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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/423,127	03/16/2012	Jochen L. Leidner	113027.000076US1	1201

79804 7590 07/26/2018

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ART UNIT	PAPER NUMBER
3624	

NOTIFICATION DATE	DELIVERY MODE
07/26/2018	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JOCHEN L. LEIDNER and FRANK SCHILDER

Appeal 2017-004959
Application 13/423,127[1]
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 1–10, 12–30, 32–40, and 42–48, which are all the claims pending in the application. Claims 11, 31, and 41 are canceled. Claims 49–56 are withdrawn. Claims App'x. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.[2]

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[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 October 10, 2016; Reply Brief ("Reply Br.") filed March 6, 2017; Examiner's Answer ("Ans.") mailed January 4, 2017; Final Office Action ("Final Act.") mailed May 10, 2016; and original Specification ("Spec.") filed March 16, 2012.

STATEMENT OF THE CASE

Appellants' invention relates to "enhanced analytics that enable 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, 21, and 40 are independent. Claim 1 is illustrative of the claimed subject matter, as reproduced below with disputed limitations in *italics*:

> 1. A computer implemented method comprising:
>
> a) processing by a computer a set of textual information to automatically identify a text string indicative of risk associated with an entity by identifying within the text string an entity tag and a pre-defined word, pattern, or phrase indicative of a defined risk type;
>
> b) automatically analyzing by a computer a set of linguistic characteristics of the text string and applying a learned risk taxonomy to the text string to identify a risk associated with the entity, transforming textual information related to the identified risk into a numerical expression;
>
> c) based upon the step of automatically analyzing, automatically generating by the computer an entity-specific risk profile ("ERP") associated with the entity, the entity-specific risk profile comprising a first risk component associated with a first risk type and a second risk component associated with a second risk type, each risk component comprising a numerical expression derived from an identified risk associated respectively, with either the first or second risk type;
>
> d) automatically comparing a first entity-specific risk profile associated with a first entity with a second entity-specific risk profile associated with the first or an other entity, the first and second risk components associated with the first and second entity-specific risk profiles are compared to derive a difference;

> e) automatically identifying trend data based on the derived difference and generating a forecast based at least in part on the trend data; and
>
> f) storing the first and second entity-specific risk profiles and the forecast in a memory accessible by the computer.

Amend. For Non-Compliant App. Br. 2 (Claims App'x).

EXAMINER'S REJECTIONS & REFERENCES

(1) Claims 1–10, 12–30, 32–40, and 42–48 stand rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. Final Act. 6–7.

(2) Claims 1, 21, and 40 stand rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement. Final Act. 7–9.

(3) Claims 1, 21, and 40 stand rejected under 35 U.S.C. § 112, second paragraph as being indefinite. Final Act. 9–10.

(4) Claims 1, 3, 5–8, 10, 12, 14, 18, 21, 23, 25–28, 30, 32, 34, and 38 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Rewari et al. (US 2009/0055242 A1; published Feb. 26, 2009; "Rewari") and Hoogs et al. (US 2005/0071217 A1; published Mar. 31, 2005; "Hoogs"). Final Act. 11–35.

(5) Claims 2, 4, 13, 15, 16, 22, 24, 33, 35, and 36 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Rewari, Hoogs, and Lawrence et al. (US 2006/0004878 A1; published Jan. 5, 2006; "Lawrence"). Final Act. 35–43.

(6) Claims 9 and 29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Rewari, Hoogs, and Laxman et al. (US 2010/0100517 A1; published Apr. 22, 2010). Final Act. 43–46.

(7) Claims 17 and 37 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Rewari, Hoogs, and Hollas (US 7,908,194 B2; issued Mar. 15, 2011). Final Act. 46–48.

(8) Claims 19 and 39 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Rewari, Hoogs, and Dudat et al. (US 2005/0102175 A1; published May 12, 2005). Final Act. 48–50.

(9) Claim 20 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Rewari, Hoogs, and Nordberg et al. (US 2006/0129452 A1; published June 15, 2005). Final Act. 50–51.

(10) Claims 40, 42–46, and 48 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Rewari, Hoogs, and Lawrence. Final Act. 51–61.

(11) Claim 47 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Rewari, Hoogs, Lawrence, and Laxman. Final Act. 61–62.

ANALYSIS

35 U.S.C. § 101: Claims 1–10, 12–30, 32–40, and 42–48

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 1–10, 12–30, 32–40, and 42–48 under 35 U.S.C. § 101, the Examiner determines (1) these claims are directed to an abstract idea of "generating and comparing risk profiles of entities" and (2) the additional elements in the claims, whether taken separately or in an ordered combination, are all steps for data acquisition, data manipulation, and data reporting related to generating and comparing risk profiles that 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, and

conventional activities previously known to the industry." Final Act. 6–7; Ans. 4–10. 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. 7; *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. 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. 11–12 (quoting *Enfish*, 822 F.3d at 1336). According to Appellants, "[t]he subject matter of the claimed invention is far removed from the concepts of risk hedging, intermediated settlement, and fundamental mathematical algorithms and does not involve a 'fundamental economic practice' or 'method of organizing human activity.'" App. Br. 12.

Appellants then argue "Claim 1 is not merely 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 and comparing risk profiles of entities" that is "far removed from the concepts of risk hedging and intermediated settlements and solves a problem unique to mining risks efficiently and accurately from large volumes of textual content using computational linguistic techniques and generating entity-specific risk profiles";

(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 accurately and efficiently, 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. 11–15. 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 or, long prevalent. Ans. 5 (citing PTO's examples located at https://www.uspto.gov/sites/default/files/documents/ieg-duly-2015-qrs.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 Figures 17A–17B, describe generating an entity-specific risk profile (ERP) and using ERP to predict stock movement. Thus, we agree with the Examiner that the claims are directed to an abstract idea of "generating and comparing risk profiles of entities" as "an idea of itself." Ans. 4. All the steps/functions recited in Appellants' claims 1, 21, and 40, including: (a) "processing . . . a set of textual information"; (b) "automatically analyzing . . . a set of linguistic characteristics of the text string"; (c) "automatically generating . . . an entity-specific risk profile ('ERP') associated with the entity"; (d) "automatically comparing a first entity-specific risk profile associated with a first entity with a second entity-specific risk profile associated with the first or an other entity . . . to derive a difference"; (e) "automatically identifying trend data . . . generating a forecast"; and (f) "storing the first and second entity-specific risk profiles and the forecast" are 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 generate a forecast in a security associated with that entity.

Information, as such, is intangible, and data analysis, comparisons, and algorithms, by themselves, are 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 collection and analysis, 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*, 758 F.3d at 1351; *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").

As also recognized by the Examiner (Ans. 7), predicting movement of a price of a security using risk profiles can also be performed mentally or 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. at 67 ("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 could be done mentally with pen and paper. *Bancorp Servs., L.L.C. v. Sun Life Assurance Co.*, 687 F.3d 1266, 1278 (Fed. Cir. 2012) ("[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."); *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' arguments, all the steps/functions recited in Appellants' claims 1, 21, and 40, including: (a) "processing . . . a set of textual information"; (b) "automatically analyzing . . . a set of linguistic characteristics of the text string"; (c) "automatically generating . . . an entity-specific risk profile ("ERP") associated with the entity"; (d) "automatically comparing a first entity-specific risk profile associated with a first entity with a second entity-specific risk profile associated with the first or another entity . . . to derive a difference;" (e) "automatically identifying trend data . . . generating a forecast" and (f) "storing the first and second entity-specific risk profiles and the forecast" are nothing more than "processing text, analyzing the text to identify risk, generat[ing] a risk profile based on the analysis, compar[ing]

risk profiles, identify[ing] trend data, and stor[ing] the result" that can also be performed mentally or using pen and paper. Ans. 7.

Separately, we note Appellants' claims 1, 21, and 40 do not improve the performance of a computer or solve a problem specific to computers or computer networks. 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, 21, and 40, nor the rest of Appellants' Specification supply any description or explanation as to how these data processing 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 Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014); (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 1–10, 12–30, 32–40, and 42–48 are directed to an abstract idea of "generating and comparing risk profiles of entities."

Alice/Mayo—Step 2 (Inventive Concept)

In the second step of the *Alice* inquiry, Appellants argue the claim elements, taken as a whole, 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 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 that claims directed to "methods of error correction in data transmission" were not directed to an abstract idea is not analogous to Appellants' claims being directed to "generating and comparing risk profiles of entities."

According to the Supreme Court in *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).

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," such as 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 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, 21, and 40 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 "generating and comparing risk profiles of entities." 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, 21, and 40 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 1–10, 20–30, 32–40, and 42–48 under 35 U.S.C. § 101.

35 U.S.C. § 112, First Paragraph: Claims 1, 21, and 40

In support of the § 112(a) rejection of claim 1 and, similarly, claim 21, the Examiner finds the limitations: (1) "automatically generat[ing by the computer] an entity-specific risk profile ('ERP') associated with the entity"; (2) "each risk component comprising a numerical expression derived from an identified risk"; and (3) "the first and second risk component associated with the first and second entity specific risk profiles are compared to derive a difference" are not disclosed or supported in Appellants' Specification. Final Act. 7–8. In particular, the Examiner acknowledges paragraph 21 of Appellants' Specification describes the ERP, but asserts "it is unclear exactly how to generate an ERP or what it would contain." Final Act. 8. Similarly, the Examiner acknowledges paragraph 11 of Appellants' Specification describes numerical expressions, but asserts "there is no teaching of how this is done [i.e., how a numerical expression is derived from the identified risk]." Final Act. 8.

Appellants contend the Examiner erred because: (1) paragraphs 70–109 of Appellants' Specification describe a detailed process including all sub-processes, network and physical components for the limitation "automatically generating by the computer an entity-specific risk profile ('ERP') associated with the entity"; (2) paragraphs 120 and 131 describe the limitation "each risk component comprising a numerical expression derived from an identified risk"; and (3) paragraphs 18, 91, 94–95, and 113 provide support for the limitation "whereby the first and second risk components

associated with the first and second entity-specific risk profiles are compared to derive a difference." App. Br. 7–9.

In response, the Examiner maintains the position that (1) "it is unclear to the Examiner what an ERP contains, what structure an ERP has, and how to generate one"; (2) "[m]erely providing examples of scores and statements regarding 'numerical expressions' does not provide adequate detail on how an entity-specific risk profile is generated"; and (3) "[b]ecause the disclosure is completely lacking regarding the structure and composition of an ERP . . . one skilled in the art would not know how to program a computer to perform the steps of generating an ERP, derive a numerical expression from risk, or derive a difference based on a comparison of profiles." Ans. 11–12.

We disagree with the Examiner. At the outset, we note *written description* requirement is separate and distinct from the *enablement* requirement under 35 U.S.C. § 112, first paragraph. *See Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). For example, to comply with the *enablement* requirement under 35 U.S.C. § 112, first paragraph, Appellants' Specification must adequately teach how to make and how to use a claimed invention throughout its scope, without undue experimentation. *Plant Genetic Sys. N.V. v. DeKalb Genetics Corp.*, 315 F.3d 1335, 1339 (Fed. Cir. 2003). Naturally, the specification must teach those of skill in the art "how to make and how to use the invention as broadly as it is claimed." *In re Vaeck*, 947 F.2d 488, 496 (Fed. Cir. 1991).

In contrast to the *enablement* requirement, the *written description* requirement under 35 U.S.C. § 112, first paragraph only requires Appellants to "reasonably convey[] to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date." *Ariad*, 598

F.3d at 1351. "[T]he level of detail required to satisfy the written description requirement varies depending on the nature and scope of the claims and on the complexity and predictability of the relevant technology." *Id.* However, "the disclosure as originally filed does not have to provide *in haec verba* support for the claimed subject matter at issue." *Purdue Pharma L.P. v. Faulding Inc.*, 230 F.3d 1320, 1323 (Fed. Cir. 2000). In some cases, "drawings alone may provide a 'written description' of an invention as required by § 112." *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1565 (Fed. Cir. 1991). Regardless, the disclosure must convey with reasonable clarity to those skilled in the art that the inventor was in possession of the invention. *Id.* at 1563–1564. Here, Appellants have shown that there is sufficient structure and description in the specification as filed.

For example, the limitation "automatically generating by the computer an entity-specific risk profile ('ERP') associated with the entity" is recited as part of the original claim 1 as filed. Paragraph 70 of Appellants' Specification is a heading for "Generating Entity Risk Profiles (ERPs)." Paragraphs 74–88 describe an entity-specific risk profile generation system, shown in Figure 15. Paragraphs 90–95 describe a method of generating an ERP, shown in Figure 17A, and a method of using ERPs to predict stock movement, shown in Figure 17B.

Similarly, the limitation "each risk component comprising a numerical expression derived from an identified risk associated respectively, with either the first or second risk type" and the limitation "whereby the first and second risk components associated with the first and second entity-specific risk profiles are compared to derive a difference" are supported by paragraphs 18, 92, 94–95, 113, 120, and 131 of Appellants' Specification.

Because Appellants have "reasonably convey[ed] to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date," we do not sustain the § 112, first paragraph rejection of claims 1, 21, and 40 for failure to comply with the "written description" requirement.

35 U.S.C. § 112, Second Paragraph: Claims 1, 21, and 40

Similar to the written description rejection, the Examiner finds the same limitations, including: (1) "automatically generat[ing by the computer] an entity-specific risk profile ('ERP') associated with the entity"; (2) "each risk component comprising a numerical expression derived from an identified risk"; and (3) "the first and second risk component associated with the first and second entity specific risk profiles are compared to derive a difference" recited in claims 1, 21, and 40 as indefinite under 35 U.S.C. § 112, second paragraph. Final Act. 9–10.

We disagree with the Examiner. For the same reasons discussed in connection with the "written description," we do not sustain the Examiner's rejection of claims 1, 21, and 40 as indefinite under 35 U.S.C. § 112, second paragraph.

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 21, the Examiner finds the combination of Rewari and Hoogs teaches all the claim limitations. App. Br. 11–15. For example, the Examiner finds Rewari teaches most aspects of Appellants' claimed method including:

a) "processing by a computer a set of textual information to automatically identify a text string indicative of risk associated with an entity by identifying within the text string an entity tag and a pre-defined word, pattern, or phrase . . ." (Rewari ¶¶ 7, 25, 30, 42, 43, 47);

b) "automatically analyzing by a computer a set of linguistic characteristics of the text string and applying a learned risk taxonomy to the text string to identify a risk associated with the entity, transforming textual information related to the identified risk into a numerical expression" (Rewari ¶¶ 25, 30, 48);

c) "based upon the step of automatically analyzing, automatically generating by the computer an entity-specific risk profile ("ERP") associated with the entity, the entity-specific risk profile comprising a first risk component associated with a first risk type and a second risk component associated with a second risk type, each risk component comprising a numerical expression derived from an identified risk associated respectively, with either the first or second risk type" (Rewari ¶¶ 32, 43, 48).

Final Act. 11–13 (emphasis added).

To support the conclusion of obviousness, the Examiner relies on Hoogs for teaching "a defined risk type" and the remaining limitations:

d) "automatically comparing a first entity-specific risk profile associated with a first entity with a second entity-specific risk profile associated with the first or an other entity, whereby the first and second risk components associated with the first and second entity-specific risk profiles are compared to derive a difference" (Hoogs ¶¶ 25, 45–46);

e) "automatically identifying trend data based on the **derived difference** and generating a forecast based at least in part on the trend data" (Hoogs ¶¶ 3–5, 49–51); and

> f) "storing the first and second entity-specific risk profiles and the forecast in a memory accessible by the computer" (Hoogs ¶ 22).

Final Act. 13–15 (emphasis in original).

Appellants dispute the Examiner's factual findings regarding Rewari and Hoogs. App. Br. 23–29. In particular, Appellants acknowledge Rewari teaches an "apparatus, systems, and methods for information access associated with user-relevant information content extraction" including "a market relationship module [(MRM)] used to index individually relevant information content based on user need to formulate queries for later use." App. Br. 7 (citing Rewari ¶¶ 1, 6–7, Abstract). However, Appellants argue Rewari does not teach (1) "identifying text strings indicative of risks or identifying risks as claimed"; (2) "generating an entity-specific risk profile as claimed"; and (3) "comparing entity-specific risks [i.e., risk profiles to derive a difference] as claimed." App. Br. 25–27. According to Appellants, Rewari creates "market relationships between entities and market topics along risk/reward lines," and focuses on "determining the relationships between a set of entities and a set of market topics or events," but does not teach or suggest automatically "identify[ing] a text string **indicative of risk associated with an entity**" and "generating an entity-specific risk profile" as claimed. App. Br. 25–27 (citing Rewari ¶¶ 42–43).

Appellants also argue "*Hoogs* does not cure the deficiencies noted above with respect to *Rewari*" and "*Hoogs* does not teach a risk difference as claimed." App. Br. 28–29; Reply Br. 5. According to Appellants, Hoogs teaches determining similarities of patterns, but not Appellants' claimed "[risk] difference" which is derived by "comparing a first entity-specific risk

profile associated with a first entity with a second entity-specific risk profile associated with the first or another entity" as recited in claims 1 and 21. Reply Br. 5.

> In response, the Examiner takes the position that:
>
> (1) "Rewari explicitly discloses the use of statistical and probabilistic learning techniques (¶[0048]) to comprehend market relationships between one or more market entities and one or more topics, including risk (see ¶[0042]–[0043])";
>
> (2) "[t]he broadest reasonable interpretation of the claimed 'entity-specific risk profile' appears to include any risk related data regarding an entity" as disclosed by Rewari; and
>
> (3) Hoogs, instead of Rewari, teaches the comparison of entity-specific risk profiles (*see* Hoogs ¶¶ 45–46).

Ans. 12–14 (emphasis added).

Appellants' arguments are persuasive. The claimed "entity-specific risk profile" is specifically defined as comprising two risk components: "a first risk component associated with a first risk type and a second risk component associated with a second risk type, each risk component comprising a numerical expression derived from an identified risk associated respectively, with either the first or second risk type." *See* claims 1 and 21. As such, we agree with Appellants that the Examiner cannot broadly interpret an "entity-specific risk profile" as encompassing any "market relationship" or "market topics" including "risk" as disclosed by Rewari. Reply Br. 4; *see also* Rewari ¶¶ 41–42. Similarly, we also agree with Appellants that Hoog's comparison of "a probe case against cases in the case library" including determining "text patterns" is not the same as Appellants' claimed "[risk] difference" which is derived by "comparing a first entity-

specific risk profile associated with a first entity with a second entity-specific risk profile associated with the first or an other entity" as recited in claims 1 and 21. Reply Br. 5.

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

For the same reasons, we also do not sustain the Examiner's remaining obviousness rejections, which include: (1) claims 2, 4, 13, 15, 15, 22, 24, 33, 35, and 36 as being obvious over Rewari, Hoogs, and Lawrence; (2) claims 9 and 29 as being obvious over Rewari, Hoogs, and Laxman; (3) claims 17 and 37 as being obvious over Rewari, Hoogs, and Hollas; (4) claims 19 and 39 as being obvious over Rewari, Hoogs, and Dudat; (5) claim 20 as being obvious over Rewari, Hoogs, and Nordberg; (6) claims 40, 42–46, and 48 as being obvious over Rewari, Hoogs, and Lawrence; and (7) claim 47 as being obvious over Rewari, Hoogs, Lawrence, and Laxman.

CONCLUSION

On the record before us, we conclude Appellants have not demonstrated the Examiner erred in rejecting claims 1–10, 12–30, 32–40, and 42–48 under 35 U.S.C. § 101. However, Appellants have demonstrated the Examiner erred in rejecting: (1) claims 1, 21, and 40 under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement; (2) claims 1, 21, and 40 under 35 U.S.C. § 112,

second paragraph as being indefinite; and (3) claims 1–10, 12–30, 32–40, and 42–48 under 35 U.S.C. § 103(a).

DECISION

As such, we AFFIRM the Examiner's rejection of claims 1–10, 12–30, 32–40, and 42–48 under 35 U.S.C. § 101. However, we REVERSE the Examiner's rejections of (1) claims 1, 21, and 40 under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement; (2) claims 1, 21, and 40 under 35 U.S.C. § 112, second paragraph as being indefinite; and (3) claims 1–10, 12–30, 32–40, and 42–48 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 1–10, 12–30, 32–40, and 42–48. *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