Step 2A(ii)*, are:

- (1) MPEP § 2106.05(a) Improvements to the Functioning of a Computer or To Any Other Technology or Technical Field
- (2) MPEP § 2106.05(b) Particular Machine
- (3) MPEP § 2106.05(c) Particular Transformation
- (4) MPEP § 2106.05(e) Other Meaningful Limitations
- (5) MPEP § 2106.05(f) Mere Instructions To Apply An Exception
- (6) MPEP § 2106.05(g) Insignificant Extra-Solution Activity
- (7) MPEP § 2106.05(h) Field of Use and Technological Environment

*See Revised Guidance 55.*

If the recited judicial exception is integrated into a practical application as determined under one or more of the MPEP sections cited above, then the claim is not directed to the judicial exception, and the patent-eligibility inquiry ends. *See Revised Guidance 54.* If not, then analysis proceeds to *Step 2B*.

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<sup>11</sup> *See* MPEP §§ 2106.05(a)–(c), (e)–(h). Citations to the MPEP herein refer to revision [R-08.2017]. Sections 2106.05(a), (b), (c), and (e) are indicative of integration into a practical application, while §§ 2106.05(f), (g), and (h) relate to limitations that are not indicative of integration into a practical application.

*Step 2B – “Inventive Concept” or “Significantly More”*

Under our reviewing courts’ precedent, it is possible that a claim that does not “integrate” a recited judicial exception under *Step 2A(ii)* is nonetheless patent eligible. For example, the claim may recite additional elements that render the claim patent eligible even though a judicial exception is recited in a separate claim element.<sup>12</sup> The Federal Circuit has held claims eligible at the second step of the *Alice/Mayo* test (USPTO *Step 2B*) because the additional elements recited in the claims provided “significantly more” than the recited judicial exception (e.g., because the additional elements were unconventional in combination).<sup>13</sup> Therefore, if a claim has been determined to be directed to a judicial exception under *Revised Step 2A*, we must also evaluate the additional elements individually and in combination under *Step 2B* to determine whether they provide an inventive concept (i.e., whether the additional elements amount to significantly more than the exception itself).<sup>14</sup>

Under the Revised Guidance, we must consider in *Step 2B* whether an additional element or combination of elements: (1) “Adds a specific

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<sup>12</sup> See, e.g., *Diehr*, 450 U.S. at 187.

<sup>13</sup> See, e.g., *Amdocs (Israel), Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1300, 1304 (Fed. Cir. 2016); *Bascom Global Internet Services, Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1349–52 (Fed. Cir. 2016); *DDR Holdings v. Hotels.com, L.P.*, 773 F.3d 1245, 1257–59 (Fed. Cir. 2014).

<sup>14</sup> 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 v. HP Inc.*, 881 F.3d 1360, 1368 (Fed. Cir. 2018).

limitation or combination of limitations that are not well-understood, routine, conventional activity in the field, which is indicative that an inventive concept may be present;” or (2) “simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception, which is indicative that an inventive concept may not be present.” *See Revised Guidance, III.B.*<sup>15</sup>

In the *Step 2B* analysis, an additional element (or combination of elements) is not well-understood, routine or conventional unless the examiner finds an evidentiary basis, and expressly supports a rejection in writing with, one or more of the following:

1. A citation to an express statement in the specification or to a statement made by an applicant during prosecution that demonstrates the well-understood, routine, conventional nature of the additional element(s). . . .
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).

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<sup>15</sup> In accordance with existing *Step 2B* guidance, an Examiner’s finding that an additional element (or combination of elements) is well understood, routine, conventional activity must be supported with at least one of the four specific types of evidence required by the USPTO *Berkheimer* Memorandum, as shown above. For more information concerning evaluation of well-understood, routine, conventional activity, *see* MPEP § 2106.05(d), as modified by the USPTO *Berkheimer* Memorandum (USPTO Commissioner for Patents Memorandum dated Apr. 19, 2018, “Changes in Examination Procedure Pertaining to Subject Matter Eligibility, Recent Subject Matter Eligibility Decision (*Berkheimer v. HP, Inc.*)” (hereinafter “*Berkheimer Memo*”).

3. A citation to a publication that demonstrates the well-understood, routine, conventional nature of the additional element(s). . . .

4. A statement that the examiner is taking official notice of the well-understood, routine, conventional nature of the additional element(s). . . .

*See Berkheimer Memo.*

The analysis in *Step 2B* further determines whether an additional element or combination of elements:

(a) Adds a specific limitation or combination of limitations that are not well-understood, routine, conventional activity in the field, which is indicative that an inventive concept may be present; or

(b) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception, which is indicative that an inventive concept may not be present.

Revised Guidance; *see also Berkheimer Memo.*

If the Examiner or the Board determines under *Step 2B* that the element (or combination of elements) amounts to significantly more than the exception itself, the claim is eligible, thereby concluding the eligibility analysis.

However, if a determination is made that the element and combination of elements does not amount to significantly more than the exception itself, the claim is ineligible under *Step 2B*, and the claim should be rejected for lack of subject matter eligibility.

## ANALYSIS

### *Step 1 – Statutory Category*

Claim 1, as a method (process) claim, recites one of the enumerated categories of eligible subject matter in 35 U.S.C. § 101. Therefore, the issue before us is whether it is directed to a judicial exception without significantly more.

#### *Step 2A(i): Does the Claim Recite a Judicial Exception?*

The Examiner determined that “[t]he claims are directed to determining criminal propensities in a geographic location based on purchase card transaction data (see independent claims), which is similar to concepts found to be abstract by the courts.” Final Act. 4.

We conclude claim 1 does not recite the judicial exceptions of either natural phenomena or laws of nature. We evaluate, *de novo*, whether claim 1 recites an abstract idea based upon the Revised Guidance.

Claim 1 recites, in pertinent part, “[a] method for determining criminal propensities in a geographic location based on purchase card transaction data,” that includes the steps of:

(1) “[U]tilizing . . . purchase card transaction data . . . to determine a plurality of first normalized regional expenditure indices corresponding to a plurality of industry categories for a first geographic location . . . wherein each of the plurality of first normalized regional expenditure indices . . . is equal to a quotient of a regional consumer card transaction expenditure per capita of an industry category within the first geographic location and a national consumer card transaction expenditure per capita of the industry category.”

(2) [G]enerating . . . an algorithmic model based on correlations between each of the first normalized regional

expenditure indices and a plurality of criminal offense types committed during the designated time period and in the first geographic location.”

(3) [A]pplying . . . the algorithmic model to each of a plurality of second normalized regional expenditure indices corresponding to the plurality of industry categories associated with a second geographic location in order to determine a criminal propensity indicator in the second geographic location for each of the plurality of criminal offense types.”

Claims App’x.

The Specification provides context as to what the claimed invention is directed to. In this case, the Specification discloses that the invention “relates to the use of purchase card transaction information to generate a model for predicting the likelihood of criminal activity in a geographic region or area,” and further “relates to systems, methods, and computer readable media for determining criminal propensities in a geographic location based on purchase card transaction data.” Spec. 6, ll. 6–11.

Appellant’s Abstract describes the invention as:

Methods, systems, and computer readable media for determining criminal propensities in a geographic location based on customer card transaction data are disclosed. In one example, the method includes utilizing purchase card transaction data associated with purchase card transactions conducted during a designated time period to determine a plurality of first normalized regional expenditure indices corresponding to a plurality of industry categories for a first geographic location. The method further includes generating an algorithmic model based on correlations between each of the first normalized regional expenditure indices and a plurality of criminal offense types committed during the designated time period and applying the algorithmic model to each of a plurality of second normalized regional expenditure indices corresponding to the plurality of industry categories associated

with a second geographic location in order to determine a criminal propensity indicator in the second geographic location for each of the plurality of criminal offense types.

Spec. 23 (Abstract).

The claimed invention as recited in steps (1) through (3), above, uses purchase card transaction data to determine normalized regional expenditure indices related to industry categories in a geographic location, where the indices are determined by calculating a quotient of regional expenditures per capita of an industry category, and a national consumer expenditure per capita of the same industry category. An algorithmic model based upon correlations between the normalized regional expenditure indices and criminal offense types committed during a specific time period in the first geographic location is then applied to normalized regional expenditure indices for industry categories in a second geographic location in order to determine a criminal propensity indicator in the second geographic location for each of a number of different criminal offense types. Simply stated, a correlation factor derived from comparing expenditure indices to criminal offense types in one geographic region is used to extrapolate criminal offense types to a different geographic area based upon expenditure indices in the different geographic area. *See* Spec. ¶¶ 1–2; Fig. 3 (Steps 302–306).

As such, under the broadest reasonable interpretation standard,<sup>16</sup> and under our Revised Guidance, we conclude the claimed invention recites a

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<sup>16</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

mathematical concept. Specifically, the claimed invention includes the following mathematical concepts (mathematical relationships, mathematical formulas or equations, mathematical calculations): utilizing purchase card transaction data to determine a plurality of normalized regional expenditure indices; generating an algorithmic model based on correlations; and applying correlations derived from one set of data to another set of data, as found in limitations (1) through (3).

Appellant alleges “the Examiner has failed to establish a *prima facie* case that the claims are directed to patent-ineligible subject matter.” App. Br. 10. We disagree.

We disagree because the Federal Circuit has repeatedly noted that “the *prima facie* case is merely a procedural device that enables an appropriate shift of the burden of production.” *Hyatt v. Dudas*, 492 F.3d 1365, 1369 (Fed. Cir. 2007) (citing *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992)). The Examiner satisfies the burden of establishing a *prima facie* case under 35 U.S.C. § 132 by setting forth a rejection in a sufficiently articulate and informative manner. *See In re Jung*, 637 F.3d 1356, 1363 (Fed. Cir. 2011). If the Examiner “adequately explain[s] the shortcomings . . . the burden shifts to the applicant to rebut the *prima facie* case with evidence and/or argument.” *Hyatt*, 492 F.3d at 1370.

The Final Office Action adequately explains the § 101 rejection. *See* Final Act. 4–7; Ans. 7–10. The Examiner’s statements satisfy § 132(a)

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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).

because they apply the *Alice* analytical framework and apprise Appellant of the reasons for the § 101 rejection under that framework. Appellant has not responded by alleging a failure to understand the rejection, but that “the Examiner fails to provide any substantive analysis or present any evidence as to why the claimed invention is directed to an abstract idea in the Office Action.” Appeal Br. 11.

Thus, under *Step 2A(i)*, we agree with the Examiner that claim 1’s method for determining criminal propensities in a geographic location based on purchase card transaction data recites an abstract idea. Specifically, under our Revised Guidance, we conclude claim 1 recites the judicial exception of a mathematical concept.<sup>17</sup>

*Step 2A(ii): Judicial Exception Integrated into a Practical Application?*

If the claims are directed to a patent-ineligible concept, as we conclude above, we proceed to the “practical application” *Step 2A(ii)* in which we determine whether the recited judicial exception is integrated into

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<sup>17</sup> Our reviewing court recognizes that “[a]n abstract idea can generally be described at different levels of abstraction.” *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1240 (Fed. Cir. 2016). That need not and, in this case does not, “impact the patentability analysis.” *Id.* at 1241. Further, “[t]he Board’s slight revision of its abstract idea analysis does not impact the patentability analysis.” *Id.* Moreover, 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, whether claim 1 recites a combination of mathematical concepts, mental processes, and certain methods of organizing human activity does not change the outcome of our patentability analysis.

a practical application of that exception by: (a) identifying whether there are any additional elements recited in the claim beyond the judicial exception(s); and (b) evaluating those additional elements individually and in combination to determine whether they integrate the exception into a practical application.

We find each of the limitations of claim 1 recite abstract ideas as identified in *Step 2A(i)*, *supra*, and none of the limitations integrate the judicial exception of a mathematical concept into a practical application, as determined under one or more of the MPEP sections cited above and discussed further below. The claim as a whole merely uses instructions to implement the abstract idea on a computer or, alternatively, merely uses a computer as a tool to perform the abstract idea.

Under analogous circumstances, the Federal Circuit has held that “[t]his is a quintessential ‘do it on a computer’ patent: it acknowledges that [such] data . . . was previously collected, analyzed, manipulated, and displayed manually, and it simply proposes doing so with a computer. We have held such claims are directed to abstract ideas.” *Univ. of Fla. Research Found., Inc. v. Gen. Elec. Co.*, 916 F.3d 1363, 1367 (Fed. Cir. 2019); *see also Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1351 (Fed. Cir. 2016) (“Though lengthy and numerous, the claims do not go beyond requiring the collection, analysis, and display of available information in a particular field, stating those functions in general terms, without limiting them to technical means for performing the functions that are arguably an advance over conventional computer and network technology.”).

Therefore, the claim as a whole merely uses instructions to implement the abstract idea on a computer or, alternatively, merely uses a computer as a

tool to perform the abstract idea. Thus, on this record, Appellant has not shown an improvement or practical application under the guidance of Manual of Patent Examining Procedure section 2106.05(a) (“Improvements to the Functioning of a Computer or to Any Other Technology or Technical Field”) or section 2106.05(e) (“Other Meaningful Limitations”). Nor does Appellant advance any arguments in the Brief(s) that are directed to the *Bilski* machine-or-transformation test, which would only be applicable to the method (process) claims on appeal. See MPEP §§ 2106.05(b) (Particular Machine) and 2106.05(c) (Particular Transformation).

Therefore, we conclude the abstract idea is not integrated into a practical application, and thus the claim is directed to the judicial exception.

*Step 2B – “Inventive Concept” or “Significantly More”*

If the claims are directed to a patent-ineligible concept, as we conclude above, we proceed to the “inventive concept” step. For *Step 2B* 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 of Texas, LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1258 (Fed. Cir. 2016) (quoting *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016)).

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. *Ultramercial, 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*, 573 U.S. at 221. Those “additional features” must be more than “well-understood, routine, conventional activity.” *Mayo*, 566 U.S. at 79.

Limitations referenced in *Alice* that are not enough to qualify as “significantly more” when recited in a claim with an abstract idea include, as non-limiting or non-exclusive examples: adding the words “apply it” (or an equivalent) with an abstract idea<sup>18</sup>; mere instructions to implement an abstract idea on a computer<sup>19</sup>; or requiring no more than a generic computer to perform generic computer functions that are well-understood, routine and conventional activities previously known to the industry.<sup>20</sup>

Evaluating representative claim 1 under step 2 of the *Alice* analysis, we conclude it lacks an inventive concept that transforms the abstract idea of applying correlations relating criminal offense types to expenditure indices into a patent-eligible application of that abstract idea.

The patent eligibility inquiry may contain underlying issues of fact. *Mortg. Grader*, 811 F.3d at 1325. In particular, “[t]he question of whether a claim element or combination of elements is well-understood, routine and

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<sup>18</sup> *Alice*, 573 U.S. at 221–23.

<sup>19</sup> *Alice*, 573 U.S. at 221, *e.g.*, simply implementing a mathematical principle on a physical machine, namely a computer (citing *Mayo*, 566 U.S. at 84–85).

<sup>20</sup> *Alice*, 573 U.S. at 225, *e.g.*, using a computer to obtain data, adjust account balances, and issue automated instructions.

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 recited processing server and various data repositories in method claim 1, system claim 10, and computer readable medium claim 19, the Specification discloses:

[S]ystem 200 may be implemented using conventional computer hardware, processing units, and application software configurations including, for example, distributed server systems. System 200 also may include other conventional hardware and software components that are not shown in Figure 2, such as user terminals and data warehouse query tools.

Spec. 7, ll. 23–28. In addition,

processing server 202 may include a processor (not shown), such as a microprocessor, central processing unit (CPU), or any other like hardware based processor unit that is configured to execute and/or utilize the modules in processing server 202. Each of the depicted modules in processing server 202 may be stored in local memory (not shown), such as random access memory (RAM), read only memory (ROM), optical read/write memory, cache memory, magnetic read/write memory, flash memory, and the like.

Spec. 9, l. 33–10, l. 7.

Thus, because the Specification describes the additional elements in general terms, without describing the particulars, we conclude 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>21</sup>

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<sup>21</sup> Claim terms are to be given their broadest reasonable interpretation, as understood by those of ordinary skill in the art and taking into account

With respect to this step of the analysis, Appellant argues, “[t]he fact that the claims are patentable over the prior art alone controls the outcome because, if the claim elements in combination are novel and nonobviousness, the claims could not possibly be deemed conventional.” App. Br. 14.

In response, we note the Supreme Court emphasizes, “[t]he ‘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.” *Diehr*, 450 U.S. at 188–89 (emphasis added). Our reviewing court further guides that “[e]ligibility and novelty are separate inquiries.” *Two-Way Media Ltd. v. Comcast Cable Commc’ns, LLC*, 874 F.3d 1329, 1340 (Fed. Cir. 2017); *see also Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1263 (Fed. Cir. 2016) (holding that “[e]ven assuming” that a particular claimed feature was novel does not “avoid the problem of abstractness”).

Appellant further argues, “even if appellant's claims involve an abstract idea, the independent claims do not pose a pre-emption risk of any kind, much less one that should render the claims patent ineligible under 35 U.S.C. § 101.” App. Br. 16.

We agree with the Examiner’s response, which is supported by precedent, i.e., “preemption is not a stand-alone factor in determining subject-matter-eligibility . . . the Court has determined that improvements to an abstract idea do not amount to significantly more than the abstract idea (Alice).” Ans. 9; *and see buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350,

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whatever enlightenment may be had from the Specification. *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997).

1355 (Fed. Cir. 2014) (collecting cases); *Accenture Global Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1345 (Fed. Cir. 2013); *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015) (“While preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility”).

Appellant additionally argues, “[a]s is the case here, an inventive concept can be found in the non-conventional and non-generic arrangement of known, conventional pieces.” App. Br. 16 (citing *Bascom*).<sup>22</sup> We disagree.

In *Bascom*, the claims were directed to the inventive concept of providing customizable Internet-content filtering which, under Step 2 of the *Alice* analysis, was found to transform the abstract idea of filtering content into a patent-eligible invention. Although the underlying idea of filtering Internet content was deemed to abstract, under step 2 of the *Alice* analysis, the claims carved out a specific location for the filtering system, namely a remote Internet service provider (ISP) server, and required the filtering system to give users the ability to customize filtering for their individual network accounts. *Bascom*, 827 F.3d at 1349.

We disagree with Appellant’s reliance upon *Bascom* because there is no evidence of record to substantiate the assertion that the claims recite non-conventional and non-generic arrangement of known, conventional elements, as in *Bascom*. Moreover, we find no analogy between Appellant’s determination and use of correlation factors relating criminal offense types

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<sup>22</sup> See *Bascom Global Internet Services, Inc. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016).

to expenditure indices, and the Internet content filtering claims in *Bascom*. Instead, Appellant’s claims merely determine correlation between different sets of data, i.e., expenditure indices and criminal offense types in one geographic area, and extrapolate that correlation to a second geographic area.

The Manual of Patent Examining Procedure, based upon precedential guidance, provides additional considerations with respect to analysis of the well-understood, routine, and conventional nature of the claimed computer-related components.

Another consideration when determining whether a claim recites significantly more than a judicial exception is whether the additional elements amount to more than a recitation of the words “apply it” (or an equivalent) or are more than mere instructions to implement an abstract idea or other exception on a computer. As explained by the Supreme Court, in order to transform a judicial exception into a patent-eligible application, the additional element or combination of elements must do “more than simply stat[e] the [judicial exception] while adding the words ‘apply it’”. *Alice Corp. v. CLS Bank*, 573 U.S. \_\_\_, 134 S. Ct. 2347, 2357, 110 USPQ2d 1976, 1982-83 (2014) (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 72, 101 USPQ2d 1961, 1965). Thus, for example, claims that amount to nothing more than an instruction to apply the abstract idea using a generic computer do not render an abstract idea eligible. *Alice Corp.*, 134 S. Ct. at 2358, 110 USPQ2d at 1983. *See also* 134 S. Ct. at 2389, 110 USPQ2d at 1984 (warning against a § 101 analysis that turns on “the draftsman’s art”) . . . .

In *Alice Corp.*, the claim recited the concept of intermediated settlement as performed by a generic computer. The Court found that the recitation of the computer in the claim amounted to mere instructions to apply the abstract idea on a generic computer. 134 S. Ct. at 2359-60, 110 USPQ2d at 1984.

The Supreme Court also discussed this concept in an earlier case, *Gottschalk v. Benson*, 409 U.S. 63, 70, 175 USPQ 673, 676 (1972), where the claim recited a process for converting binary-coded decimal (BCD) numerals into pure binary numbers. The Court found that the claimed process had no substantial practical application except in connection with a computer. *Benson*, 409 U.S. at 71-72, 175 USPQ at 676. The claim simply stated a judicial exception (e.g., law of nature or abstract idea) while effectively adding words that “apply it” in a computer. *Id.*

MPEP § 2106.05(f) (“Mere Instructions To Apply An Exception”).

With respect to the *Step 2B* analysis, we conclude, similar to *Alice*, the recitation of a method for determining criminal propensities in a geographic location based on purchase card transaction data that includes a processing server and data repositories as argued by Appellant, and similarly for claims 10 and 19, is simply not enough to transform the patent-ineligible abstract idea here into a patent-eligible invention under *Step 2B*. See *Alice*, 573 U.S. at 221 (“[C]laims, which merely require generic computer implementation, fail to transform [an] abstract idea into a patent-eligible invention.”).

We conclude the claims fail the *Step 2B* analysis because claim 1, in essence, merely recites various computer-based elements along with no more than mere instructions to implement the identified abstract idea using the computer-based elements.

Therefore, in light of the foregoing, we conclude, under the Revised Guidance, that Appellant’s claim 1, 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 § 101 rejection of independent claim 1, and grouped

claims 2–4, 6–13, and 15–20, which fall therewith. *See* Claim Grouping, *supra*.

### CONCLUSION

Under our Revised Guidance, governed by relevant case law, claims 1–4, 6–13, and 15–20, rejected under 35 U.S.C. § 101, are directed to patent-ineligible subject matter, and we sustain the rejection.

### DECISION

We affirm the Examiner’s decision rejecting claims 1–4, 6–13 and 15–20.

### DECISION SUMMARY

| <b>Claims Rejected</b> | <b>Basis</b> | <b>Affirmed</b>      | <b>Reversed</b> |
|------------------------|--------------|----------------------|-----------------|
| 1–4, 6–13, and 15–20   | § 101        | 1–4, 6–13, and 15–20 |                 |

### 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**