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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MARIA SINGSON

Appeal 2020-001440
Application 13/483,754
Technology Center 3600

Before JUSTIN BUSCH, CARL L. SILVERMAN, and
JAMES W. DEJMEK, *Administrative Patent Judges*.

DEJMEK, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant¹ appeals under 35 U.S.C. § 134(a) from a Final Rejection of claims 1, 3, 4, 21, 23, 24, 41, 43, 44, 61, 63, and 65. Appellant has canceled claims 2, 5–20, 22, 25–40, 42, 45–60, 62, 64, and 66. *See* Resp. After Final 2–7 (filed March 13, 2019). We have jurisdiction over the remaining pending claims under 35 U.S.C. § 6(b).

We affirm.

¹ Throughout this Decision, we use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42 (2018). Appellant identifies Dun & Bradstreet, Inc. as the real party in interest. Appeal Br. 2.

STATEMENT OF THE CASE

Introduction

Appellant's disclosed and claimed invention generally relates to "a credit behavior network mapping procedure." Spec. ¶ 1. In a disclosed embodiment, a credit behavior network map is based on a data structure that defines paths (i.e., relationships) between a plurality of entities. Spec. ¶ 9. According to the Specification, constructing a credit behavior network map for an entity, "provides a globally accurate financial model that can, for example, identify disruptions of credit at varying points of a credit supply chain and associate those disruptions to an ultimate affect [sic] on the operations of the company of interest." Spec. ¶ 27.

Claims 1, 21, and 41 are independent claims. Claim 1 is representative of the subject matter on appeal (*see* 37 C.F.R. § 41.37(c)(1)(iv)) and is reproduced below:

1. A computer implemented method that creates a credit behavior network map between a plurality of entities, said method comprising:
 - using a processor of said computer in accordance with instructions read from a memory of said computer associated with said processor for:
 - receiving an identifier of a first entity;
 - performing a first search of at least one database that returns an identifier of a second entity having a business relationship with said first entity, wherein said second entity is a creditor of said first entity, said first search also returning an identifier of an entity hierarchically related to said first entity;
 - performing a second search of said at least one database that returns an identifier of a third entity, wherein said third entity is a creditor of said second entity, and an identifier of a fourth

entity that is one of a creditor or a maker of a credit inquiry of said entity hierarchically related to said first entity;

constructing said credit behavior network map in a storage device defined by a data structure based on said identifier of said first entity, said identifier of said second entity, said identifier of said third entity, said identifier of said fourth entity, and an identifier of said entity hierarchically related to said first entity, wherein said credit behavior network map comprises a path between said first entity and said third entity via said second entity, and a path between said first entity and said fourth entity via said entity hierarchically related to said first entity, so that said credit behavior network map is a two dimensional credit behavior network map formed in said storage device;

said data structure being representative of cash flow signals and trends for suppliers and suppliers' suppliers of a said first entity;

printing or displaying the two dimensional credit behavior network map on a printer or on a display, respectively, associated with a user terminal, so that a user can view and act upon information displayed by using said two dimensional credit behavior network map to determine a risk of disruption of a global supply chain of said first entity at varying points of a credit supply chain, and to associate the disruption with an ultimate effect on the operations of the first entity.

The Examiner's Rejections

1. Claims 1, 3, 4, 21, 23, 24, 41, 43, 44, 61, 63, and 65 stand rejected under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter. Final Act. 8–26.²

² We note that the statement of rejection does not include claim 21, but that the body of the rejection does include a detailed rejection of claim 21. *See* Final Act. 8, 14–20. Appellant does not assert prejudice due to the omission of claim 21 in the statement of rejection. Accordingly, we treat the Examiner's omission of claim 21 in the statement of rejection as a harmless typographical error.

2. Claims 1, 4, 21, 24, 41, 44, 61, 63, and 65 stand rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Psota et al. (US 2011/0173093 A1; July 14, 2011) (“Psota”); Pollin (US 5,504,677; Apr. 2, 1996); Baer et al. (US 7,043,488 B1; May 9, 2006) (“Baer”); and Martin Neil, Using “Risk Maps” to visually model & communicate risk 1 (2006), http://web.archive.org/web/20070918030942/http://www.agenarisk.com/resources/Using_Risk_Maps.pdf (“Neil”). Final Act. 27–42, 47–62, 69–84.

3. Claims 3, 23, and 43 stand rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Psota, Pollin, Baer, Neil, and Ito et al. (US 2005/0240483 A1; Oct. 27, 2005) (“Ito”). Final Act. 42–47, 62–69, 84–88.

ANALYSIS³

Rejection under 35 U.S.C. § 101

Appellant disputes the Examiner’s conclusion that the pending claims are directed to patent-ineligible subject matter. Appeal Br. 6–12; Reply Br. 2–4. In particular, Appellant argues the Examiner erred in failing to consider a Declaration by Dr. Xin Yuan (executed version filed October 4, 2018) (“Yuan Decl.”) in which Dr. Yuan asserts the claims provide a technical solution to the technological problem faced by credit managers in determining whether to extend credit to a particular entity. *See* Appeal Br. 6–7; Reply Br. 2; *see also* Yuan Decl. 5. In addition, Appellant

³ Throughout this Decision, we have considered the Appeal Brief, filed July 8, 2019 (“Appeal Br.”); the Reply Brief, filed December 11, 2019 (“Reply Br.”); the Examiner’s Answer, mailed October 11, 2019 (“Ans.”); and the Final Office Action, mailed November 13, 2018 (“Final Act.”), from which this Appeal is taken.

challenges the Examiner’s determination that the claims set forth a mental process and asserts, even if they did, the claims provide a technological improvement by providing a two-dimensional credit behavior map. *See* Reply Br. 4; Appeal Br. 8–12; *see also* Yuan Decl. 5. Moreover, Appellant argues the Examiner failed to conduct an analysis of whether any additional elements (beyond those that recite the alleged judicial exception) or combination of elements are well-understood, routine, and conventional activities in the field, consistent with the requirements under the Office’s *Berkheimer* Memorandum.⁴ Appeal Br. 6, 12; Reply Br. 2; *see also* Yuan Decl. 6–7 (declaring that various steps recited by the independent claims are not considered routine, conventional, and well-understood).

The Supreme Court’s two-step framework guides our analysis of patent eligibility under 35 U.S.C. § 101. *Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 217 (2014). In addition, the Office has published revised guidance for evaluating subject matter eligibility under 35 U.S.C. § 101, specifically with respect to applying the *Alice* framework. USPTO, 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) (“Office

⁴ On April 19, 2018, the Deputy Commissioner for Patent Examination Policy issued a memorandum entitled: Changes in Examination Procedure Pertaining to Subject Matter Eligibility, Recent Subject Matter Eligibility Decision (*Berkheimer v. HP, Inc.*) (i.e., “the *Berkheimer* Memorandum”) (discussing the *Berkheimer* decision) (available at <https://www.uspto.gov/sites/default/files/documents/memo-berkheimer-20180419.PDF>). Support for a finding that an element was well-understood, routine, or conventional may be shown, for example, by citation to one or more court decisions noting the well-understood, routine, conventional nature of the element(s). *See Berkheimer* Memorandum 3–4.

Guidance”).⁵ If a claim falls within one of the statutory categories of patent eligibility (i.e., a process, machine, manufacture, or composition of matter) then the first inquiry is whether the claim is directed to one of the judicially recognized exceptions (i.e., a law of nature, a natural phenomenon, or an abstract idea). *Alice*, 573 U.S. at 217. As part of this inquiry, we must “look at the ‘focus of the claimed advance over the prior art’ to determine if the claim’s ‘character as a whole’ is directed to excluded subject matter.” *Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1257–58 (Fed. Cir. 2016). Per the Office Guidance, this first inquiry (“Step 2A”) has two prongs of analysis: (i) does the claim recite (i.e., set forth or describe) a judicial exception (e.g., an abstract idea such as a mental process), and (ii) if so, is the judicial exception integrated into a practical application. Office Guidance, 84 Fed. Reg. at 54; *see also* MPEP § 2106.04(II)(A). Under the Office Guidance, if the judicial exception is integrated into a practical application, *see infra*, the claim is patent eligible under § 101. Office Guidance, 84 Fed. Reg. at 54–55; *see also* MPEP § 2106.04(d). If the claim is directed to a judicial exception (i.e., recites a judicial exception and does not integrate the exception into a practical application), the next step (“Step 2B”) is to determine whether any element, or combination of elements, amounts to significantly more than the judicial exception. *Alice*, 573 U.S. at 217; Office Guidance, 84 Fed. Reg. at 56; *see also* MPEP § 2106.05.

⁵ The Office Guidance, as well as guidance set forth in the *Berkheimer* Memorandum, have been incorporated into the latest revision of the Manual of Patent Examination Procedure (“MPEP”) §§ 2103–2106.07(c) (9th ed., Rev. 10.2019, June 2020).

Here, we conclude Appellant’s claims recite an abstract idea. More specifically, Appellant’s claims generally describe constructing a two dimensional credit behavior network map for an identified entity. This is consistent with how Appellant describes the claimed invention. *See* Spec. ¶¶ 1 (describing the present disclosure relates to a “credit behavior network mapping procedure”), 8 (describing the disclosed invention as a credit behavior mapping procedure that evaluates cash flow), 27 (describing a method and system for “provid[ing] a forward looking credit network map that provides financial data for a company of interest”); *see also* Appeal Br. 4 (describing the claimed invention as a “method that creates a credit behavior network map between a plurality of entities”). Moreover, it is consistent with the Examiner’s characterization of the claims as a whole. *Cf.* Final Act. 9–10 (identifying that the claims describe mental processes of collecting data, recognizing data and creating a credit map from the data and that “the focus of the invention is to use a credit behavior network map in order to determine risk,” a fundamental economic practice).⁶

⁶ Although we describe the abstract idea slightly differently than the Examiner, the Examiner’s characterization of the idea is not erroneous. “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). The level of abstraction an examiner uses to describe an abstract idea need not “impact the patentability analysis.” *Apple*, 842 F.3d at 1241. That is true here. Regardless of the level of generality used to describe the abstract idea recited, the claims are directed to an abstract idea. *Cf. Accenture Glob. Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1344–45 (Fed. Cir. 2013) (“Although not as broad as the district court’s abstract idea of organizing data, it is nonetheless an abstract concept.”).

Consistent with our Office Guidance and case law, we conclude that the concept of constructing a two dimensional credit behavior network map for an identified entity is a certain method of organizing human activity (e.g., a commercial or legal interaction, including business relations)—i.e., an abstract idea.⁷ *See* MPEP § 2106.04(a)(2)(II)(B); *see also Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044, 1054 (Fed. Cir. 2017) (holding that “processing an application for financing a purchase” falls within certain methods of organizing human activities and is, therefore, an

⁷ Additionally constructing a two dimensional credit behavior network map for an identified entity may be considered a mental process that is applied and performed in a computing environment. *See, e.g.,* Spec. ¶¶ 66–72 (describing the disclosed process of receiving an identifier of an entity for which a credit behavior network map is to be created, searching databases for related entities and entities that are creditors of the received entity and related entities, searching databases for entities that are creditors to the entities that are creditors of the identified entity and its related entities, and constructing a data structure defining paths between the entities); *see also Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1354 (Fed. Cir. 2016) (concluding that “analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, a[re] essentially mental processes within the abstract-idea category”); *Content Extraction & Transmission v. Wells Fargo Bank, N.A.*, 776 F.3d 1343, 1347 (Fed. Cir. 2014) (concluding that claims drawn to collecting data, recognizing certain data within the collected set, and storing the recognized data were patent ineligible, noting that “humans have always performed these functions”); *Smart Sys. Innovations, LLC v. Chicago Transit Auth.*, 873 F.3d 1364, 1372 (Fed. Cir. 2017) (concluding “the collection, storage, and recognition of data” to be abstract); *Digitech Image Techs., LLC v. Elec. for Imaging, Inc.*, 758 F.3d 1344, 1350 (Fed. Cir. 2014) (concluding “a process of organizing information through mathematical correlations and . . . not tied to a specific structure or machine” to be abstract); *Evolutionary Intelligence LLC v. Sprint Nextel Corp.*, 677 F. App’x 679, 680 (Fed. Cir. 2017) (unpublished) (affirming the District Court’s determination that “searching and processing [stored] data” was a patent-ineligible mental process).

abstract idea); *In re Ferguson*, 558 F.3d 1359, 1364 (Fed. Cir. 2009) (concluding the pending claims “directed to organizing business or legal relationships in the structuring of a sales force” were patent ineligible); *Clarilogic, Inc. v. FormFree Holdings Corp.*, 681 F. App’x 950, 954 (Fed. Cir. 2017) (unpublished) (concluding that gathering financial information is abstract—“a method for collection, analysis, and generation of information reports, where the claims are not limited to how the collected information is analyzed or reformed, is the height of abstraction”); *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1367–68 (Fed. Cir. 2015) (concluding that tracking financial transactions to determine whether they exceed a pre-set spending limit was “not meaningfully different” from other ideas found to be abstract involving certain methods of organizing human activity).

Claim 1 is reproduced below and includes the following claim limitations that describe (i.e., recite) the concept of constructing a two dimensional credit behavior network map for an identified entity, emphasized in *italics*:

1. A computer implemented method that creates a credit behavior network map between a plurality of entities, said method comprising:

using a processor of said computer in accordance with instructions read from a memory of said computer associated with said processor for:

receiving an identifier of a first entity;

performing a first search of at least one database that returns an identifier of a second entity having a business relationship with said first entity, wherein said second entity is a creditor of said first entity, said first search also returning an identifier of an entity hierarchically related to said first entity;

performing a second search of said at least one database that returns an identifier of a third entity, wherein said third entity is a creditor of said second entity, and an identifier of a fourth entity that is one of a creditor or a maker of a credit inquiry of said entity hierarchically related to said first entity;

constructing said credit behavior network map in a storage device defined by a data structure based on said identifier of said first entity, said identifier of said second entity, said identifier of said third entity, said identifier of said fourth entity, and an identifier of said entity hierarchically related to said first entity, wherein said credit behavior network map comprises a path between said first entity and said third entity via said second entity, and a path between said first entity and said fourth entity via said entity hierarchically related to said first entity, so that said credit behavior network map is a two dimensional credit behavior network map formed in said storage device;

said data structure being representative of cash flow signals and trends for suppliers and suppliers' suppliers of a said first entity;

printing or displaying the two dimensional credit behavior network map on a printer or on a display, respectively, associated with a user terminal, so that a user can view and act upon information displayed by using said two dimensional credit behavior network map to determine a risk of disruption of a global supply chain of said first entity at varying points of a credit supply chain, and to associate the disruption with an ultimate effect on the operations of the first entity.

More specifically, the concept of constructing a two dimensional credit behavior network map for an identified entity comprises

- (i) identifying the entity for which the credit behavior map is to be created (i.e., the claimed step of receiving an identifier of a first entity);
- (ii) conducting a search to identify (in a first dimension) a creditor entity (and its creditor) of the first entity (i.e., the claimed steps of performing a

search of at least one database to return an identifier of a second entity that is a creditor of the first entity and performing a second search of at least one database to return an identifier of a third entity that is a creditor of the second entity); (iii) conducting a search to identify (in a second dimension) an entity (and its creditor) related to the first entity (i.e., the claimed steps of performing a search of at least one database to return an identifier of an entity that is hierarchically related to the first entity and performing a second search of at least one database to return an identifier of a fourth entity that is a creditor of the hierarchically related entity); and (iv) constructing for the identified first entity a two dimensional credit behavior network map defined by the relationships of the identified entities (i.e., the claimed step of constructing said credit behavior network map in a storage device defined by a data structure based on said identifier of said first entity, said identifier of said second entity, said identifier of said third entity, said identifier of said fourth entity, and an identifier of said entity hierarchically related to said first entity).

Because the claim recites a judicial exception, we next determine whether the claim integrates the judicial exception into a practical application. Office Guidance, 84 Fed. Reg. at 54; *see also* MPEP § 2106.04(d). To determine whether the judicial exception is integrated into a practical application, we identify whether there are “*any additional elements recited in the claim beyond the judicial exception(s)*” and evaluate those elements to determine whether they integrate the judicial exception into a recognized practical application. Office Guidance, 84 Fed. Reg. at 54–55 (emphasis added); *see also* MPEP § 2106.05(a)–(c), (e)–(h).

Here, we find the additional limitations do not integrate the judicial exception into a practical application. More particularly, the claims do not recite (i) an improvement to the functionality of a computer or other technology or technical field (*see* MPEP § 2106.05(a)); (ii) a “particular machine” to apply or use the judicial exception (*see* MPEP § 2106.05(b)); (iii) a particular transformation of an article to a different thing or state (*see* MPEP § 2106.05(c)); or (iv) any other meaningful limitation (*see* MPEP § 2106.05(e)). *See* Office Guidance, 84 Fed. Reg. at 55.

Rather, the additional elements recite, *inter alia*, that the abstract idea is performed by a computer using a processor to execute instructions stored in computer memory. In addition, the limitations describing the credit behavior network map and data structure do not impart patent eligibility but instead merely refine the judicial exception of creating a two dimensional credit behavior network map. Still further, the claimed step of printing or displaying the generated credit behavior network map for a user to make a risk assessment is the type of extra-solution activity (i.e., in addition to the judicial exception) the courts have determined insufficient to transform judicially excepted subject matter into a patent-eligible application. *See* MPEP § 2106.05(g); *see also Parker v. Flook*, 437 U.S. 584, 590 (1978) (explaining “[t]he notion that post-solution activity, no matter how conventional or obvious in itself, can transform an unpatentable principle into a patentable process exalts form over substance”); *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1354 (Fed. Cir. 2016) (recognizing “that merely presenting the results of abstract processes of collecting and analyzing information, without more (such as identifying a particular tool for presentation), is abstract as an ancillary part of such collection and

analysis”); *Bancorp Servs., L.L.C. v. Sun Life Assurance Co. of Can. (U.S.)*, 687 F.3d 1266, 1278 (Fed. Cir. 2012), *aff’g* 771 F. Supp. 2d 1054, 1065 (E.D. Mo. 2011) (explaining that “storing, retrieving, and providing data . . . are inconsequential data gathering and insignificant post solution activity”); *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1167 (Fed. Cir. 2018) (“merely presenting the results of abstract processes of collecting and analyzing information . . . is abstract as an ancillary part of such collection and analysis”) (quotations omitted).

We disagree with Appellant (*see* Appeal Br. 8–11) and Dr. Yuan (*see* Yuan Decl. 3–5)⁸ that the additional elements integrate the judicial exception into a practical application by providing an improvement to the functioning of a computer or other technology.

“To be a patent-eligible improvement to computer functionality, we have required the claims to be directed to an improvement in the functionality of the computer or network platform itself.” *Customedia Techs., LLC v. Dish Network Corp.*, 951 F.3d 1359, 1363 (Fed. Cir. 2020) (discussing the claims in cases such as *Enfish*,⁹ *Visual Memory*,¹⁰ *Gemalto*,¹¹

⁸ As set forth in MPEP § 2106.05(a), it is appropriate and relevant to consider a declaration under 37 C.F.R. § 1.132 regarding “how one of ordinary skill in the art would interpret the disclosed invention as improving technology and the underlying factual basis for that conclusion.”

⁹ *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1337–39 (Fed. Cir. 2016).

¹⁰ *Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253, 1259–60 (Fed. Cir. 2017).

¹¹ *Koninklijke KPN N.V. v. Gemalto M2M GmbH*, 942 F.3d 1143, 1151 (Fed. Cir. 2019).

Ancora,¹² *Finjan*,¹³ and *Data Engine*¹⁴ were all directed to improvements in computer functionality). As discussed above, the claims are not directed to an improvement in computer functionality, but rather are directed to constructing a two dimensional credit behavior network map for an identified entity that is facilitated by a generically claimed and generically described computer system.

Moreover, “claiming the improved speed or efficiency inherent with applying the abstract idea on a computer [is] insufficient to render the claims patent eligible as an improvement to computer functionality.” *Customedia*, 951 F.3d at 1364 (internal quotation and citation omitted); *see also In re Rosenberg*, 813 F. App’x 594, 597 (Fed. Cir. 2020) (unpublished) (determining “[t]he ability to make assessments more quickly to provide instructions on whether to modify a clinical trial is at best an improvement on an abstract process itself and not a technical improvement”); *Interval Licensing LLC v. AOL, Inc.*, 896 F.3d 1335, 1346 (Fed. Cir. 2018) (“It is well-settled that placing an abstract idea in the context of a computer does not ‘improve’ the computer or convert the idea into a patent-eligible application of that idea.”) (internal citation omitted).

Dr. Yuan declares that the results achieved by the claimed method are “not achievable by manual efforts in a consistent and efficient manner.” Yuan Decl. 4. This purported improvement, however, relates to the abstract

¹² *Ancora Techs. Inc. v. HTC Am., Inc.*, 908 F.3d 1343, 1347–49 (Fed. Cir. 2018).

¹³ *Finjan, Inc. v. Blue Coat Sys., Inc.*, 879 F.3d 1299, 1304–06 (Fed. Cir. 2018).

¹⁴ *Data Engine Techs. LLC v. Google LLC*, 906 F.3d 999, 1007–08 (Fed. Cir. 2018).

idea, and does not improve a computer, technology, or a technical field. *See McRO, Inc. v. Bandai Namco Games America, Inc.*, 837 F.3d 1299, 1314 (Fed. Cir. 2016) (“We . . . look to whether the claims in these patents focus on a specific means or method that improves the relevant technology or are instead directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery.”) (citing *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1336 (Fed. Cir. 2016)); *see also* MPEP § 2106.05(a) (“the judicial exception alone cannot provide the improvement”). “[T]he fact that the required calculations could be performed more efficiently via a computer does not materially alter the patent eligibility of the claimed subject matter.” *Bancorp*, 687 F.3d at 1278; *see also OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F. 3d 1359, 1363 (Fed. Cir. 2015) (explaining that “relying on a computer to perform routine tasks more quickly or more accurately is insufficient to render a claim patent eligible”) (citing *Alice*, 573 U.S. at 224 (“use of a computer to create electronic records, track multiple transactions, and issue simultaneous instructions” is not an inventive concept)); *Enfish*, 822 F.3d at 1335–36 (distinguishing between claims wherein the focus of the claims is on an improvement in computer capabilities and those that invoke a computer as a tool); *Two-Way Media Ltd v. Comcast Cable Comms., LLC*, 874 F.3d 1329, 1337–38 (Fed. Cir. 2017) (explaining that the pending claims failed to describe how the claimed architecture led to an improvement in the functioning of the system).

In addition, as provided for in the October 2019 Update: Subject Matter Eligibility (available at https://www.uspto.gov/sites/default/files/documents/peg_oct_2019_update.pdf) (“October Update”), the “specification should be evaluated to determine if the disclosure provides

sufficient details such that one of ordinary skill in the art would recognize the claimed invention as providing the improvement.” October Update at 12; *see also* MPEP § 2106.04(d)(1). “[I]f the specification explicitly sets forth an improvement but in a conclusory manner (i.e., a bare assertion of an improvement without the detail necessary to be apparent to a person of ordinary skill in the art), the examiner should not determine the claim improves technology.” October Update at 12; *see also* MPEP § 2106.04(d)(1). We do not find that the Specification sets forth the requisite details of an alleged technological improvement.

As the court in *Enfish* explained, “the first step in the *Alice* inquiry . . . asks whether the focus of the claims is on the specific asserted improvement in computer capabilities . . . or, instead, on a process that qualifies as an ‘abstract idea’ for which computers are invoked merely as a tool.” *Enfish*, 822 F.3d at 1335–36. As discussed above, the focus of the pending claims is on constructing a two dimensional credit behavior network map for an identified entity and the recited computing elements are invoked merely as a tool. *See Enfish*, 822 F.3d at 1335–36.

Further, the claimed computer, processor, memory, storage device, and databases are generically recited and described in the Specification at a high level of generality. *See* Spec. ¶¶ 29–40, Fig. 1. As such, the claims do not apply or use a particular machine in the context of a method claim. *See Versata Dev. Group v. SAP Am., Inc.*, 793 F.3d 1306, 1335 (Fed. Cir. 2015) (explaining that in order for a machine to add significantly more, it must “play a significant part in permitting the claimed method to be performed, rather than function solely as an obvious mechanism for permitting a solution to be achieved more quickly”); *see also* MPEP § 2106.05(b).

Appellant’s reliance (*see* Appeal Br. 7–8) on a non-binding, non-precedential decision of the Board in *Ex Parte Tavares*, Appeal No. 2017-009694, 2019 WL 645861 (PTAB Jan. 24, 2019) is unavailing. As the Examiner explains (*see* Ans. 4), in *Tavares*, the Board determined the pending claims were patent eligible because they integrated the judicial exception (i.e., a mental process) into a practical application because, in part, the claims further recited generating an interactive formatted graphical report using auto-graphics zones and comprised a plurality of selectable views. *See Tavares*, 2019 WL 645861, at *6. Contrary to Appellant’s assertions (*see* Appeal Br. 8), the generated credit behavior network maps are not *interactive* formatted graphical reports.

For at least the foregoing reasons, the claims do not integrate the judicial exception into a practical application.

Because we determine the claims are directed to an abstract idea or combination of abstract ideas, we analyze the claims under step two of *Alice* (i.e., step 2B of the Office Guidance) to determine if there are additional limitations that individually, or as an ordered combination, ensure the claims amount to “significantly more” than the abstract idea. *Alice*, 573 U.S. at 217–18 (citing *Mayo*, 566 U.S. at 77–79). As stated in the Office Guidance, many of the considerations to determine whether the claims amount to “significantly more” under step two of the *Alice* framework are already considered as part of determining whether the judicial exception has been integrated into a practical application. Office Guidance, 84 Fed. Reg. at 56; *see also* MPEP § 2106.04(d)(I). Thus, at this point of our analysis, we determine if the claims add a specific limitation, or combination of limitations, that is not well-understood, routine, conventional activity in the

field, or simply append well-understood, routine, conventional activities at a high level of generality. Office Guidance, 84 Fed. Reg. at 56; MPEP § 2106.05(II). “Whether something is well-understood, routine, and conventional to a skilled artisan at the time of the patent is a factual determination.” *Berkheimer*, 881 F.3d at 1369.

Here, Appellant’s claims do not recite specific limitations (alone or when considered as an ordered combination) that are not well-understood, routine, and conventional. Appellant describes the components (i.e., a computer, processor, memory, storage device, database) and functions performed by the components (i.e., receiving data, performing a search of a database, processing data (e.g., constructing the credit behavior network map using the relationships between the various entities), and printing or displaying the results) at a high level of generality. *See* Spec. ¶¶ 29–40, 66–72, Figs. 1, 6.

We disagree with Dr. Yuan (*see* Yuan Decl. 6–7) that the recited functions are not routine, conventional, and well-understood. Conventional computer components operating to collect, manipulate, and display data are well understood, routine, and conventional to a skilled artisan. *See Mortg. Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1324–25 (Fed. Cir. 2016) (generic computer components, such as an “interface,” “network,” and “database,” fail to satisfy the inventive concept requirement); *Alice*, 573 U.S. at 226 (“Nearly every computer will include a ‘communications controller’ and [a] ‘data storage unit’ capable of performing the basic calculation, storage, and transmission functions required by the method claims.”); *Intellectual Ventures I LLC v. Erie Indem. Co.*, 850 F.3d 1315, 1327 (Fed. Cir. 2017) (explaining that receiving a

request to execute a database search and delivering records are routine computer functions that can only be described as generic or conventional); *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.”); *In re Katz Interactive Call Processing Patent Litig.*, 639 F.3d 1303, 1316 (Fed. Cir. 2011) (“Absent a possible narrower construction of the terms ‘processing,’ ‘receiving,’ and ‘storing,’ . . . those functions can be achieved by any general purpose computer without special programming.”).

To the extent Appellant contends the claims do not seek to tie-up (i.e., preempt) an abstract idea (*see* Appeal Br. 12), we are unpersuaded of Examiner error. “[W]hile preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility.” *FairWarning IP LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1098 (Fed. Cir. 2016) (quoting *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015)); *see also 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.”). Further, “[w]here a patent’s claims are deemed only to disclose patent ineligible subject matter under the *Mayo* framework, as they are in this case, preemption concerns are fully addressed and made moot.” *Ariosa*, 788 F.3d at 1379.

For the reasons discussed *supra*, we are unpersuaded of Examiner error. Accordingly, we sustain the Examiner’s rejection of claims 1, 3, 4, 21, 23, 24, 41, 43, 44, 61, 63, and 65 under 35 U.S.C. § 101. *See* 37 C.F.R. § 41.37(c)(1)(iv)

Rejections under pre-AIA 35 U.S.C. § 103(a)

Appellant argues the Examiner erred by relying on a proposed combination of references that require a level of extraordinary skill beyond that of an ordinarily skilled artisan. Appeal Br. 13–14.

Although it is always preferable for the factfinder to specify the level of skill it has found to apply to the invention at issue, the absence of specific findings on the level of skill in the art does not give rise to reversible error where the prior art itself reflects an appropriate level and a need for testimony is not shown. *Okajima v. Bourdeau* 261 F.3d 1350, 1355 (Fed. Cir. 2001) (*Citing Litton Indus. Prods., Inc. v. Solid State Sys. Corp.*, 755 F.2d 158, 163 (Fed.Cir.1985)).

We note, as does the Examiner (*see* Ans. 11), that Appellant has not identified what specifically would require extraordinary skill in the art. Appellant’s conclusory statement that extraordinary skill would be required to achieve the claimed invention from the Examiner’s proposed combination of references is not persuasively supported by argument or evidence.

It is well settled that mere attorney arguments and conclusory statements, which are unsupported by factual evidence, are entitled to little probative value. *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997); *see also In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974) (attorney argument is not evidence).

Accordingly, we are not persuaded that the proposed combination requires extraordinary skill in the art.

Appellant also asserts the Examiner erred in relying on Neil because Neil is in a non-analogous field of endeavor and its teachings are not

applicable to the specific problem of constructing two-dimensional credit behavior network maps. Appeal Br. 14; Reply Br. 5–6.

The correct inquiry for whether a reference is analogous art to the claimed invention is if (1) the reference is from the same field of endeavor as the claimed invention (even if it addresses a different problem); or (2) the reference is reasonably pertinent to the problem faced by the inventor (even if it is not in the same field of endeavor as the claimed invention). *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004). In order for a reference to be “reasonably pertinent” to the problem, it “logically would have commended itself to an inventor’s attention in considering his problem.” *In re Icon Health and Fitness, Inc.*, 496 F.3d 1374, 1379–80 (Fed. Cir. 2007) (quoting *In re Clay*, 966 F.2d 656, 659 (Fed. Cir. 1992)).

We agree with the Examiner’s finding that Neil is analogous art. *See* Ans. 15. As recited in Appellant’s claim 1, a two-dimensional credit behavior network map is constructed for an identified entity “so that a user can view and act upon information displayed . . . to determine a risk of disruption of a global supply chain of said first entity at varying points of a credit supply chain . . .” (Emphasis added.) As the Examiner explains, Neil teaches that risk data networking is applicable in various fields of use including determining the operational risk in financial institutions. Ans. 15 (citing Neil, slide 39). Thus, Neil is (at least) reasonably pertinent to the problem faced by Appellant and is, therefore analogous art.

Appellant asserts that the Examiner failed to consider the declaration of Dr. Yuan regarding the Examiner’s rejection of the pending claims under pre-AIA 35 U.S.C. § 103(a). Appeal Br. 14–15; Reply Br. 5.

Contrary to Appellant's assertions, Dr. Yuan's declaration was submitted to rebut the Examiner's rejection under 35 U.S.C. § 101. *See* Yuan Decl. 3 ("I understand that in the Office Action, claims 1, 3, 4, 21, 23, 24, 41, 43, 44, 61, 63, and 65 are rejected under 35 U.S.C. §101 because they are directed to a judicial exception (abstract idea) without significantly more. I believe that the Office Action contains at least two errors in the substance of the rejection stated above.") (emphasis added).

Appellant also asserts that "rejecting the claims on the basis of four and five references represents the use of impermissible hindsight." Appeal Br. 15.

"Any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made and does not include knowledge gleaned only from applicant's disclosure, such a reconstruction is proper." *In re McLaughlin*, 443 F.2d 1392, 1313–14 (CCPA 1971). The U.S. Supreme Court has held the relevant inquiry in an obviousness analysis is whether the Examiner has set forth "some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (cited with approval in *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 418 (2007)).

As an initial matter, we disagree with Appellant's underlying premise that an obviousness rejection that relies on four or five references impermissibly incorporates hindsight reconstruction by the Examiner. Reliance on a large number of references in a rejection does not, without

more, weigh against the obviousness of the claimed invention. *In re Gorman*, 933 F.2d 982, 986 (Fed. Cir. 1991).

Moreover, as set forth in both the Final Rejection and Answer, the Examiner sets forth articulated reasoning with rational underpinning for the proposed combinations of references. *See* Final Act. 35–41; Ans. 16–17; *see also Kahn*, 441 F.3d at 988.

Appellant also recites a number of limitations from the claims and asserts that none of the references teaches the recited limitations. *See* Appeal Br. 15–18.

We do not find Appellant’s conclusory assertions persuasive of Examiner error because 37 C.F.R. § 41.37(c)(1)(iv) requires more substantive arguments in an Appeal Brief than a mere recitation of the claim elements and a naked assertion that the corresponding elements were not found in the prior art. *See In re Lovin*, 652 F.3d 1349, 1357 (Fed. Cir. 2011). Contrary to Appellant’s assertions, the Examiner makes comprehensive findings for the recited claim limitations (*see, e.g.*, Final Act. 27–41). Appellant does not persuasively rebut these findings.

For the reasons discussed *supra*, we are unpersuaded of Examiner error. Accordingly we sustain the Examiner’s rejection of independent claim 1 under pre-AIA 35 U.S.C. § 103(a). For similar reasons, we also sustain the Examiner’s rejection of independent claims 21 and 41, which recite commensurate limitations and were not argued separately. *See* Appeal Br. 18; *see also* 37 C.F.R. § 41.37(c)(1)(iv). Additionally, we sustain the Examiner’s rejections of claims 3, 4, 23, 24, 43, 44, 61, 63, and 65, which depend directly or indirectly therefrom and were not argued separately with particularity. *See* Appeal Br. 18–19; *see also* 37 C.F.R. § 41.37(c)(1)(iv).

CONCLUSION

We affirm the Examiner's decision rejecting claims 1, 3, 4, 21, 23, 24, 41, 43, 44, 61, 63, and 65 under 35 U.S.C. § 101.

We affirm the Examiner's decision rejecting claims 1, 3, 4, 21, 23, 24, 41, 43, 44, 61, 63, and 65 under pre-AIA 35 U.S.C. § 103(a).

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 3, 4, 21, 23, 24, 41, 43, 44, 61, 63, 65	101	Eligibility	1, 3, 4, 21, 23, 24, 41, 43, 44, 61, 63, 65	
1, 4, 21, 24, 41, 44, 61, 63, 65	103(a)	Psota, Pollin, Baer, Neil	1, 4, 21, 24, 41, 44, 61, 63, 65	
3, 23, 43	103(a)	Psota, Pollin, Baer, Neil, Ito	3, 23, 43	
Overall Outcome			1, 3, 4, 21, 23, 24, 41, 43, 44, 61, 63, 65	

TIME PERIOD FOR 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