



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
13/785.597 03/05/2013 Michael Vasinkevich 227-017 8467

89220 7590 07/27/2018

Antonio Papageorgiou
Meister Seelig & Fein LLP
125 Park Avenue
7th Floor
New York, NY 10017

Table with 1 column: EXAMINER

ANDERSON, MICHAEL W

Table with 2 columns: ART UNIT, PAPER NUMBER

3694

Table with 2 columns: NOTIFICATION DATE, DELIVERY MODE

07/27/2018

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@msf-law.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JOCHEN L. LEIDNER and FRANK SCHILDER

Appeal 2017-004382
Application 13/785,597¹
Technology Center 3600

Before HUNG H. BUI, MICHAEL J. ENGLE, and
PHILLIP A. BENNETT, *Administrative Patent Judges*.

BUI, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants seek our review under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1–30, which are all the claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.²

¹ According to Appellants, the real party in interest is Thomson Reuters Global Resources. App Br. 1.

² Our Decision refers to Appellants' Appeal Brief ("App. Br.") filed September 26, 2016; Reply Brief ("Reply Br.") filed January 30, 2017; Examiner's Answer ("Ans.") mailed November 29, 2016; Final Office Action ("Final Act.") mailed April 26, 2016; and original Specification ("Spec.") filed March 16, 2012.

STATEMENT OF THE CASE

Appellants' invention relates to "identifying and measuring and/or scoring risks associated with an entity, e.g., a publicly traded company, based at least in part on content obtained from news and other reliable sources and generating an entity specific risk profile based on entity-specific risks" and "predicting a movement in a security associated with an entity." Spec. ¶ 17; Abstract.

Claims 1 and 15 are independent. Claim 1 is illustrative of the claimed subject matter, as reproduced below with disputed limitations in *italics*:

1. A computer implemented automated method comprising:

a) receiving and transforming a first set of textual content into a first set of risk scores using at least one computational linguistic technique comprising at least one of the following risk identification algorithms: binary sentence risk classification, risk phrase tagging, named entity risk phrase linking, word sequence mining, token pattern matching, syntax structure mining, grammatical structure mining, tag based algorithm mining, and binary grammatical dependency relationship identification;

b) *generating by a computer a current entity-specific risk profile, wherein the current entity-specific risk profile is a tuple profile data structure comprising a plurality of risk types derived in part from the first set of risk scores and further comprises the first set of risk scores derived from the first set of textual content;*

c) *determining by a computer a risk difference between a historical risk profile, the historical risk profile comprising a second set of risk scores, the second set of risk scores having been previously generated by transforming a second set of content using at least one computational linguistic technique, and the current entity-specific risk profile, wherein the first set of content, collectively, is transformed in*

substantially real-time upon being received and temporally more recent to the determining than is, collectively, the second set of content;

d) based upon the risk difference, determining by a computer a predicted movement of a price of a security associated with an entity, the entity being the entity for which the current entity-specific risk profile was generated; and

e) electronically transmitting by a computer the predicted movement in substantially real-time upon receipt of the first set of content.

Appeal Br. 32 (Claims App'x).

EXAMINER'S REJECTIONS & REFERENCES

(1) Claims 1–30 stand rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. Final Act. 3–6.

(2) Claims 1–3, 7, 8, 11–13, 15–17, 21, 22, 25–27, 29, and 30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Madhavan et al. (US 2004/0078319 A1; published Apr. 22, 2004; “Madhavan”), Hoogs et al. (US 2005/0071217 A1; published Mar. 31, 2005; “Hoogs”), and Psota et al. (US 2009/0144070 A1; published June 4, 2009; “Psota”). Final Act. 6–25.

(3) Claims 4, 5, 18, and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Madhavan, Hoogs, Psota, and Ricciardi (US 2002/0059126 A1; published May 16, 2002). Final Act. 25–30.

(4) Claim 20 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Madhavan, Hoogs, Psota, and Ronk (US 2008/0059353 A1; published Mar. 6, 2008). Final Act. 31–32.

(5) Claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Madhavan, Hoogs, Psota, Ricciardi, and Ronk. Final Act. 32–33.

(6) Claims 9 and 23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Madhavan, Hoogs, Psota, Bliznak (US 2009/0276259 A1; published Nov. 5, 1009), and Gould (US 2006/0253360 A1; published Nov. 9, 2006). Final Act. 33–36.

(7) Claims 10 and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Madhavan, Hoogs, Psota, Bliznak, Gould, and Fickes (US 2005/0262014 A1; published Nov. 24, 2005). Final Act. 36–37.

ANALYSIS

35 U.S.C. § 101: Claims 1–30

In *Alice Corp. v. CLS Bank International*, 134 S. Ct. 2347 (2014), the Supreme Court reiterates an analytical two-step framework previously set forth in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66, 79 (2012), “for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts.” *Alice*, 134 S. Ct. at 2355. The first step in the analysis is to “determine whether the claims at issue are directed to one of those patent-ineligible concepts,” such as an abstract idea. *Id.* If the claims are directed to eligible subject matter, the inquiry ends. *Thales Visionix Inc. v. United States*, 850 F.3d 1343, 1349 (Fed. Cir. 2017); *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1339 (Fed. Cir. 2016).

If the claims are directed to a patent-ineligible concept, the second step in the analysis is to consider the elements of the claims “individually

and ‘as an ordered combination’” to determine whether there are additional elements that “‘transform the nature of the claim’ into a patent-eligible application.” *Alice*, 134 S. Ct. at 2355 (quoting *Mayo*, 566 U.S. at 79, 78). In other words, the second step is to “search for an ‘inventive concept’—*i.e.*, an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’” *Id.* (quoting *Mayo*, 566 U.S. at 72–73).

In rejecting claims 1–30 under 35 U.S.C. § 101, the Examiner determines (1) these claims are directed to an abstract idea of “predicting movement of a price of a security” and (2) the additional elements in the claims, whether taken separately or in an ordered combination, do not amount to significantly more than the abstract idea, because (i) “the claims do not recite an improvement to another technology or technical field, nor do they recite an improvement to the functioning of the computer itself” and (ii) “the claims require no more than a generic computer . . . to perform generic computer functions that are well-understood, routine, conventional activities previously known to the industry.” Final Act. 4–5; Ans. 2–6. The Examiner also determines these claims are directed to an abstract idea because the process recited in these claims can be implemented mentally or performed manually by a human with pen and pencil. Ans. 2; *see also CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366 (Fed. Cir. 2011).

Alice/Mayo—Step 1 (Abstract Idea)

Turning to the first step of the *Alice* inquiry, Appellants argue “the Examiner’s characterization of the claim is overly broad,” citing *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. May 12, 2016) and a memorandum from Robert W. Bahr, Deputy Commissioner for Patent

Examination Policy, to Patent Examining Corps, *Recent Subject Matter Eligibility Decisions* (May 19, 2016), which warn against “describing the claims at such a high level of abstraction and untethered from the language of the claims” and suggest such an abstraction will “all but ensure[] that the exceptions to §101 swallow the rule.” App. Br. 12–13 (quoting *Enfish*, 822 F.3d at 1336). Likewise, Appellants argue “the Examiner has not properly considered each and every claim limitation in determining subject matter eligibility under 35 U.S.C. § 101” and if these limitations “are considered both individually and together, the claim is not directed to any previously identified abstract idea.” Reply Br. 1–3.

Appellants then argue “Claim 1 is not directed towards an abstract idea” because:

- (1) the Supreme Court’s decision in *Alice* “narrowed the concept of ‘abstract ideas’ to those concepts which are fundamental and long prevalent, and possibly to concepts which have been in use for an extensive period of time” such as “the risk hedging claims of *Bilski* and the intermediate settlement concept at issue in *Alice*,” whereas the subject matter of Appellants’ claims relates to “generating by a computer a current entity-specific risk profile” that is “far removed from the concepts of risk hedging and intermediate settlements”;
- (2) “[l]ike the claims at issue in *Enfish* and [*McRO, Inc. v. Bandai Namco Games America, Inc.*, 837 F.3d 1299 (Fed. Cir. 2016)], the claimed invention provides a technological improvement that is not directed towards an abstract idea. The claimed method provides an improvement over the prior art methods that can produce results in near real-time where manual methods could not have possibly yielded usable results”; and

- (3) like *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014), Appellants’ “invention also solves a problem specific to the computer or virtual environment, one specific to the Internet that did not exist before the advent of computers and computer technology” and “cannot possibly be achieved by a human using mental steps or on pen and paper.”

App. Br. 13–15.

According to Appellants, “generating, processing, communicating and transforming electronic data for risk mining and management and the creation of entity-specific risk profiles of the present invention solves a problem specific to the computer field not related to the alleged abstract idea.” App. Br. 14.

Appellants’ arguments are not persuasive. At the outset, we note Appellants’ characterizations of the Supreme Court’s decision in *Alice* and the Federal Circuit’s decisions in *Enfish* and *McRO* are incorrect. The Supreme Court’s decision in *Alice* is not limited to those “business method” concepts that are “fundamental and long prevalent” such as “the risk hedging claims of *Bilski* and the intermediate settlement concept at issue in *Alice*,” as Appellants argue. App. Br. 13. Rather, as recognized by the Examiner, the Federal Circuit has identified numerous examples of “business method” concepts as “abstract ideas that are not fundamental, long prevalent, or concepts that have been in use for an extensive period of time.” Ans. 3 (citing PTO’s examples located at <https://www.uspto.gov/sites/default/files/documents/ieg-duly-2015-grs.pdf>).

Appellants’ Specification is directed to “identifying and measuring and/or scoring risks associated with an entity, e.g., a publicly traded company, based at least in part on content obtained from news and other

reliable sources and generating an entity specific risk profile based on entity-specific risks” and “predicting a movement in a security associated with an entity.” Spec. ¶ 17; Abstract. Embodiments of Appellants’ Specification, such as depicted in Figure 17B, describe generating a current entity-specific risk profile to predict stock movement. Thus, we agree with the Examiner that the claims are directed to an abstract idea of “predicting movement of a price of a security,” which is “certain methods of organizing human activity.” Final Act. 4–5; Ans. 3–4. Such activities are squarely within the realm of abstract ideas.

As also recognized by the Examiner (Ans. 3), predicting movement of a price of a security can also be performed solely in the human mind, or by a human using a pen and paper. *See CyberSource*, 654 F.3d at 1372–73 (“[A] method that can be performed by human thought alone is merely an abstract idea and is not patent-eligible under § 101.”); *see also In re Comiskey*, 554 F.3d 967, 979 (Fed. Cir. 2009) (“[M]ental processes—or processes of human thinking—standing alone are not patentable even if they have practical application.”); *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) (“Phenomena of nature . . . , *mental processes*, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work” (emphasis added)). Additionally, mental processes remain unpatentable even when automated to reduce the burden on the user of what once could have been done with pen and paper. *CyberSource*, 654 F.3d at 1375 (“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*.”). Contrary to Appellants’ argument, all the steps/functions recited in Appellants’ claims 1 and 15, including: (1) “receiving and transforming a

first set of textual content into a first set of risk scores”; (2) “generating . . . a current entity-specific risk profile”; (3) “determining . . . a risk difference between a historical risk profile, the historical risk profile” (4) “based upon the risk difference, determining . . . a predicted movement of a price of a security associated with an entity”; and (5) “electronically transmitting . . . the predicted movement” can be performed mentally, or by a human using a pen and paper.

Moreover, contrary to Appellants’ characterization of *Enfish* and *McRO*, the steps/functions recited in Appellants’ claims 1 and 15 are only abstract processes of collecting, storing, and analyzing information of a specific content, e.g., news/media content regarding an entity to assess scoring risks and to predict movement in a security associated with that entity. Information, as such, is intangible, and data analysis and algorithms are also abstract ideas. *See, e.g., Microsoft Corp. v. AT & T Corp.*, 550 U.S. 437, 451 n.12 (2007); *Alice*, 134 S. Ct. at 2355; *Parker v. Flook*, 437 U.S. 584, 589, 594–95 (1978) (“Reasoning that an algorithm, or mathematical formula, is like a law of nature, *Benson* applied the established rule that a law of nature cannot be the subject of a patent”); *Gottschalk v. Benson*, 409 U.S. 63, 71–72 (1972). “[C]ollecting information, including when limited to particular content (which does not change its character as information),” and “analyzing information by steps people go through in their minds, or by mathematical algorithms, without more,” are “within the realm of abstract ideas.” *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353–54 (Fed. Cir. 2016); *see also Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1349 (Fed. Cir. 2015); *Digitech Image Technologies, LLC v. Electronics for Imaging, Inc.*, 758 F.3d 1344, 1351 (Fed. Cir. 2014);

CyberSource, 654 F.3d at 1370. That is, “[w]ithout additional limitations, a process that employs mathematical algorithms to manipulate existing information to generate additional information is not patent eligible.”

Digitech, 758 F.3d at 1349–50 (“Data in its ethereal, non-physical form is simply information that does not fall under any of the categories of eligible subject matter under section 101”).

Appellants’ claims 1 and 15 “do not improve the performance of a computer” and, likewise, do not “solve a problem specific to computers or computer networks,” as correctly recognized by the Examiner. Ans. 3–4. Appellants’ Specification and arguments do not demonstrate the claims “improve the way a computer stores and retrieves data in memory,” as the claims in *Enfish* did via a “self-referential table for a computer database.” See *Enfish*, 822 F.3d at 1336, 1339.

In fact, neither the steps recited in Appellants’ claims 1 and 15 nor the rest of Appellants’ Specification supply any description or explanation as to how these data manipulation steps are intended to provide: (1) a “solution . . . necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks,” as explained by the Federal Circuit in *DDR*, 773 F.3d at 1257; (2) “a specific improvement to the way computers operate,” as explained in *Enfish*, 822 F.3d at 1336; or (3) an “unconventional technological solution . . . to a technological problem” that “improve[s] the performance of the system itself,” as explained in *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1302 (Fed. Cir. 2016).

Accordingly, we agree with the Examiner that claims 1–30 are directed to an abstract idea of “predicting movement of a price of a

security,” which is considered “certain methods of organizing human activity” as well as “mental steps” under *Benson*. As our reviewing court has held, combining several abstract ideas does not render the combination any less abstract. *RecogniCorp, LLC v. Nintendo Co., Ltd.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017) (“Adding one abstract idea . . . to another abstract idea . . . does not render the claim non-abstract.”); *see also FairWarning IP, LLC v. Iatric Systems, Inc.*, 839 F.3d 1089, 1093–94 (Fed. Cir. 2016) (Patent-ineligible claims were directed to a combination of abstract ideas.).

Alice/Mayo—Step 2 (Inventive Concept)

In the second step of the *Alice* inquiry, Appellants argue the claims amount to significantly more than an abstract idea because: (1) “subject matter [that] provides something that cannot possibly be done on pen and paper . . . may be patentable subject matter,” citing *California Institute of Technology v. Hughes Communications, Inc.*, 59 F. Supp. 3d 974 (C.D. Cal. 2014); (2) “[t]he entity-specific risk profile of the claimed invention is a specific data structure, a tuple profile data structure, that comprises more than one risk type” and, as such, “is significantly more than the alleged abstract idea”; and (3) the “Examiner has not considered each and every claim element of **all** the claims **both independently and as an ordered combination.**” App. Br. 16–19.

We disagree. At the outset, we note Appellants’ reliance on *California Institute of Technology* is misplaced because (1) district court decisions are not binding legal authority on the Board, and (2) the district court’s holding in *California Institute of Technology* that claims directed to “methods of error correction in data transmission” were not directed to an

abstract idea is not analogous to Appellants' claims directed to "predicting movement of a price of a security."

According to *Alice*, the second step is to "search for an 'inventive concept'—*i.e.*, an element or combination of elements that is 'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.'" *Alice*, 134 S. Ct. at 2355 (quoting *Mayo*, 566 U.S. at 72–73). The Federal Circuit cases on point include (1) *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014) and (2) *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.* 841 F.3d 1288 (Fed. Cir. 2016), both of which involved business-centric inventions.

In *DDR* and *Amdocs*, the Federal Circuit opted to bypass *Alice* step 1 in favor of step 2. In particular, the Federal Circuit found *DDR*'s claims contain an "inventive concept" under *Alice* step 2 because *DDR*'s claims (1) do not merely recite "the performance of some business practice known from the pre-Internet world" previously disclosed in *Bilski* and *Alice*, but instead (2) provide a technical solution to a technical problem unique to the Internet, *i.e.*, a "solution . . . necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks." *DDR*, 773 F.3d at 1257. Likewise, the Federal Circuit also found *Amdocs*' claims contain a sufficient "inventive concept" because like *DDR*, *Amdocs*' claims "entail[] an unconventional technological solution (enhancing data in a distributed fashion) to a technological problem (massive record flows which previously required massive databases)" and "improve the performance of the system itself." *Amdocs*, 841 F.3d at 1300, 1302.

Under current Federal Circuit precedent, an “inventive concept” under *Alice* step 2 can be established by showing, for example, that the patent claims:

(1) provide a technical solution to a technical problem unique to the Internet, e.g., a “solution . . . necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks” (see *DDR*, 773 F.3d at 1257);

(2) transform the abstract idea into “a particular, practical application of that abstract idea,” e.g., “installation of a filtering tool at a specific location, remote from the end-users, with customizable filtering features specific to each end user” (see *BASCOM Global Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1352, 1350 (Fed. Cir. 2016)); or

(3) “entail[] an unconventional technological solution ([e.g.,] enhancing data in a distributed fashion) to a technological problem ([e.g.,] massive record flows [that] previously required massive databases)” and “improve the performance of the system itself” (see *Amdocs*, 841 F.3d at 1300, 1302).

In this case, however, we find no element or combination of elements recited in Appellants’ claims 1 and 15 that contains any “inventive concept” or adds anything “significantly more” to transform the abstract concept into a patent-eligible application. *Alice*, 134 S. Ct. at 2357. As discussed *supra*, we are not persuaded the added computer elements such as a processor and memory can transform the abstract idea into a patent eligible invention. As our reviewing court has observed, “after *Alice*, there can remain no doubt: recitation of generic computer limitations does not make an otherwise ineligible claim patent-eligible.” *DDR*, 773 F.3d at 1256 (citing *Alice*, 134 S. Ct. at 2358).

Additional Argument

Appellants argue that the claims do not seek to tie up or preempt an entire field, i.e., an abstract idea of “predicting movement of a price of a security.” App. Br. 15. However, this argument is not persuasive because, although “preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility.” *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015). “Where a patent’s claims are deemed only to disclose patent ineligible subject matter” under the *Alice/Mayo* framework, “preemption concerns are fully addressed and made moot.” *Id.*

Because Appellants’ claims 1 and 15 are directed to a patent-ineligible abstract concept and do not recite something “significantly more” under the second prong of the *Alice* analysis, we sustain the Examiner’s rejection of claims 1–30 under 35 U.S.C. § 101.

*35 U.S.C. § 103(a):
Claims 1–3, 7, 8, 11–13, 15–17, 21, 22, 25–27, 29, and 30*

In support of the obviousness rejection of claim 1 and similarly, claim 15, the Examiner finds Madhavan teaches most aspects of Appellants’ claimed method of “predicting movement of a price of a security,” including “determining by a computer a risk difference between a historical risk profile . . . and the current entity-specific risk profile.” Final Act. 6–9 (citing Madhavan ¶¶ 19, 33).

The Examiner then relies on (1) Psota for teaching “the current entity-specific risk profile is a tuple profile data structure comprising a plurality of risk types derived in part from the first set of risk scores”

and further comprises the first set of risk scores derived from the first set of textual content” (Final Act. 7–8 (citing Psota ¶¶ 200, 203, 213)); and (2) Hoogs for teaching “the historical risk profile comprising a second set of risk scores, the second set of risk scores having been previously generated by transforming a second set of content using at least one computational linguistic technique” (Final Act. 8–9 (citing Hoogs ¶¶ 6, 7, 51)).

Appellants dispute the Examiner’s factual findings regarding Madhavan and Psota. App. Br. 22–26. In particular, Appellants acknowledge Madhavan teaches a method of “generating risk forecasts by predicting future volatility of single stocks and portfolios of stocks” (App. Br. 7 (quoting Madhavan ¶ 9)) and such risk forecasts of a security (stock) are based on “a set of ‘risk factors’ such as ‘market, sector, industry, size, and growth’ depending on the security being analyzed.” App. Br. 22 (quoting Madhavan ¶ 27). However, Appellants argue “[n]othing in Madhavan, teaches, discloses, or suggests ‘generating by a computer a current entity-specific risk profile’ or ‘determining by a computer a **risk difference**’ as claimed.” App. Br. 22. According to Appellants,

[a] **risk difference** as claimed is the difference between a historical risk profile and a more temporally current entity-specific risk profile. *See* Fig. 1 7B, Para. [0091]. This risk difference may be used to predict the movement of the price of a security. The key is that the determination is of a **risk difference** between a historical risk profile and an entity specific risk profile. The **difference** between the two **profiles** is in part what enables the present invention to predict the movement of a price of a security.

App. Br. 23.

Similarly, Appellants acknowledge Psota teaches a platform for users to obtain information related to one another’s transaction histories (i.e.,

records of transactions among buyers and suppliers) and generate reports regarding as to the quality of buyers and suppliers. App. Br. 7 (citing Psota ¶¶ 7, 8); *see also* Psota Abstract. Appellants also acknowledge the cited paragraphs 200–203 of Psota teach the use of “a tuple-based search” to facilitate the capability of searching for entities related to a specific parameter and the search results may be ranked on a number of factors, including an “opportunity profile” and a “risk profile.” App. Br. 25. However, Appellants argue neither Psota’s “opportunity profile” nor “risk profile” corresponds to Appellants’ claimed “entity-specific risk profile” that “is a tuple profile data structure comprising a plurality of risk types derived in part from the first set of risk scores” as recited in claims 1 and 15. App. Br. 25–26. Because Madhavan and Psota fail to teach these features, Appellants contend that there is no reason to incorporate Psota’s “tuple-based search” into Madhavan’s system. App. Br. 26.

In response, the Examiner takes the position that:

- (1) “Madhavan teaches a risk model equation that includes variables that change over time. See Madhavan ¶[0019] and [0033]. As time changes, risk changes. This risk change is a risk difference used to explain stock price movements or volatility. See Madhavan ¶[0036]. Therefore, Madhavan at least suggests this risk difference”;
- (2) “[Madhavan’s] risk profiles are nothing more than quantitative risk scores. See claim 1, element b), ‘the current entity-specific risk profile . . . comprises the first set of risk scores derived from the first set of textual content.’ These ‘profiles’ or ‘scores’ are historical and current (‘temporally more recent,’ as described in the current application), meaning they change over time. Risk scores based on risk factors that change over time are taught by Madhavan, which meets this element of the claims”; and

(3) “[Psota’s] data may be represented in tuples (see ¶[0213], which is merely an ordered list of elements.”

Ans. 7–9 (emphasis added).

We do not agree with the Examiner. At the outset, we note Appellants’ claim 1 recites, *inter alia*: “generating by a computer a current entity-specific risk profile, wherein the current entity-specific risk profile is a tuple profile data structure comprising a plurality of risk types derived in part from the first set of risk scores and further comprises the first set of risk scores derived from the first set of textual content;” and “determining by a computer a risk difference between a historical risk profile . . . and the current entity-specific risk profile” (*see also* claim 15).

As correctly recognized by Appellants, the claimed “entity-specific risk profile” is specifically defined as “a tuple profile data structure comprising a plurality of risk types derived in part from the first set of risk scores” (Ans. 7) and such a definition is consistent with how that term is described in the Specification as:

“a data structure based upon linguistic analysis wherein the data structure preferably comprises one or more or all of four parts. The four component risk parts that make up the data structure are: a set of general risks (a set of <risk type; risk exposure indicator> pairs for a set of risk types that are applicable to all companies); a set of idiosyncratic risks (a set of <risk type; risk exposure indicator> pairs for a set of risk types that characterize particularly the company under consideration); self trends (a set of historic signals and a forecasting trend that relates the company under consideration to its past overall risk exposure); and peer trends (a set of historic signals and a forecasting trend that relates the company under consideration to the past overall risk exposure of its industry peers)” and

“Definition of Entity or Company Risk Profile (ERP). Formally, an ERP is a tuple profile that may be represented as

(GenericRisk; IdiosyncraticRisk; SelfTrend; PeerTrend). General Risk set or ‘GenericRisk’ is a set of (riskType;riskScore) tuples where risk Type E LegalRisks; OperationalRisks; FinancialRisks; and MarketRisks. Idiosyncratic risk set or ‘IdiosyncraticRisks’ is a set of (riskType; riskScore) tuples.”

Spec. ¶¶ 17, 96.

Because the “entity-specific risk profile is a tuple profile data structure comprising a plurality of risk types derived in part from the first set,” we agree with Appellants that the Examiner cannot broadly interpret this phrase to encompass any “risk scores” as disclosed by Madhavan. Reply Br. 7. Similarly, we also agree with Appellants that Madhavan’s disclosure of a risk model equation that includes variables that change over time is not the same as Appellants’ claimed “risk difference between a historical risk profile . . . and the current entity-specific risk profile” as recited in claims 1 and 15. Ans. 18. Likewise, we agree with Appellants that Psota’s disclosure of a “tuple-based search” (Psota ¶ 200) and data searched and represented in tuples (Psota ¶ 213) in the context of searching for entities is not the same as Appellants’ claimed “entity-specific risk profile [] [as] a tuple profile data structure comprising a plurality of risk types derived in part from the first set,” recited in claims 1 and 15.

Because the Examiner has not accounted for these features and has not shown the combination of prior art references teaches or suggests all the claim limitations, we do not sustain the Examiner’s obviousness rejection of independent claims 1 and 15, and their respective dependent claims 2, 3, 7,8, 11–13, 16, 17, 21, 22, 25–27, 29, and 30.

For the same reasons discussed, we also do not sustain the Examiner’s remaining obviousness rejections, which include: (1) claims 4, 5, 18, and 19 as being obvious over Madhavan, Hoogs, Psota, and Ricciardi; (2) claim 20

as being obvious over Madhavan, Hoogs, Psota, and Ronk; (3) claim 6 as being obvious over Madhavan, Hoogs, Psota, Ricciardi, and Ronk; (4) claims 9 and 23 as being obvious over Madhavan, Hoogs, Psota, Bliznak, and Gould; and (5) claims 10 and 24 as being obvious over Madhavan, Hoogs, Psota, Bliznak, Gould, and Fickes.

CONCLUSION

On the record before us, we conclude Appellants have not demonstrated the Examiner erred in rejecting claims 1–30 under 35 U.S.C. § 101. However, Appellants have demonstrated the Examiner erred in rejecting claims 1–30 under 35 U.S.C. § 103(a).

DECISION

As such, we AFFIRM the Examiner’s rejection of claims 1–30 under 35 U.S.C. § 101. However, we REVERSE the Examiner’s rejection of claims 1–30 under 35 U.S.C. § 103(a).

Because we have affirmed at least one ground of rejection with respect to each claim on appeal, we affirm the Examiner’s decision rejecting claims 1–30. *See* 37 C.F.R. § 41.50(a)(1).

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).

AFFIRMED