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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte PAUL D. ADCOCK, MICHAEL A. CORMACK, AMY FARNSTROM, and ROBERT A. HILL[1]

Appeal 2017-001617
Application 14/029,087
Technology Center 3600

Before WILLIAM V. SAINDON, JENNIFER L. McKEOWN, and JOYCE CRAIG, *Administrative Patent Judges*.

Opinion for the Board filed by JENNIFER L. McKEOWN, *Administrative Patent Judge*.

Opinion Dissenting filed by JOYCE CRAIG, *Administrative Patent Judge*.

McKEOWN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's decision to reject claims 50–60 and 70. Claims 1–49 are canceled and claims 61–69 are withdrawn. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

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[1] The real party of interest is identified as NYSE Group, Inc.

STATEMENT OF THE CASE

Appellants' claimed invention is directed to "[a]n enhanced system and method for handling, matching and executing a diverse group of limit-priced orders in an electronic options environment []." Abstract.

Claim 50 is illustrative of the claimed invention and reads as follows:

> 50. A market center computing system which lists a plurality of options series and handles automatically repriceable orders, comprising:
>
> (a) one or more data structures defining an order book for each option series and a market maker quote book for each options series which are maintained by an order matching engine;
>
> (b) one or more data structures defining an away market best bid and offer book that is separate from the order book and the market maker quote book and is maintained by an away market quote engine;
>
> (c) at least a first interface for receiving orders, a second interface for receiving quotes and a third interface for receiving a top-of-book best bid and offer disseminated quotation from a plurality of away market centers for each option series;
>
> (d) a market center memory for storing code for analyzing and processing orders and quotes;
>
> (e) a processor for interacting with the interfaces, the order matching engine and the away market quote engine and executing the code for analyzing and processing orders and quotes, wherein the code, when executed:
>
> (e)(i) automatically activates the third interface to receive an away market quote from an away market center for a specified option series on the market center computing system;
>
> (e)(ii) automatically activates the away market quote engine to analyze the received away market quote to determine whether the away market quote has moved away from a price of an automatically repriceable order on an opposite side of the order book;
>
> (e)(iii) responsive to the away market quote engine determining that the away market quote has moved away from

> the price of an automatically repriceable order on the opposite side of the order book:
>
> (e)(iii)(A) causes the away market quote engine to automatically send a notification to the order matching engine;
>
> (e)(iii)(B) activates the order matching engine, upon receipt of the notification from the away market quote, to automatically evaluate the automatically repriceable order to determine whether the automatically repriceable order can be repriced more aggressively; and
>
> (e)(iii)(C) causes the order matching engine to automatically reprice the automatically repriceable order to a more aggressive price when it is determined that the evaluated automatically repriceable order can be repriced more aggressively,
>
> wherein the order matching engine evaluates and reprices the automatically repriceable order in response to and only upon receiving the notification from the away market quote engine.

App. Br. 28 (Claims Appendix).

THE REJECTION

The Examiner rejected claims 50–60 and 70 under 35 U.S.C. § 101 as directed to patent-ineligible subject matter. Final Act. 12–14.

ANALYSIS

THE REJECTION UNDER 35 U.S.C. § 101

Claims 50–60 and 70

Based on the record before us, we are persuaded that the Examiner erred in rejecting claims 50–60 and 70 as directed to patent-ineligible subject matter.

The Supreme Court, in *Alice*, reiterated the two-step framework previously set forth in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.,* 132 S. Ct. 1289, 1300 (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 Corp. Pty. Ltd. v. CLS Bank Int'l,* 134 S. Ct. 2347, 2355 (2014). The first step in that analysis is to "determine whether the claims at issue are directed to one of those patent-ineligible concepts" (*id.*), for example, to an abstract idea. If the claims are directed to one of the patent-ineligible concepts, the inquiry proceeds to the second step where the elements of the claims are considered "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,* 132 S. Ct. at 1297).

Under the first step of the analysis, the Examiner determines that the claims are directed to the abstract idea of processing repriceable orders. Final Act. 12–13. According to the Examiner, this is a longstanding and fundamental economic principle. *Id.* The Examiner also maintains that

> the present claimed process is merely "an idea of itself." The present claimed process is similar to the concept of "obtaining and comparing intangible data "and" comparing new and stored information using rules to identify options (i.e. obtaining quote data from away markets and comparing the quote data to price of repriceable order, and evaluating whether to reprice the orders). These concepts were found to be abstract concepts by the courts. Therefore, the present claims are directed to an abstract concept.

Final Act. 13–14.

Under the second step of the analysis, the Examiner determines that the claims do not add significantly more to the abstract idea. Final Act. 14. In particular, the Examiner explains that the claims recite generic computer components: a processor, a memory, an interface, and data structures. *Id.* These components, according to the Examiner, "perform basic computer functions, such as listing orders, obtaining incoming order data, comparing

prices, evaluating whether to reprice orders (i.e. compare data according to predefined rules or algorithm), and repricing the repriceable orders (i.e. manipulate data)." Final Act. 14; *see also* Final Act. 14 (noting that paragraph 40 of the Specification describes that the claimed market center may be performed on a general purpose computer and concluding that the claimed invention does not improve computer functioning). As such, the Examiner concludes that "[t]he recitation of the computer elements amounts to mere instructions to implement the abstract idea on a computer system" and do "not amount to significantly more than the abstract idea itself." *Id.*

On the other hand, Appellants allege that this case is similar to *Bascom Global Internet Services, Inc. v. At&t Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016) where

> the ordered combination of limitations describes a particular arrangement that also improves upon prior art processes and results in a benefit to end users. In particular, the ordered combination of limitations describe a novel configuration of two different and separate engines that perform different functions (as well as separate data structures and separate interfaces for different data sources) whose implementation, as discussed above, enables existing market center systems (among other things) to reprice orders while minimizing the impact of away market quote traffic on other components of the system, improving the speed and efficiency of the system for repricing orders. As discussed above, the particular arrangement of the components of the system also directly benefits the end users, by providing users faster display of the most up-to-date information and additional execution opportunities.

Reply Br. 9. Appellants also point out that the claimed improvement of the claims, namely including a separate away market engine to analyze away market bids, did not exist in the prior art systems. *Id.* Appellants then conclude that "because the claimed invention improves upon prior art

processes and benefits the end users, the claims are patent eligible under *BASCOM*."

We are persuaded that the Examiner erred in rejecting the claims as directed to patent ineligible subject matter. While we agree with the Examiner that the individual limitations are well-known, routine, and conventional components, "an inventive concept can be found in the non-conventional and non-generic arrangement of known, conventional pieces." *Bascom*, 825 F.3d at 1350.

Appellants outline how the claims include the inventive concept of separating the away market engine that improves the functioning of the computing system itself. App. Br. 8. As Appellant explains, a problem arose in electronic trading to receive "far more quotes being received than orders" and "a need arose for an electronic platfom1 that minimizes the impact of away market best bid and offer quote traffic on other components of the system." Reply Br. 5. Appellants describes that the claimed

> away market quote engine 23a only notifies order matching engine 21 of price shifts that may affect the order book. Away market quote engine 23a does not notify order matching engine 21 of away market quote traffic that does not affect the order book. In this manner, order matching engine 21 can proceed with its normal order matching functions without having to perform additional computational processing functions (i.e., repricing evaluation), unless instructed to do so by away market quote engine 23a.

App. Br. 7. Thus, the claimed separate away market quote engine

> *minimizes the impact of away market BBO quote traffic on other components of the system, particularly in regard to the ability of the system to display and execute orders and quotes with maximum speed and efficiency.*

App. Br. 7; *see also* App. Br. 9; Spec. ¶¶ 6, 11.

The Examiner fails to address these arguments. For example, the Examiner separately considers the order matching engine and the away market quote engine, but fails to consider the claimed ordered combination. *See* Ans. 5. Rather, the Examiner generally asserts that "separating components vs. integral component are well known in the computer art" and analogizes this to different departments of a company specializing in a specific function and that it is known this is more efficient. Ans. 5. The Examiner's reasoning does not consider the context of the claims, namely whether it was conventional to separate the away market engine. Moreover, the Examiner does not consider the ordered combination of limitations in that the claims not only separate the away market engine, but limit the impact of the away market on other market center systems by limiting repricing under particular conditions.

Namely, the ordered combination of the claims, including both the separation of the away market engine and the repricing function under particular conditions "enables existing market center systems (among other things) to reprice orders while minimizing the impact of away market quote traffic on other components of the system." Reply Br. 9. The particular arrangement claimed, therefore, "improve[s] an existing technological process" by minimizing the away market quote traffic. *Alice*, 134 S. Ct. at 2358. As such, we are persuaded that the Examiner erred in rejecting the claims as directed to patent ineligible subject matter. *See Bascom*, 827 F.3d at 1349–50 (finding the claims patent eligible because "the patent describes how its particular arrangement of elements is a technical improvement over prior art ways of filtering such content."); *see also Amdocs (Israel) Limited v. Openet Telecom, Inc.*, 841 F.3d 1288, 1300-01 (2016) (approving a claim

that "requires arguably generic components" but also "necessarily requires that these generic components operate in an unconventional manner to achieve an improvement in computer functionality"); *Trading Technologies International, Inc. v. CQG, Inc.*, 675 F. App'x 1001 (Fed. Cir. 2017) (unpublished)(finding of patent eligibility with respect to step two of Alice when the claims provided "an inventive concept that allows traders to more efficiently and accurately place trades using this electronic trading system.").

Accordingly, we reverse the Examiner's rejection of claims 50–60 and 70 as directed to non-statutory subject matter.

DECISION

We reverse the Examiner's decision to reject claims 50–60 and 70.

REVERSED

DISSENTING OPINION

CRAIG, Administrative Patent Judge.

I respectfully dissent. In my view, the Examiner did not err in rejecting the claims as directed to patent ineligible subject matter. I agree with the Examiner that the claims do not include limitations that amount to "significantly more" than the abstract idea because the claims do not include an improvement to another technology or technical field, an improvement to the functioning of the computer itself, or meaningful limitations beyond generally linking the use of an abstract idea to a particular technological environment. *See* Final Act. 12.

Appellants argue that, because the claimed invention improves upon prior art processes and benefits the end users, the claims are patent eligible under *Bascom*. Reply Br. 9 (citing *Bascom Global Internet Services, Inc. v. At&t Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016)). In particular, Appellants argue that the claimed system performs functions that are not merely generic because they minimize the impact of away market BBO quote traffic, "thereby improving the speed and efficiency of the system to display and execute orders/quotes, including additional execution opportunities provided by repricing." App. Br. 21. Appellants also argue that the novel configuration of the two recited engines "enables existing market center systems (among other things) to reprice orders while minimizing the impact of away market quote traffic on other components of the system, improving the speed and efficiency of the system for repricing orders." Reply Br. 9.

Here, the claims recite no details about how some computer functionality is performed more efficiently such that it (a) takes that computer functionality out of the world of "generic" and/or (b) leads to an improvement in the functioning of the computer itself. For example, the alleged technological improvement is an efficiency in "other components of the system," but those components and improvements are not claimed or detailed.

Instead, the recited computer components (e.g., "computing system," "processor," "data structures," "memory," "order matching engine," "away market quote engine") are recited at a high level of generality such that the claims recite generic computer components performing generic computer functions that are well-understood, routine and conventional activities. *See* Ans. 12. The argued improvement is really an improvement of the underlying economic practice itself, rather than a technological improvement of the computer system that implements the underlying economic practice. Such an improvement does not constitute an improvement to the functionality of the underlying computer system or computer technology.

For these reasons, I am not persuaded that the Examiner erred in determining that the recitation of separate data structures and separate engines in claims does not amount to significantly more than the abstract concept. *See* Ans. 3–7.

Accordingly, I would affirm the Examiner's rejection of claims 50–60 and 70 under 35 U.S.C. § 101. *See* Final Act. 12–14; Ans. 2.