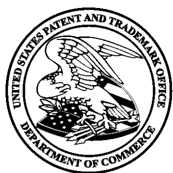

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte TIMOTHY P. MCCANDLESS and MEHRSHAD SETAYESH

Appeal 2019-003130
Application 13/795,802
Technology Center 3600

Before MAHSHID D. SAADAT, ELENI MANTIS MERCADER, and KRISTEN L. DROESCH, *Administrative Patent Judges.*

MANTIS MERCADER, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant[1] appeals from the Examiner's decision to reject claims 1–27. *See* Final Act. 1. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

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[1] We use the word Appellant to refer to "applicant" as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as the assignee Oracle International Corporation of Redwood Shores, California. Appeal Br. 3.

CLAIMED SUBJECT MATTER

The claims are directed to a method and system for performing trend analysis of themes in social data. Claim 1, reproduced below, is illustrative of the claimed subject matter:

> 1. A computer implemented method for analyzing social media data to identify one or more trends and perform trend analysis on a portion of the social media data representing a range of time, the method comprising:
>
> analyzing a portion of the social media data using an analysis unit, the analysis unit being communicatively coupled to receive inputs from one or more online social data sources and to provide analysis outputs to a workflow engine, the analysis unit generating trend analysis for the portion of the social media data, the analysis of the portion of the social media data performed by a process comprising:
>
> receiving social media data from the one or more online social data sources transmitted over one or more electronic communications links, the social media data representing a first range of time, performing latent semantic analysis on a portion of the social media data to identify themes within the social media data, the portion of the social media data comprising some or all of the social media data and representing a second range of time, performing semantic filtering to remove content from within the social media data resulting in a reduction of the social media data that is to be clustered, clustering at least some of the portion of the social media data into one or more clusters by classifying the social media data based on at least the themes identified as a result of the latent semantic analysis, and performing trend analysis on data from the one or more clusters over the second range of time, the trend analysis comprising both:
>
> (1) tracking a volume of the data from the one or more clusters over the second range of time, and
>
> (2) performing sentiment analysis on the volume of the data from the one or more clusters over the second range of time;

processing trend analysis results using a workflow engine, the workflow engine processing the trend analysis results using a set of rules provided in a rulebase, the trend analysis results processed by:

receiving the trend analysis results from the analysis unit transmitted over one or more electronic communications links

identifying one or more items based at least in part on the trend analysis results;

and

automatically processing at least some of the one or more items by identifying a first rule from the set of rules for determining whether to create an electronic message, the electronic message being sent over the one or more electronic communication links to a specific destination based at least on a second rule from the set of rules, the second rule corresponding to identifying the specific destination for the electronic message.

REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Burkitt	US 8,769,576 B2	July 1, 2014
Choudhary	US 8,775,429 B2	July 8, 2014
England	US 2012/0290399 A1	Nov. 15, 2012
Szucs	US 2013/0246430 A1	Sept. 19, 2013

REJECTIONS

Claims 1–27 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. Final Act. 2.

Claims 1–4, 7–12, 15–20, and 23–27 are rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over England, in view of Szucs, in further view of Choudhary. Final Act. 6.

Claims 5, 6, 13, 14, 21, and 22 are rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over England, in view of Szucs, in further view of Choudhary, in further view of Burkitt. Final Act. 17.

OPINION

Claims 1–27 are rejected under 35 U.S.C. § 101

An invention is patent eligible if it claims a "new and useful process, machine, manufacture, or composition of matter." 35 U.S.C. § 101. However, the U.S. 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 Court's two-part framework, described in *Mayo* and *Alice*. *Alice*, 573 U.S. 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.").

Concepts determined to be abstract ideas, and thus patent ineligible, include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–20; *Bilski*, 561 U.S. at 611); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as "molding rubber products" (*Diamond v. Diehr*, 450 U.S. 175, 191 (1981)); "tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores" (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S.

252, 267–68 (1853))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

In *Diehr*, the claim at issue recited a mathematical formula, but the Court held that "a claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula." *Diehr*, 450 U.S. at 187; *see also id.* at 191 ("We view respondents' claims as nothing more than a process for molding rubber products and not as an attempt to patent a mathematical formula."). Having said that, the Court also indicated that a claim "seeking patent protection for that formula in the abstract . . . is not accorded the protection of our patent laws, and this principle cannot be circumvented by attempting to limit the use of the formula to a particular technological environment." *Id.* (citation omitted) (citing *Benson* and *Flook*); *see, e.g.*, *id.* at 187 ("It is now commonplace that an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.").

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.* (alterations in original) (quoting *Mayo*, 566 U.S. at 77). "[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention." *Id.*

In January 2019, the U.S. Patent and Trademark Office (USPTO) published revised guidance on the application of § 101. 2019 Revised Patent

Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) ("2019 Revised Guidance").[2] "All USPTO personnel are, as a matter of internal agency management, expected to follow the guidance." *Id.* at 51; *see also* October 2019 Update at 1.

Under the 2019 Revised Guidance and the October 2019 Update, 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) ("Step 2A, Prong One"); and
>
> (2) additional elements that integrate the judicial exception into a practical application (*see* MPEP § 2106.05(a)–(c), (e)–(h) (9th ed. Rev. 08.2017, Jan. 2018)) ("Step 2A, Prong Two").[3]

2019 Revised Guidance, 84 Fed. Reg. at 52–55.

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

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[2] In response to received public comments, the Office issued further guidance on October 17, 2019, clarifying the 2019 Revised Guidance. USPTO, *October 2019 Update: Subject Matter Eligibility* (the "October 2019 Update") (available at https://www.uspto.gov/sites/default/files/documents/peg_oct_2019_update.pdf).

[3] This evaluation is performed by (a) identifying whether there are any additional elements recited in the claim beyond the judicial exception, and (b) evaluating those additional elements individually and in combination to determine whether the claim as a whole integrates the exception into a practical application. *See* 2019 Revised Guidance - Section III(A)(2), 84 Fed. Reg. at 54–55.

> (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.

2019 Revised Guidance, 84 Fed. Reg. at 52–56.

Step 1 of the Revised Guidance asks whether the claimed subject matter falls within the four statutory categories of patentable subject matter identified by 35 U.S.C. § 101: process, machine, manufacture, or composition of matter. *See* Revised Guidance. Claim 1 is a method, claim 9 is a computer program product and claim 17 is a system. *See* independent claims 1, 9, and 17.

Revised Guidance Step 2A, Prong 1

Under Step 2A, Prong 1 of the Revised Guidance, we determine whether the claims recite 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). *See* Revised Guidance.

The Examiner finds that all the limitations of claim 1 pertain to organizing human activity "relating to concepts involving collecting and analyzing information, . . . concepts involving organizing information, . . . and concepts involving data recognition, collection, storage and management." Final Act. 4.

Although we do not agree that all the limitations of claim 1 relate to organizing human activity, we find that the following limitations pertain to organizing human activity:

> receiving social media data from the one or more online social data sources transmitted over one or more electronic communications links, the social media data representing a first range of time,
>
> performing latent semantic analysis on a portion of the social media data to identify themes within the social media data, the portion of the social media data comprising some or all of the social media data and representing a second range of time,
>
> performing semantic filtering to remove content from within the social media data resulting in a reduction of the social media data that is to be clustered, clustering at least some of the portion of the social media data into one or more clusters by classifying the social media data based on at least the themes identified as a result of the latent semantic analysis

Claim 1. Our reviewing court has concluded that classifying and storing data in an organized manner is a well-established "basic concept" sufficient to fall under *Alice* step 1. *In re TLI Commc'ns LLC*, 823 F.3d 607, 613 (Fed. Cir. 2016).

We, therefore, conclude claim 1 recites a concept of organizing human activity performed within the human mind, which falls within the mental processes category of abstract ideas identified in the Revised Guidance.

Revised Guidance Step 2A, Prong 2

Under Step 2A, Prong 2 of the Revised Guidance, we next determine whether the claims recite additional elements that integrate the judicial exception into a practical application (*see* MPEP §§ 2106.05(a)–(c), (e)–(h)). The "additional elements" recited in claim 1 include the claimed "analysis unit" and the limitations pertaining to performing "trend analysis" over a "second range of time" and in particular the following limitations:

analyzing a portion of the social media data using an analysis unit, the analysis unit being communicatively coupled to receive inputs from one or more online social data sources and to provide analysis outputs to a workflow engine, the analysis unit generating trend analysis for the portion of the social media data, the analysis of the portion of the social media data performed by a process comprising:

. . .

performing trend analysis on data from the one or more clusters over the second range of time, the trend analysis comprising both:

(1) tracking a volume of the data from the one or more clusters over the second range of time, and
(2) performing sentiment analysis on the volume of the data from the one or more clusters over the second range of time;

processing trend analysis results using a workflow engine, the workflow engine processing the trend analysis results using a set of rules provided in a rulebase, the trend analysis results processed by:

receiving the trend analysis results from the analysis unit transmitted over one or more electronic communications links,

identifying one or more items based at least in part on the trend analysis results; and

automatically processing at least some of the one or more items by identifying a first rule from the set of rules for determining whether to create an electronic message, the electronic message being sent over the one or more electronic communication links to a specific destination based at least on a second rule from the set of rules, the second rule corresponding to identifying the specific destination for the electronic message.

Claim 1. To integrate the exception into a practical application, the additional claim elements must, for example, improve the functioning of a

computer or any other technology or technical field (*see* MPEP § 2106.05(a)), apply the judicial exception with a particular machine (*see* MPEP § 2106.05(b)), affect a transformation or reduction of a particular article to a different state or thing (*see* MPEP § 2106.05(c)), or apply or use the judicial exception in some other meaningful way beyond generally linking the use of the judicial exception to a particular technological environment (*see* MPEP § 2106.05(e)). *See* Revised Guidance.

The Examiner finds the "workflow engine" as being a general purpose computer performing generic computer functions but does not address the "analysis unit" performing *trend analysis over a second range of time* by "(1) tracking a volume of the data from the one or more clusters over the second range of time, and (2) performing sentiment analysis on the volume of the data from the one or more clusters over the second range of time." *See* Final Act. 4–5.

We agree with Appellant's argument that under step 2A, prong 2, the claim recites an abstract idea combined with additional elements, because the analysis unit performing the trend analysis over a second range of time by "(1) tracking a volume of the data from the one or more clusters over the second range of time, and (2) performing sentiment analysis on the volume of the data from the one or more clusters over the second range of time" solves the technical problem of how to make sense of the different forms and types of online social data wherein after the first clustering of the social data into clusters based on themes, tracking a volume of data from the one or more clusters over a range of time allows for detection of trends that may exist for the identified themes. Appeal Br. 14–15.

Figure 2B is reproduced below:

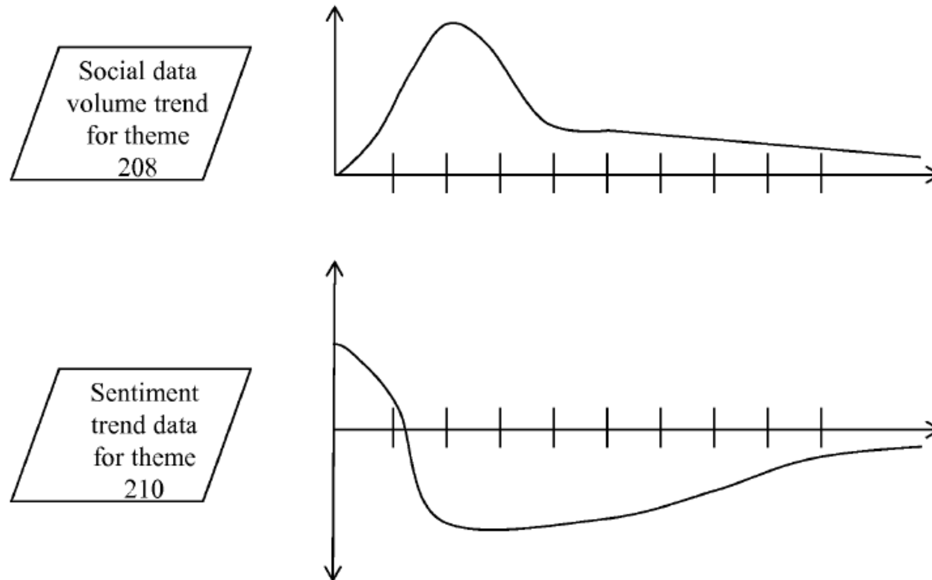

Figure 2B illustrates tracking a volume of the data from one or more clusters over a range of time, and performing sentiment analysis on the volume of the data from the one or more clusters over the range of time.

As shown in Figure 2B the theme trend data 208 can be analyzed in conjunction with the sentiment trend data 210 for the same timeframe. Spec. para. 31. It can be seen that there is a spike in interest for a given theme early in the analyzed timeframe and at the same point in time, the sentiment trend data sharply drops in sentiment for the same topic, moving from a positive opinion to a negative opinion. *Id.* The trend analysis shows that the negative opinion remains throughout that entire timeframe. *Id.* This example analysis shows an interesting moment-in-time correlation between

a spiked interest in a topic and a steep drop in sentiment for that topic (i.e., possibly based on an event that was viewed negatively by the public), along with the longer term effects of that correlation. *Id.*

We agree with Appellant that the themes can be tracked over the period of time to detect trends, if any, that exist for the identified themes and the trend data can be used to understand the changes that occur with respect to the topics and subjects that interests individuals when they provide content on social media sites. *See* Appeal Br. 15 (citing para. 26). Thus, we agree with Appellant that "[t]his permits the system to understand the contextual and semantic significance of terms that appear within the received data." Appeal Br. 15.

We further agree with Appellant that "the improved results are much more relevant and accurate as opposed to conventional methods of monitoring social media data, which create inaccurate analysis results due to creating results that overly emphasize less meaningful topics while ignoring more meaningful topics." Appeal Br. 15 (citing Spec. para. 4). The trend analysis over a range of time, as opposed to prior art systems that perform a snapshot in time analysis, improve the technical field. *See* Spec. para. 4.

We conclude that claim 1 and claims 9 and 17 reciting similar claim limitations, include additional elements that integrate the abstract limitations into a practical application.

Accordingly, claims 1–27 describe patent-eligible subject matter.

Obviousness Rejection

Appellant argues, *inter alia*, that the proposed combination of England, Szucs, and Choudhary, alone or in combination, does not teach or suggest: (a) "clustering at least some of the portion of the social media data into one or more clusters by classifying the social media data based on at

least the themes identified as a result of the latent semantic analysis" and performing trend analysis where "the trend analysis comprising . . . tracking a volume of the data from the one or more clusters over the second range of time"; and "(b) performing *the trend analysis comprising* ***both*** *(1) tracking a volume of the data from the one or more clusters over the second range of time, and (2) performing sentiment analysis on the volume of the data from the one or more clusters over the second range of time.*" Appeal Br. 38–39 (underlining omitted, italics added). Appellant argues and we agree, that England teaches only performing sentiment analysis on multiple websites, social posts, and social network sites with absolutely no description of the trend analysis comprising both steps of: tracking a volume of data from the one or more clusters and then performing sentiment analysis on the volume of the data from the one or more clusters over the second range of time. *Id.* at 39.

We agree with Appellant that neither paragraph 72 nor paragraph 81 teach the recited claim limitation. *See* England, paras. 72 and 81.

"[W]hen evaluating claims for obviousness under 35 U.S.C. § 103, all the limitations of the claims must be considered and given weight." *In re Gardner*, 449 F. App'x 914, 916 (Fed. Cir. 2011) (non-precedential) (citing *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530 (Fed. Cir. 1983)); *see In re Glatt Air Techs., Inc.*, 630 F.3d 1026, 1030 (Fed. Cir. 2011) (holding obviousness was not established where the prior art failed to teach the claimed shielding).

Accordingly, constrained by the record before us, we reverse the Examiner's rejection of claim 1, and, for the same reasons, the rejections of claims 2–27 as the additional cited references do not cure the above recited deficiency.

CONCLUSION

The Examiner's rejections of claims 1–27 are reversed.

More specifically, the Examiner's rejection of claims 1–27 under 35 U.S.C. § 101 is reversed, and the rejection of claims 1–27 under 35 U.S.C. § 103 is reversed.

DECISION SUMMARY

Claims Rejected	**35 U.S.C. §**	**Reference(s)/Basis**	**Affirmed**	**Reversed**
1–27	101	Eligiblity		1–27
1–4, 7–12, 15–20, 23–27	103	England, Szucs, Choudhary		1–4, 7–12, 15–20, 23–27
5, 6, 13, 14, 21, 22	103	England, Szucs, Choudhary, Burkitt		5, 6, 13, 14, 21, 22
Overall Outcome:				1–27

REVERSED