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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte HAENGJU LEE and YU-AN SUN

Appeal 2017-011051
Application 13/796,573
Technology Center 3600

Before: ST. JOHN COURTENAY III, BETH Z. SHAW, and JOYCE CRAIG, *Administrative Patent Judges*.

SHAW, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from a rejection of claims 1–14. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

The claims are directed to fault tolerant combinatorial auctions for tasks having time and precedence constraints with bonuses and penalties. Claim 1, reproduced below, is illustrative of the claimed subject matter:

> 1 A method for assigning tasks to one or more suppliers comprising:
>
> maintaining a database on a data storage device, said database having therein one or more ratings for one or more suppliers, each rating representing the probability of its corresponding supplier successfully completing assigned sub-tasks, wherein each rating is based on the supplier's past performance with respect to previously assigned sub-tasks;
>
> providing at least one buyer's terminal used by a buy to enter a task into the system;
>
> providing at least one supplier's terminal used by a supplier to enter one or more bids into the system;
>
> providing a data processor, said data processor being:
>
> (i) operatively connected to the at least one buy's terminal to receive tasks therefrom;
>
> (ii) operatively connected to the at least one supplier's terminal to receive bids therefrom; and
>
> (iii) operatively connected to the data storage device to selectively obtain ratings therefrom;
>
> receiving at said data processor a task and a valuation therefor submitted by a buyer via the at least one buyer's terminal, said task being defined by a plurality of sub-tasks, a set of precedence relationships specified between the sub-tasks, and a designated start time for the task and a designated end time for the task corresponding to an interval in which the task is to be completed;
>
> receiving at said data processor one or more bids associated with the task from one or more suppliers via the at

least one supplier's terminal, each supplier submitting one or more of the bids and each bid identifying (i) a set of the sub-tasks for which the bid is being submitted, (ii) a proposed price for each individual sub-task in the identified set thereof and (iii) for each particular sub-task in the identified set, a schedule including a proposed start time range in which the supplier submitting the bid proposes to begin the particular sub-task in the identified set and a duration in which the supplier submitting the bid proposes to complete the particular sub-task;

accessing the database with the data processor to obtain ratings therefrom for those suppliers submitting bids in order to determine a probability of each supplier successfully completing each sub-task for which they submitted a bid;

analyze with said data processor, the received task and valuation therefore, received bids associated with the task and the obtained ratings from the database in order to identify one or more winning bids from the obtained bids based on the proposed prices of the bids, the determined success probabilities and the proposed schedules of the bids, said winning bids satisfying constraints of the task;

communicating the one or more winning bids from the data processor back to the buyer's terminal; and

outputting the one or more winning bids on the buyer's terminal.

REJECTIONS

The Examiner rejected claims 1–14 under 35 U.S.C. 101. Final Act. 2.

CONTENTIONS AND ANALYSIS

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.").

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, 69 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as "molding rubber products" (*Diamond v. Diehr*, 450 U.S. 175, 192 (1981)); "tanning, dyeing, making waterproof cloth, vulcanizing India rubber, smelting ores" (*id.* at 184 n.7 (quoting *Corning v. Burden*, 56 U.S. 252, 267–68 (1854))); 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 Supreme 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 176; *see also id.* at 192 ("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 Supreme 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.* (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.* (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.*

The PTO recently published revised guidance on the application of § 101. USPTO's January 7, 2019 Memorandum, *2019 Revised Patent Subject Matter Eligibility Guidance* ("Memorandum"). Under that 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 interactions 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 Memorandum.

The Examiner concludes claims 1–14 are directed to assigning tasks to one or more suppliers, an abstract idea because the assignment of tasks to one or more suppliers is a way of organizing human activities. Final Act. 2. The Examiner also concludes that a bid that includes a price and schedule is an abstract idea because it is similar to the fundamental economic practice at issue in *Bilski* and *Alice*. *Id.* at 3.

We agree that the assignment of tasks to one or more suppliers is a way of organizing human activities and that a bid that includes a price and schedule is an abstract idea because it is similar to the fundamental economic practice at issue in *Bilski* and *Alice*. In particular, "communicating the one or more winning bids from the data processor back

to the buyer's terminal; and outputting the one or more winning bids on the buyer's terminal," is a way of organizing human activities. Additionally, the limitation "receiving at said data processor one or more bids associated with the task from one or more suppliers . . ." is similar to the fundamental economic practice at issue in *Bilski* and *Alice.*

We next determine if there are there additional element(s) or a combination of elements in the claim that integrate the judicial exception into a practical application. *See* MPEP § 2106.05(a)–(c), (e)–(h); Memorandum. To the extent Appellants advance arguments with respect to these elements, we address them below. Appellants argue:

> [T]he technology is improved insomuch as the analysis which determines what supplier to assign sub-tasks to takes into account not only the constrains of the task and the bids of the suppliers but also factors in ratings which reflect the historical record of successful task completion by the respective suppliers. Furthermore, as the supplier ratings are maintained in a separate dedicated database, the supplier is relived of the burden of having to re-transmit their historical performance record with each bid. Hence, data flow between the suppliers' terminals and the data processor conducting the evaluation is reduced thereby permitting the data processor to retrieve bid data faster and/or more efficiently such that the functionality of the data processor is improved. Furthermore, when negotiating a transaction, the anonymity of a supplier with respect to a given task requestor may inhibit that task requestor from accepting an otherwise viable bid from a reputable supplier. Supplier anonymity is further exacerbated in on-line negotiations, where parties are not meeting face-to-face.

App. Br. 9.

We are not persuaded by these arguments that the combination of the additional recited claim elements integrate the abstract idea into a practical

application, such that the technology itself is improved. Rather, Appellants argue the speed and efficiency of data flow is improved.

Thus, we are not persuaded that the abstract ideas are integrated into a practical application and, therefore, the claims are directed to a judicial exception.

Turning to Step 2B of the analysis, we evaluate the additional elements, individually and as a combination, to determine whether the claims provide an inventive concept. The Examiner determines:

> Claims 1 and 8 recite the additional limitations of a database, a storage device, a processor, a buyer terminal, and a supplier terminal. These limitations are generic computer components that are claimed to perform their basic functions of processing, storing, receiving, transmitting, and displaying data through a program that implements the abstract idea. These limitations are *routine and conventional*.

Ans. 4 (emphasis added). The Examiner also determines a processor, data store, and data entry terminals "are routine and conventional computer components." *Id.* at 5; *see* Final Act. at 3–4.

We conclude the Examiner has not established, on this record, that these elements, considered individually and as an ordered combination, were well-understood, routine, and conventional. Regarding a determination that "additional" claim elements are merely routine and conventional, the Federal Circuit has explained that:

> Whether something is well-understood, routine, and conventional to a skilled artisan at the time of the patent is a factual determination. Whether a particular technology is well-understood, routine, and conventional goes beyond what was simply known in the prior art. The mere fact that something is disclosed in a piece of prior art, for example, does not mean it was well-understood, routine, and conventional.

Berkheimer v. HP Inc., 881 F.3d 1360, 1369 (Fed. Cir. 2018).

To find an element to be well understood, routine, or conventional, the Examiner must support the rejection with one of the following:

> 1. A citation to an express statement in the specification or to a statement made by an applicant during prosecution that demonstrates the well-understood, routine, conventional nature of the additional element(s).
> 2. A citation to one or more of the court decisions discussed in MPEP § 2106.05(d)(II) as noting the well-understood, routine, conventional nature of the additional element(s).
> 3. A citation to a publication that demonstrates the well-understood, routine, conventional nature of the additional element(s).
> 4. A statement that the examiner is taking official notice of the well-understood, routine, conventional nature of the additional element(s).

Berkheimer Memo.[1]

The Examiner does not support the rejection with one of these statements or citations. For these reasons, we find the rejection insufficiently supported on the record before us. Accordingly, we do not sustain the rejection of claims 1–14 under 35 U.S.C. 101.

DECISION

For the above reasons, the Examiner's rejection of claims 1–14 is reversed.

REVERSED

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[1] Memorandum on *Changes in Examination Procedure Pertaining to Subject Matter Eligibility, Recent Subject Matter Eligibility Decision* (*Berkheimer v. HP, Inc.*) (Apr. 19, 2018) available at: https://www.uspto.gov/sites/default/files/documents/memo-berkheimer-20180419.PDF