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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/536,539	06/28/2012	Osama S. TAYEB	740742-000043	7936

78198 7590 09/30/2019

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EXAMINER
MADAMBA, CLIFFORD B

ART UNIT	PAPER NUMBER
3692	

NOTIFICATION DATE	DELIVERY MODE
09/30/2019	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte OSAMA S. TAYEB and ISAM AL-FILALI

Appeal 2018-005632[1]
Application 13/536,539
Technology Center 3600

Before ANTON W. FETTING, PHILIP J. HOFFMANN, and BRADLEY B. BAYAT, *Administrative Patent Judges*.

BAYAT, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an Appeal from the final rejection[2] of claims 1–8, 20, and 21, which constitute all the claims pending in this Application, under 35 U.S.C. § 101 as directed to non-statutory subject matter. We have jurisdiction to review the case under 35 U.S.C. §§ 134(a) and 6(b).

We AFFIRM.

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[1] Appellants identify King Abdulaziz University as the real party in interest. Appeal Br. 2.

[2] The rejection under 35 U.S.C. § 103(a) was withdrawn. Adv. Act. 4.

STATEMENT OF THE CASE

"The present invention relates to financial instruments and the exchange where they are traded. More particularly, the present invention relates to financial instruments comprising knowledge-based stock and knowledge-based commodities for trading on an independent knowledge bourse." Spec. 1.

Sole independent claim 1, reproduced below with added bracketed matter, is representative of the subject matter on appeal.

1. A computer product, comprising:

[(a)] a computer-implemented program stored on a non-transitory computer-readable medium that, when loaded into a computer, causes the computer to perform a method for determining knowledge maturity risk of intellectual property-related products and/or services, the computer-implemented method comprising:

[(b)] obtaining knowledge development stages relating to Knowledge Maturity Levels (KML), the knowledge development stages including a technology life cycle;

[(c)] characterizing, by the computer, each knowledge development stage as any one of a number of Knowledge Maturity Product/Service Levels (KMPL), the KMPLs including Generate, Transform, Enable, Use Internally, Sell/Transfer, Add Value, Use by Customers, and Evaluate actions, wherein each of the actions related to the Knowledge Maturity Product/Service Levels (KMPL) include a plurality of sub-KMPL activities;

[(d)] assigning, by the computer, a risk weight to each of said sub-KMPL activities so that each respective sub-KMPL activity is associated with a respective risk of undertaking;

[(e)] determining, by the computer, a Maturity Score as a product of said risk weight and completion status of each of the sub-KMPL activities, wherein the maturity score is based on the following equation: Maturity Score = (Risk Weight) x (Completion Status) x (100), where the risk weight is a value between 0 and 1, the completion status has a value of 0 for incomplete status and 1 for complete status;

> [(f)] determining, by the computer, the knowledge maturity risk based on said maturity score based, wherein the knowledge maturity risk increases as the maturity score decreases, and
>
> [(g)] conducting a trade or transfer of the intellectual property products or services based on the knowledge maturity risk, wherein knowledge is intellectual property-related products and services.

Appeal Br. 10 (Claims App.).

PRINCIPLES OF LAW

An invention is patent-eligible if it claims a "new and useful process, machine, manufacture, or composition of matter." 35 U.S.C. § 101. However, the Supreme Court has long interpreted 35 U.S.C. § 101 to include implicit exceptions: "[l]aws of nature, natural phenomena, and abstract ideas" are not patentable. *E.g.*, *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014).

In determining whether a claim falls within an excluded category, we are guided by the Supreme Court's two-step framework, described in *Mayo* and *Alice*. *Id.* at 217–18 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 75–77 (2012)). In accordance with that framework, we first determine what concept the claim is "directed to." *See Alice*, 573 U.S. at 219 ("On their face, the claims before us are drawn to the concept of intermediated settlement, *i.e.*, the use of a third party to mitigate settlement risk."); *see also Bilski v. Kappos*, 561 U.S. 593, 611 (2010) ("Claims 1 and 4 in petitioners' application explain the basic concept of hedging, or protecting against risk.").

If the claim is "directed to" an abstract idea, we turn to the second step of the *Alice* and *Mayo* framework, where "we must examine the elements of the claim to determine whether it contains an 'inventive

concept' sufficient to 'transform' the claimed abstract idea into a patent-eligible application." *Alice*, 573 U.S. at 221 (quotation marks omitted). "A claim that recites an abstract idea must include 'additional features' to ensure 'that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].'" *Id.* (quoting *Mayo*, 566 U.S. at 77). "[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention." *Id.*

USPTO § 101 Guidance

The PTO recently published revised guidance on the application of § 101. USPTO, *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (Jan. 7, 2019) ("Guidance"). Under the Guidance, we first look to whether the claim recites:

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

Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, do we then look to whether the claim:

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

See Guidance.

ANALYSIS

Alice Step 1

Does claim 1 "recite a judicial exception?"

Under the first step of the *Alice* inquiry, the Examiner determined that

> in their broadest reasonable interpretation and in light of the [S]pecification, the steps of the exemplary claims, as recited, can be interpreted as describing and/or being directed towards facilitating calculating the development risk of a technology-related product, which is similar and corresponds to concepts identified by the courts as abstract, such as such as a fundamental economic practice (e.g., concepts relating to the economy and commerce) as well as an idea of itself (e.g., data recognition and storage as in Content Extraction; collecting information, including wherein limited to a particular content (which does not change its character as information) and/or analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, as essentially mental processes as in Electric Power Group) and mathematical relationships and/or formulas (e.g., mathematical concepts, algorithms, relationships, formulas, calculations as in Flook).

Adv. Act. 2. According to the Examiner, "claim 1 recites steps and/or processes that are similar and correspond to other concepts that have been identified by the courts as abstract such as:"

> "Obtaining knowledge development stages relating to Knowledge Maturity Levels (KML), the knowledge development stages including a technology life cycle", which describes the abstract idea of merely transmitting and receiving data/information associated with a product and which is similar and corresponds to the abstract concept(s) of an idea of itself (e.g., data recognition and storage as in Content Extraction; collecting information, including wherein limited to a particular content (which does not change its character as information).

> "Characterizing, by the computer, each knowledge development stage as any one of a number of Knowledge Maturity Product/Service Levels (KMPL), the KMPLs including Generate, Transform, Enable, Use Internally, Sell/Transfer, Add Value, Use by Customers, and Evaluate actions, wherein each of the actions related to the Knowledge Maturity Product/Service Levels (KMPL) include a plurality of subKMPL activities", which describes the abstract idea of merely analyzing (sorting) data/information and which is similar and corresponds to the abstract concept(s) of an idea of itself (e.g., data recognition and storage as in Content Extraction; collecting information, including wherein limited to a particular content (which does not change its character as information).
>
> "Assigning, by the computer, a risk weight to each of said sub-KM PL activities so that each respective sub-KM PL activity is associated with a respective risk of undertaking", which describes the abstract idea of merely performing a mathematical calculation and which is similar and corresponds to the abstract concept(s) of a fundamental economic practice (e.g., concepts relating to the economy and commerce) as well as mathematical relationships and/or formulas (e.g., mathematical concepts, algorithms, relationships, formulas, calculations as in Flook).
>
> "Determining, by the computer, a Maturity Score as a product of said risk weight and completion status of each of the sub-KM PL activities, wherein the maturity score is based on the following equation: Maturity Score = (Risk Weight) x (Completion Status) x (100), where the risk weight is a value between 0 and 1, the completion status has a value of 0 for incomplete status and 1 for complete status", which describes the abstract idea of merely performing a mathematical calculation and which is similar and corresponds to the abstract concept(s) of a fundamental economic practice (e.g., concepts relating to the economy and commerce) as well as mathematical relationships and/or formulas (e.g., mathematical concepts, algorithms, relationships, formulas, calculations as in Flook).

> "Determining, by the computer, the knowledge maturity risk based on said maturity score based, wherein the knowledge maturity risk increases as the maturity score decreases", which describes the abstract idea of merely performing a mathematical calculation and which is similar and corresponds to the abstract concept(s) of a fundamental economic practice (e.g., concepts relating to the economy and commerce) as well as mathematical relationships and/or formulas (e.g., mathematical concepts, algorithms, relationships, formulas, calculations as in Flook).
>
> "Conducting a trade or transfer of the intellectual property products or services based on the knowledge maturity risk, wherein knowledge is intellectual property-related products and services", which describes the abstract idea of merely conducting trading transactions of a product on an exchange and which is similar and corresponds to the abstract concept(s) of a fundamental economic practice (e.g., concepts relating to the economy and commerce).

Id. at 2–3; Ans. 6–8. "Hence the steps of the claim, taken individually or as an ordered combination, correspond to abstract ideas." *Id.* at 3.

Appellants do not dispute the Examiner's characterization of the claim and corresponding abstract ideas. Rather, Appellants take issue with the Examiner's reliance on the USPTO's eligibility guidelines. Appeal Br. 3 (citing *In re Smith*, 815 F.3d 816 (Fed. Cir. 2016). Appellants do not address the Examiner's analysis, but instead argue the legitimacy of the PTO's eligibility guidelines. *Id.* at 4 ("Mere recitation from a questionable flowchart penned by an anonymous source and accompanied by conclusory remarks is not the basis for any rejection.").

We cannot address Appellants' argument that the PTO's Guidelines on Patent Subject Matter Eligibility exceeds the scope of § 101. Appellants' challenge to the Guidelines is not properly before us in this Appeal, and thus, unpersuasive of Examiner error. *See* 35 U.S.C. § 141(a) (stating that

an applicant "dissatisfied with the final decision" of the Board may appeal that decision to the Federal Circuit).

Appellants' argument that the rejection is not based on preemption (Appeal Br. 5) is not persuasive. *Cf. OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1362–63 (Fed. Cir.) ("[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."), *cert. denied* 136 S. Ct. 701 (2015). Preemption is not a separate test for patent eligibility or under the Supreme Court's *Alice* framework, and as such, the rejection was not required to be based on preemption. *See* Ans. 5 ("preemption not an issue if it already fails the 2 part test of the Mayo test"). 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* framework, "preemption concerns are fully addressed and made moot." *Id.*

We also disagree with Appellants' contention that the Examiner failed to address the claims as a whole. Appeal Br. 8–9. Indeed, as shown above, the Examiner assesses the claim as a whole under the broadest reasonable interpretation of the claim in light of the Specification, and individually analyzes each limitation. Besides expressing their disagreement, Appellants fail to substantively challenge and rebut the Examiner's explicit findings.

When considered collectively, the limitations of claim 1 recite trading financial instruments (i.e., knowledge stocks and futures) based on the

knowledge maturity risk. Conducting a security transaction is a fundamental economic practice that falls within the Guidance's "Certain methods of organizing human activity," which is an abstract idea. *See* Guidance, 84 Fed. Reg. at 52 n.14 (*citing Alice*, 573 U.S. at 219–20 (concluding that use of a third party to mediate settlement risk is a "fundamental economic practice" and, thus, an abstract idea); *id.* (describing the concept of risk hedging identified as an abstract idea in *Bilski* as "a method of organizing human activity"); *Bilski*, 561 U.S. at 611–12 (concluding that hedging is a "fundamental economic practice" and, therefore, an abstract idea);[3] *Inventor Holdings, LLC v. Bed Bath & Beyond, Inc.*, 876 F.3d 1372, 1378–79 (Fed. Cir. 2017) (holding that concept of "local processing of payments for remotely purchased goods" is a "fundamental economic practice, which *Alice* made clear is, without more, outside the patent system."); *OIP Techs.*,

[3] For example, independent claim 1 at issue in *Bilski* (561 U.S. at 599) reads as follows:

> (a) initiating a series of transactions between said commodity provider and consumers of said commodity wherein said consumers purchase said commodity at a fixed rate based upon historical averages, said fixed rate corresponding to a risk position of said consumers;
>
> (b) identifying market participants for said commodity having a counter-risk position to said consumers; and
>
> (c) initiating a series of transactions between said commodity provider and said market participants at a second fixed rate such that said series of market participant transactions balances the risk position of said series of consumer transactions.

The security transaction recited here in independent claim 1 is more basic than the claim determined to be ineligible in *Bilski*, because independent claim 1 only involves one security transaction, while the claim in *Bilski* involved "initiating a series of transactions" between multiple entities.

788 F.3d at 1362–63 (concluding that claimed concept of "offer-based price optimization" is an abstract idea "similar to other 'fundamental economic concepts' found to be abstract ideas by the Supreme Court and this court.").

Accordingly, claim 1 recites a judicial exception.

Does claim 1"integrate that exception into a practical application?"

Having determined that claim 1 recites a judicial exception, we next look to whether the claim recites "additional elements that integrate the exception into a practical application." Guidance, 84 Fed. Reg. at 53–54. When a claim recites a judicial exception and fails to integrate the exception into a practical application, the claim is "directed to" the judicial exception. *Id.* at 51. A claim may integrate the judicial exception when, for example, it reflects an improvement to technology or a technical field. *Id.* at 55.

We are unable to discern any improvement to computer technology. *See* MPEP § 2106.05(a). The additional limitations of independent claim 1 recite "a computer-implemented program stored on a non-transitory computer-readable medium that, when loaded into a computer, causes the computer to perform" steps for conducting a security transaction based on the knowledge security risk, and not how a computer operates to perform those functions. There are no details as to how the computer performs this task. The recitation of a result-oriented solution that lacks any details as to how the computer performed the modifications is the equivalent of the words "apply it." *Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1341–42 (Fed. Cir. 2017) (*citing Elec. Power Grp., LLC*, 830 F.3d 1350, 1356 (Fed. Cir. 2016) (cautioning against claims "so result-focused, so functional, as to effectively cover any solution to an identified

problem.")). This is indistinguishable from mere instructions to conduct a trade based on the determined knowledge maturity risk, which is part of conducting a security transaction, on a computer. MPEP §§ 2106.05(f), (h).

Appellants' reliance on *Trading Technologies*[4] is unavailing (Appeal Br. 5–6) because claim 1 does not even recite a graphical user interface. In *Trading Technologies*, the Federal Circuit accepted the lower court's holding, that the claims provided "an inventive concept that allows traders to more efficiently and accurately place trades using this electronic trading system." *Trading Technologies*, 675 F. App'x at 1004. "The court distinguished this system from the routine or conventional use of computers or the Internet, and concluded that the specific structure and concordant functionality of the graphical user interface are removed from abstract ideas, as compared to conventional computer implementations of known procedures." *Id.* Thus, the distinguishing feature for the claims in *Trading Technologies* was an advance in efficiency provided by an improved graphical user interface as compared to other computer processes. In contrast to *Trading Technologies*, no such distinguishing features are recited in claim 1, and the method before us does not concern an improvement to a technology.

Furthermore, Appellants argue "the present claims are comparable to *Diamond v. Diehr*."[5] Appeal Br. 7. Unlike the process claimed in *Diehr*, which was directed to a specific industrial process, i.e., "a physical and chemical process for molding precision synthetic rubber products" (*Diehr*,

[4] *Trading Techs. Int'l Inc. v. CQG, Inc.*, 675 F. App'x 1001 (Fed. Cir. 2017) (hereinafter "*Trading Technologies*").
[5] *Diamond v. Diehr*, 450 U.S. 175 (1981).

450 U.S. at 184), claim 1 merely recites a computer-implemented method of conducting a trade based on the determined knowledge maturity risk. Achieving a better result by mathematical manipulation of data (determining a maturity score and knowledge maturity risk) does not by itself transform an otherwise abstract idea into patentable subject matter. The Court held the claims in *Diehr* to be patent eligible *despite* the fact that several steps of the process used a mathematical equation, not because of it. *Id.* *Diehr*, in contrast, employed the result of its calculations to determine the cure time of the rubber and signal the mold to open.

Appellants' reliance on *Visual Memory*[6] (Appeal Br. 8) is also unpersuasive. The patent-eligible claim of *Visual Memory* was directed to "[c]onfiguring the [claimed] memory system based on the type of processor connected to the memory system [, which] is the improvement in computer technology." *Visual Memory*, 867 F.3d at 1261. The patent-eligible claim in *Visual Memory* recited features that improved the computer memory. In contrast to the claim at issue in *Visual Memory* and as discussed above, Appellants' claim is directed to conducting a trade based on the mathematically determined knowledge maturity risk—not an improvement of computer technology.

Alice Step 2

Does claim 1 provide an inventive concept?

To determine whether a claim provides an inventive concept, the additional elements are considered—individually and in combination—to determine whether they (1) add a specific limitation beyond the judicial exception that is not "well-understood, routine, [and] conventional" in the

[6] *Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253 (Fed. Cir. 2017).

field or (2) simply append well-understood, routine, and conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception. Guidance, 84 Fed. Reg. at 56.

In that regard, Appellants argue that under *Berkheimer v. HP Inc.*, 881 F.3d 1360 (Fed. Cir. 2018), the Examiner "erroneously declare[d] that no evidence is needed for a factual finding" of whether a claim element or combination of elements is well-understood, routine, and conventional. Reply Br. 5. We disagree because the court in *Berkheimer* held that "[t]he patent eligibility inquiry may contain underlying issues of fact." *Berkheimer*, 881 F.3d at 1365 (quoting *Mortgage Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1325 (Fed. Cir. 2016) ("The § 101 inquiry '***may*** contain underlying factual issues."')). The inquiry as to whether a claim element or combination is well-understood, routine, and conventional falls under step two in the § 101 framework. *Berkheimer v. HP Inc.*, 890 F.3d 1369, 1374 (Fed. Cir. 2018) (citation omitted). As such, there is no genuine issue of material fact when the only alleged "inventive concept" is the abstract idea. *Id.* ("*Berkheimer* and *Aatrix* leave untouched the numerous cases from this court which have held claims ineligible because the only alleged 'inventive concept' is the abstract idea") (citation omitted). "When there is no genuine issue of material fact regarding whether the claim element or claimed combination is well-understood, routine, [and] conventional to a skilled artisan in the relevant field, this issue can be decided on summary judgment as a matter of law." *Berkheimer*, 881 F.3d at 1368. Thus, evidence *may* be helpful where, for instance, facts are in dispute, but evidence is not always necessary. Appellants have not persuaded us that a factual dispute has arisen and evidence is necessary to

resolve such a dispute. "Patent law does not protect claims to an 'asserted advance in the realm of abstract ideas . . . no matter how groundbreaking the advance.'" *Berkheimer*, 890 F.3d at 1373 (citing *SAP Am., Inc. v. Investpic, LLC*, 890 F.3d 1016, 1024 (Fed. Cir. 2018)).

As for the recited computer components ("a computer-implemented program stored on a non-transitory computer-readable medium . . . loaded into a computer"), we agree with the Examiner that they are "well-understood, routine, conventional," and thus, do not provide an "inventive concept" that is "significantly more" under *Alice*. *See* Ans. 10.

In view of the foregoing, we are not persuaded that the Examiner erred in concluding that claim 1 is directed to patent-ineligible subject matter. Accordingly, we sustain the Examiner's rejection of claim 1 under 35 U.S.C. § 101, and of dependent claims 2–8, 20, and 21, which are not separately argued.

DECISION

We AFFIRM the rejection under 35 U.S.C. § 101.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED