Trials@uspto.gov
571.272.7822

Paper No. 50
Filed: March 2, 2015

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTERNATIONAL SECURITIES EXCHANGE, LLC,
Petitioner,

v.

CHICAGO BOARD OPTIONS EXCHANGE, INC.,
Patent Owner.

Case CBM2013-00051
Patent 8,266,044 B2

Before JUSTIN T. ARBES, RAMA G. ELLURU, and JAMES B. ARPIN, *Administrative Patent Judges.*

ELLURU, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 328(a) and 37 C.F.R. § 42.73

I. BACKGROUND

Petitioner, International Securities Exchange, LLC, filed a second corrected Petition (Paper 7, "Pet.") requesting review under the transitional program for covered business method patents of claims 1–3 of U.S. Patent No. 8,266,044 B2 (Ex. 1001, "the '044 patent"). Patent Owner, Chicago Board Options Exchange, Inc., filed a Preliminary Response (Paper 14, "Prelim. Resp."). On March 4, 2014, pursuant to 35 U.S.C. § 324, we instituted this trial as to claims 1–3 on one ground of unpatentability, 35 U.S.C. § 101 (Paper 15, "Dec. to Inst.").

Subsequent to institution, Patent Owner filed a Patent Owner Response (Paper 24, "PO Resp."), a First Supplemental Response (Paper 36, "PO First Supp. Resp."), a Second Supplemental Response (Paper 48, "PO Second Supp. Resp."), a Motion to Amend (Paper 23, "Mot."), and a Reply in support of its Motion (Paper 39, "PO Reply"). Petitioner filed a Reply (Paper 33, "Pet. Reply") to Patent Owner's Response, a First Supplemental Reply (Paper 38, "Pet. First Supp. Reply"), a Second Supplemental Reply (Paper 49, "Pet. Second Supp. Reply"), and an Opposition to Patent Owner's Motion to Amend (Paper 35, "Opp.").

An oral hearing was held on August 22, 2014, and a transcript of the hearing is included in the record (Paper 46, "Tr.").

We have jurisdiction under 35 U.S.C. § 6(c). This Final Written Decision is issued pursuant to 35 U.S.C. § 328(a) and 37 C.F.R. § 42.73.

For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 1–3 of the '044 patent are unpatentable.

A. The ’044 Patent

The ’044 patent, titled “Automated Trading Exchange System Having Integrated Quote Risk Monitoring and Integrated Quote Modification Services,” issued on September 11, 2012, based on U.S. Patent Application No. 13/178,289 (“the ’289 application”), filed on July 7, 2011.[1]

The ’044 patent relates to automated trading systems for option contracts (“options”). Ex. 1001, 1:18–22, Abstract. Specifically, the claimed invention is directed to systems for managing the risk of a maker of an options market in an automated trading system. *Id*. at 1:18–22.

Options are traded publicly on exchanges. *Id.* at 1:27–28. Each option covers certain rights to buy or sell an underlying security at a fixed price for a specified period of time. *Id*. at 1:28–31. The potential loss to the buyer of an option is no greater than the initial premium paid for the option, regardless of the performance of the underlying security. *Id*. at 1:37–39. On the contrary, in exchange for the premium, the seller of the option (“the market-maker”) assumes the risk of being assigned the obligation to buy or sell the underlying security, according to the option terms, if the contract is exercised. *Id*. at 1:40–45. Thus, writing options may entail large risks to the market maker. *Id*. at 1:44–45.

Many option trading systems utilize an “open outcry” method. *Id*. at

[1] The ’289 application is a continuation of U.S. Patent Application No. 12/035,996 (“the ’996 application”), which issued as U.S. Patent No. 7,980,457 B2 (“the ’457 patent”). The ’996 application is a continuation of U.S. Patent Application No. 09/475,534, which issued as U.S. Patent No. 7,356,498 B2 (“the ’498 patent”). The ’457 patent is the subject of CBM2013-00050 and IPR2014-00098. The ’498 patent is the subject of CBM2013-00049 and IPR2014-00097. Final Written Decisions also are entered in these cases concurrently with this Decision.

1:53–54. In such systems, market-makers are required to make a two-sided market by providing an order and offer quote. *Id*. at 1:54–56. In a non-automated open outcry system, a market-maker communicates verbally with traders indicating their willingness to buy and sell various quantities of securities. *Id*. at 1:56–59. Because a market-maker in such systems has personal control over the types and number of options traded, the market-maker can manage risk associated with his or her options portfolio. *Id*. at 1:59–61. A market-maker manages risk by modifying quotes for options to favor trades that tend to hedge against unwanted risk. *Id*. at 1:61–65.

The ’044 patent Specification states that an automated trading environment already was known in the art. *Id*. at 1:66, 2:1–8. An automated computer-based trading system typically records quotes and automatically matches them with orders that enter the system. *Id*. at 1:66–2:4. One disadvantage of known automated trading systems is that the systems execute trades so rapidly that a market-maker may be unable to withdraw or modify his quotes in a timely manner. *Id*. at 2:4–15.

Software tools that assess trading option portfolio risk and recommend quote modifications also were known. *Id*. at 2:16–21. An automated trading system, however, processes transactions in the order received. *Id*. at 2:26–28. Thus, even if a market-maker uses such software tools to modify quotes, those tools may be unable to act in time, given the speed at which the automated trading exchange system executes orders. *Id*. at 2:21–26. For example, an automated trading exchange may have a message queue containing additional orders that must be processed before the automated exchange receives and processes the market-maker’s quote modification request. *Id*. at 2:28–33. These known automated trading

exchange systems, therefore, limit a market-maker's ability to manage risk. *Id*. at 2:34–42. The '044 patent Specification recognizes the need for a method that automatically modifies quotes under certain trading conditions in an automated trading exchange system. *Id*. at 2:43–45.

The invention of the '044 patent is directed to systems for an automated trading exchange that modify quotes, where the system provides integrated quote risk monitoring and quote modification services. *Id*. at 2:49–51. Thus, one aspect of the invention is an apparatus that implements the method using a computer, having memory, a processor, and a communication port. *Id*. at 2:51–54.

The computer receives orders and quotes, wherein a quote has associated trading parameters, such as a risk threshold. *Id*. at 2:54–57. The computer then may generate a trade by matching the received orders and quotes to previously received orders and quotes. *Id*. at 2:64–66. If a trade is not generated, the computer stores each of the received orders and quotes. *Id*. at 2:66–67. The computer determines whether a market-maker's quote has been filled as a result of the generated trade, and, if so, determines a risk level and aggregate risk level associated with the trade. *Id*. at 2:67–3:4. The computer then compares the aggregate risk level with the market-maker's risk threshold for a quote; if the threshold is exceeded, the computer automatically modifies at least one of the market-maker's remaining quotes. *Id*. at 3:4–7.

B. Illustrative Claim

Of the challenged claims, claim 1 is the only independent claim. Claim 1 of the '044 patent, reproduced below, is illustrative of the challenged claims:

1. A system for processing trades of securitized instruments based on security orders and quotes received from client computers, comprising:

at least one server computer comprising a memory, and a processor, said server computer configured to perform the steps of:

receiving orders and quotes, wherein specified ones of said quotes belong to a quote group, and wherein said specified ones of said quotes have associated trading parameters comprising a predefined number of bought or sold contracts relating to said quote group;

generating a trade by matching said received orders and quotes to previously received orders and quotes;

storing each of said orders and quotes when a trade is not generated;

determining whether a quote having associated trading parameters has been filled as a result of the generated trade, and if so, determining a number of contracts that have been bought or sold within said quote group, including the generated trade;

comparing said number of contracts that have been bought or sold within said quote group with said predefined number of bought or sold contracts relating to said quote group; and,

automatically modifying at least one of the remaining specified ones of said quotes in the quote group if said predefined number of bought or sold contracts is exceeded.

II. ANALYSIS

A. Claim Construction

Consistent with the statute and the legislative history of the AIA,[2] the Patent Trial and Appeal Board ("Board") interprets claims of an unexpired patent using the broadest reasonable construction in light of the specification of the challenged patent. *See Office Patent Trial Practice Guide*, 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012); 37 C.F.R. § 42.300(b); *In re Cuozzo Speed Techs., LLC*, No. 2014-1301, 2015 WL 448667, at *5–8 (Fed. Cir. Feb. 4, 2015). There is a "'heavy presumption' that a claim term carries its ordinary and customary meaning." *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002) (internal citation omitted). In our Decision to Institute, we determined that our analysis did not require an express interpretation of any term. Dec. to Inst. 7–8. The parties do not contest that determination. *See, e.g.*, Tr. 61:6–17, 102:12–103:18. We likewise determine that, for purposes of this Final Written Decision, our analysis does not require us to provide an express interpretation for any claim term.

For purposes of this decision, and based on the record before us, we interpret the following claim language: "automatically modifying at least one of the remaining specified ones of said quotes in the quote group," as set forth in claim 1.

We must determine whether the claim limitation encompasses issuing a "new quote." Petitioner's proposed construction for this claim language does not touch upon the term "remaining." Pet. 13.

[2] Leahy-Smith America Invents Act, Pub. L. No. 112–29, 125 Stat. 284 (2011) ("AIA").

We are persuaded that the Specification differentiates between *modifying* a "remaining quote" and *issuing* a new quote when trades have occurred against previous quotes. Specifically, the '044 patent Specification states:

> The computer then compares the aggregate risk level with the market-maker's risk threshold, and if the threshold is exceeded, automatically *modifies at least one of the remaining quotes* in the quote group. The computer *may also* automatically *regenerate quotes*, *that is*, automatically *issue new quotes* when trades have occurred against previous quotes.

Ex. 1001, 3:4–9 (emphases added). Thus, based on this record, we are persuaded that the recited "automatically modifying at least one of the remaining specified ones of said quotes in the quote group" means "automatically cancelling or revising a price or quantity of at least one of the received specified quotes still available for execution."

B. Claims 1–3 of the '044 Patent are Unpatentable as Directed to Non-Statutory Subject Matter

Petitioner challenges claims 1–3 of the '044 patent under 35 U.S.C. § 101, as directed to patent-ineligible subject matter. Pet. 21–29. Patent Owner maintains that its claims are directed to patent-eligible processes because, for example, the claims include specific meaningful limitations that must be performed on specific hardware configured to perform numbers steps and sub-steps, electronic exchanges that incorporate the claimed features were an improvement over systems without them, the claimed steps cannot be performed manually, the claims are not directed to similar or substantially similar methods of managing risk market-makers previously

used, and the claims do not preempt hedging risk management techniques. PO Resp. 39–75.

1. 35 U.S.C. § 101 Patentability Analysis

Under 35 U.S.C. § 101, we must first identify whether an invention fits within one of the four statutorily provided categories of patent-eligibility: "processes, machines, manufactures, and compositions of matter." *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 713–714 (Fed. Cir. 2014). Here, each of the challenged claims recites a "machine," e.g., a system, under § 101.

Section 101 of the Patent Act defines subject matter eligibility, and the Supreme Court has "long held that this provision contains an important implicit exception: Laws of nature, natural phenomena, and abstract ideas are not patentable." *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S.Ct. 2347, 2354 (2014) (citing *Assoc. for Molecular Pathology v. Myriad Genetics, Inc.*, 133 S.Ct. 2107, 2116 (2013) (internal quotation marks and brackets omitted)). "The 'abstract ideas' category embodies the longstanding rule that '[a]n idea of itself is not patentable.'" *Alice Corp.*, 134 S.Ct. at 2355 (citing *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) (quotations omitted)).

In *Alice Corp.*, the Supreme Court emphasized the "*Mayo* framework," which provides "a framework for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts." *Id.* (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S.Ct. 1289, 1298 (2012)). Under the *Mayo* framework, "[w]e must first determine whether the claims at issue are directed to a patent-ineligible concept." *Id.* Next, "we consider the elements of each claim both individually and 'as an

ordered combination' to determine whether the additional elements 'transform the nature of the claim' into a patent-eligible application." *Id*. (citing *Mayo*, 132 S.Ct. at 1297–98). To be patentable, a claim must do more than simply state the law of nature or abstract idea and add the words "apply it." *Mayo*, 132 S.Ct. at 1294; *see Benson*, 409 U.S. at 67. Furthermore, "the mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention." *Alice Corp.*, 134 S.Ct. at 2358; *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1256 (Fed. Cir. 2014) ("And after *Alice*, there can remain no doubt: recitation of generic computer limitations does not make an otherwise ineligible claim patent-eligible.") (citation omitted). "Thus, if a patent's recitation of a computer amounts to a mere instruction to 'implemen[t]' an abstract idea 'on . . . a computer,' that addition cannot impart patent eligibility." *Alice Corp.*, 134 S.Ct. at 2358 (internal citation omitted).

A challenged claim must incorporate sufficient meaningful limitations to ensure that it claims more than just an abstract idea and is not merely a "'drafting effort designed to monopolize the [abstract idea].'" *Id*. at 2357 (quoting *Mayo*, 132 S.Ct. at 1297). "Simply appending conventional steps, specified at a high level of generality," is not "*enough*" for patent eligibility. *Id.* (quoting *Mayo*, 132 S.Ct. at 1292). Further, the "prohibition against patenting abstract ideas 'cannot be circumvented by attempting to limit the use of the formula to a particular technological environment' or adding 'insignificant postsolution activity.'" *Bilski v. Kappos*, 561 U.S. 593, 610–11 (2010) (quoting *Diamond v. Diehr*, 450 U.S. 175, 191–92 (1981)).

Thus, we analyze the claims to determine whether the claims embody a patent-eligible application of an abstract idea or are directed merely to nothing more than the abstract idea itself.

2. Claims 1–3 of the '044 Patent Are Unpatentably Abstract

In accordance with the Supreme Court's framework, we must first "determine whether the claims at issue are directed to" an abstract idea. *Alice Corp.*, 134 S.Ct. at 2355. The patents at issue in *Alice* claimed "a method of exchanging financial obligations between two parties using a third-party intermediary to mitigate settlement risk." *Id*. at 2356. Like the method of hedging risk in *Bilski*, 130 S.Ct. at 3240—which the Court deemed "a method of organizing human activity"—*Alice*'s "concept of intermediated settlement" was held to be "'a fundamental economic practice long prevalent in our system of commerce.'" *Alice Corp.*, 134 S.Ct. at 2356 (citations omitted). With respect to the first step of the "*Mayo* framework," the Supreme Court concluded in *Alice Corp.* that "there is no meaningful distinction between the concept of risk hedging in *Bilski* and the concept of intermediated settlement" in *Alice Corp.* and that "[b]oth are squarely within the realm of 'abstract ideas' as we have used that term." *Id*. at 2357.

Here, Petitioner argues that Patent Owner's claims are directed to the abstract concept of "managing trading risk — expressed in the claims as automatically modifying pending quotes so that market makers do not accumulate unacceptable amounts of risk," similar to the "hedging risk" claims in *Bilski*. Pet. 24; Pet. Reply 1, 3–4. Patent Owner does not dispute that the '044 patent claims are directed to an abstract idea. *See* PO Resp. 46 ("Patent Owner respectfully submits that the claims are not *merely* to an abstract idea, but rather provide a specific application of risk management

with many specific, meaningful limitations." (emphasis added)); Ex. 1001, 1:18–22. Similar to the concept of intermediated settlement in *Alice Corp.* and the concept of risk hedging in *Bilski*, we conclude that the concept of managing trading risk ("risk management") is an economic practice long prevalent in our system of commerce and squarely within the realm of abstract ideas. As the '044 patent itself explains, in the prior art "open outcry" exchanges, market-makers adjusted their trading strategies in order to manage their exposure, or risk, associated with their holdings by adjusting their quotes to favor trades that would tend to hedge away unwanted exposure. Ex. 1001, 1:53–65. Furthermore, the claims recite, for example, a server computer configured to perform the steps of "receiving orders and quotes," "generating a trade," "determining a number of contracts that have been bought or sold within said quote group, including the generated trade," "comparing said number of contracts that have been bought or sold within said quote group with said predefined number of bought or sold contracts relating to said quote group," and "automatically modifying" one of the remaining quotes if the predefined number of bought or sold contracts is exceeded (claim 1). Accordingly, we analyze the '044 patent claims to determine whether they incorporate sufficient meaningful limitations to ensure that the claims are more than just an abstract idea. *Mayo*, 132 S.Ct. at 1297.

3. Claims 1–3 of the '044 Patent Are Not Meaningfully Limited Under 35 U.S.C. § 101

Step two of the Supreme Court's "*Mayo* framework" requires that we consider the elements of the claim and determine whether there is "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 Corp.*, 134 S.Ct. at 2355 (quoting *Mayo*, 132 S.Ct. at 1294).

The relevant inquiry here is whether "additional substantive limitations . . . narrow, confine, or otherwise tie down the claim so that, in practical terms, it does not cover the full abstract idea itself." *Accenture Global Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1344–45 (Fed. Cir. 2013) (internal quotations and citation omitted). As we noted above, the Supreme Court in *Alice Corp.* cautioned that merely limiting the use of an abstract idea "to a particular technological environment" or implementing the abstract idea on a "wholly generic computer" is not sufficient as an additional feature to provide "practical assurance that the process is more than a drafting effort designed to monopolize the [abstract idea] itself." *Alice Corp.*, 134 S.Ct. at 2358 (citations omitted).

Patent Owner argues that the challenged independent claims "do not merely incorporate a general purpose computer to perform standard computing functions" (PO Resp. 59), but rather require "specific programming in the system computer" (*id*. at 49). Patent Owner contends "the challenged claims include meaningful limitations that narrow the claims to a specific implementation of risk management, executed on a new automated exchange trading system." *Id*. at 49. In support, Patent Owner refers extensively to the Declaration of Dr. Tuomas Sandholm. *See e.g.*, *id*. at 59–61, 67 (citing Ex. 2017). Petitioner disagrees and argues that the claims "do nothing but 'apply' an abstract idea of risk management using generic functions of a generic computer." Pet. Reply 9; *see CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1373 (Fed. Cir. 2011) (Section 101 does not embrace a process defined by using a computer to

perform a series of mental steps). We are persuaded by Petitioner's argument.

The challenged claims do not require any specialized hardware. As Petitioner contends, the challenged independent claims recite only common computer elements, e.g., "server computer" comprising a "memory" and "processor," recognized as generic computer technology by the Supreme Court in *Alice Corp.* Pet. Reply 2; *see Alice Corp.*, 134 S. Ct. at 2357; *Ultramercial*, 772 F.3d at 713, 722–23. The '044 patent Specification affirms that the claimed systems can be a general purpose computer with a generic programming and processing environment. For example, the '044 patent Specification states: "In accordance with a first aspect of the invention, an apparatus is implemented using at least one computer, having memory, a processor, and a communication port." Ex. 1001, 2:51–54. The Specification also makes clear that "[v]arious types of *general purpose* or specialized computer apparatus or computing device may be used with or perform operations in accordance with the teachings described herein." *Id*. at 17:18–20 (emphasis added). The '044 patent Specification likewise explains that "system 100 . . . includes a plurality of computers, which may be *one or more* work-stations, servers, mainframes, or other computer hardware platforms that provides sufficient resources to meet the desired trading volume and desired transaction-processing rate." *Id*. at 3:31–38 (emphasis added). Thus, the Specification indicates that the claimed systems for processing trades of securitized instruments can be built using a general purpose computer and that the complexity of the system depends only on the volume and rate of trading desired.

Furthermore, the Specification explains that the claimed systems can be implemented using known off-the-shelf computer hardware. For example, the Specification states that preferable servers are off-the-shelf "SUN Enterprise™" or "Starfire™" servers. *Id*. at 3:41–47; Tr. 37:15–17. Our review of the patent does not indicate that specialized computer hardware is necessary to implement the claimed systems, similar to the claims at issue in *Alice Corp*. *See Alice Corp*., 134 S.Ct. at 2360 (determining that the hardware recited in the claims was "purely functional and generic," and did not "offer[] a meaningful limitation beyond generally linking the use of the [method] to a particular technological environment, that is, implementation via computers") (citations and internal quotation marks omitted).

Patent Owner refers extensively to the declaration of its witness, Dr. Sandholm, in support of its position that the claimed systems require specialized and customized hardware and software. PO Resp. 59–64 (citing Ex. 2017 ¶¶ 25–36, 39). We do not find Dr. Sandholm's testimony persuasive, however, because it generally relates to commercial embodiments and is not supported by the '044 patent Specification. *See*, *e.g.*, Ex. 2017 ¶ 26. For example, Dr. Sandholm states that systems for processing trades of securitized instruments "include extremely large server networks with extensive processing capabilities" (Ex. 2017 ¶ 25), but the claims do not require any particular network size or extent of processing capability. Further, the '044 patent Specification explains otherwise. According to the Specification, the preferred embodiment of the invention "includes a plurality of computers, which may be *one or more* work-stations, servers, mainframes, or other computer hardware platforms that provide

sufficient resources to meet the desired trading volume and desired transaction-processing rate." Ex. 1001, 3:34–38 (emphasis added), 3:38–44.

Patent Owner also argues that, although the '044 patent Specification recognizes that generic hardware can provide the starting materials needed to create an automated exchange trading system, "the hardware is ultimately specifically programmed to implement the modules of the patent, such that they can perform the operations defined by the claims of the '044 patent." PO Resp. 77–78; PO First Supp. Resp. 2–3. The Supreme Court, however, has stated expressly that simply executing an abstract concept on a computer does not render a computer "specialized," nor does it automatically transform a patent-ineligible claim into a patent-eligible one. *See Alice Corp.*, 134 S.Ct. at 2358 ("[T]he mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention. . . . Given the ubiquity of computers, wholly generic computer implementation is not generally the sort of additional featur[e] that provides any practical assurance that the process is more than a drafting effort designed to monopolize the [abstract idea] itself.") (citations and quotation marks omitted); *Bancorp Servs., L.L.C. v. Sun Life Assurance Co.,* 687 F.3d 1266, 1280 (Fed. Cir. 2012). Consequently, we determine that the challenged claims' purported use of a generic computer, configured to perform the steps recited in the claims, does not confer patent eligibility, similar to the claims at issue in *Alice Corp*. *See Dealertrack, Inc. v. Huber*, 674 F.3d 1315, 1334 (Fed. Cir. 2012) ("In considering patent eligibility under § 101, one must focus on the claims.").

Patent Owner further argues that the challenged claims include many steps that define the relationship of the various limitations and how the

claimed functions are accomplished within the exchange trading system, demonstrating that those claims are directed to an application of an abstract idea. PO Resp. 46–48. Patent Owner emphasizes that the claims require the server computer to be configured to perform at least 14 specific steps and sub-steps. *Id*. at 48. Patent Owner notes, for example, that "claim 1 requires that the 'quotes have associated trading parameters comprising a predefined number of bought or sold contracts relating to said quote group.'" *Id*. at 49–50. Patent Owner contends that "[t]he addition of this new trading parameter, a risk threshold, which is associated with a market maker's quotes, was in no way routine or conventional." *Id*. at 50. We are not persuaded by Patent Owner's argument.

The claims contemplate using a generic computer to perform "'well-understood, routine, conventional activit[ies]' previously known to the industry." *Alice Corp.*, 134 S.Ct. at 2359 (quoting *Mayo*, 132 S.Ct. at 1294); *see Mayo*, 132 S.Ct. at 1300 ("simply appending conventional steps, specified at a high level of generality, to laws of nature, natural phenomena, and abstract ideas cannot make those laws, phenomena, and ideas patentable"). The '044 patent explains that, in the known open outcry method of trading, market-makers had personal control over the types and number of contracts traded, and could "adjust their trading strategies" as their positions changed. Ex. 1001, 1:53–61. Thus, they managed their exposure, or risk, associated with their holdings by "adjusting their quotes" to favor trades that would tend to hedge away unwanted exposure. *Id.* at 1:61–65. The '044 patent Specification also recognizes that software analysis tools were available in the prior art to evaluate the "risk associated with stock and option portfolios." *Id*. at 2:16–21. That it was well known to

manage trading risk is supported by the testimony of Dr. Maureen O'Hara, Petitioner's witness. Ex. 1004 ¶ 44 (stating that the steps which the server computer in claim 1 is configured to perform amount to "exactly the same method of managing risk that market makers have been performing manually for years prior to the December 1999 filing date of the '044 patent . . . selectively accounting for past trades (such as the volume of past trades) and current holdings and/or evaluating greek values"). Also, the claimed "predefined number of bought or sold contracts relating to said quote group" of claim 1 is recited at a high level of generality, and as Petitioner argues, emulates the personal tolerance level of a market-maker with respect to a type of risk. Pet. Reply 5, 7. Lastly, there is no dispute that the prior art included "automated and computer-based trading system[s]." Ex. 1001, 2:2–3. The claimed systems integrate an automated exchange trading system, already known in the art, with methods that mitigate the risks of a market-maker, also already known in the art. *See id*. at 2:49–51. In sum, the claims amount to nothing more than instructions to apply previously known methods of electronic trading and trade risk management using a generic computer to perform generic computer functions—calculating a risk and determining if that risk exceeds a threshold, and, if so, automatically modifying a quote. *See Alice Corp.*, 134 S.Ct. at 2359.

Moreover, we agree with Petitioner that the challenged claims are patent ineligible because the claims "do nothing more than automate an abstract and mental risk management technique used by market makers in open outcry exchanges for decades." Pet. Reply 4 (citing *Bancorp*, 687 F.3d at 1279 ("[u]sing a computer to accelerate an ineligible mental process does not make that process patent-eligible")). As discussed above, in the prior art

outcry options trading systems, market-makers determined and hedged their risks mentally. Ex. 1001, 1:52–65; Ex. 1004 ¶ 44; Ex. 1005, 244:24–245:20. We do not find persuasive Patent Owner's arguments that the claimed systems are limited to steps performed by the exchange trading system and cannot be performed manually because a human "cannot perform the functions of an exchange trading system." PO Resp. 73. Patent Owner's argument that a human cannot handle millions, or hundreds of millions, of orders and quotes each day misses the point. *See* Tr. 69:22–73:13. The claims are not limited to a certain quantity of trading, and the claimed invention's ability to handle a large amount of orders and quotes is the function of a generic computer. Also, reciting that the claimed steps be performed by the exchange trading system, a system that was indisputably known in the art and which the patent makes clear can be a generic computer system, does not confer patent eligibility. *See Mayo*, 132 S.Ct. at 1300 (simply appending conventional steps, specified at a high level of generality, to abstract ideas cannot make those ideas patent eligible).

Relying on the Supreme Court's decision in *Alice Corp.*, Patent Owner argues that the claimed invention is patent eligible because it effects an improvement in the technological area of automated exchange trading systems. *See, e.g.*, PO Resp. 54–64, 74–75 (arguing that challenged claims satisfy the "machine-or-transformation" test because the claims are directed to an improved trading system with risk management functionality); PO Second Supp. Resp. 1–2; Tr. 44:16–46:12, 47:20–23, 48:22–50:6, 55: 13–56:2, 60:25–61:2; *see Alice Corp.*, 134 S.Ct. at 2359 (distinguishing patent ineligible method claims at issue from claims that "effect an improvement in any other technology or technical field"). Patent Owner

contends that the claimed invention solves a new risk posed by electronic trading systems that was not present in prior art open outcry trading systems. *See* Tr. 105:15–16 (Petitioner agreeing that automated exchanges are a technical field). Patent Owner refers to the patent to explain the new risk posed by automated trading systems. PO Resp. 70–71.

The '044 patent Specification explains that with computerized trading systems and increased communication speeds, the speed and rapidity of trades may exceed the market-maker's ability to adapt his or her position, resulting in an unacceptable risk being assumed by a market-maker. Ex. 1001, 2:4–2:15. "That is, the trades may occur so rapidly that the market-maker is unable to withdraw or modify his quotes in a timely manner." *Id*. at 2:13–15; Tr. 58:23–25 (Patent Owner arguing that "when you say an automated trading system, it means something that allows for . . . automated, fast, fast trading"); Tr. 72:16–23 (Patent Owner stating that in an automated trading system, quotes can get satisfied "before the market maker even has the opportunity to know that it is going on," so the market-maker "doesn't have the chance to do any calculations"). Patent Owner further explains that, in an electronic exchange, market-makers must be proactive and maintain a large number of outstanding persistent quotes that are stored in the exchange's order book, which can be accessed by brokers for execution, without first communicating with the broker. PO Resp. 20 (citing Ex. 2016 ¶ 48). Thus, Patent Owner contends that an automated exchange trading system that incorporates the claimed risk management features is an "improvement over [exchange] trading systems without them." PO Resp. 54. We determine that the invention, even as characterized by Patent

Owner, does not fall within the scope of patent eligible subject matter as described by the Supreme Court.

The "new risk" described by Patent Owner is the result of automated trading. *See* Tr. 79:10–12. The claimed invention solves the problem by automating risk management, i.e., "automatically" modifying quotes. *See* PO Resp. 71–72 (Patent Owner emphasizes that the present invention automatically modifies quotes). Whereas in the open outcry system, the market-maker was aware of each trade and could make a decision about the trade, in the claimed invention, the computer is aware of each trade that takes place and makes the risk calculation based on those trades, automatically modifying quotes to protect the trader against a risk which did not exist in the open outcry system. Tr. 73:4–20; *see* PO Resp. 19 ("the role of market makers is now frequently performed by specially programmed computers that act as market makers"). The function of "automatically" modifying quotes, however, is the result of integrating risk calculation and quote modification into an automated trading exchange system. That integration allows the computer to make quote modifications at a faster pace. In other words, "it is the [automation of the abstract idea of risk management] that is integral to [the] claims at issue, not the computer machinery that may be used to accomplish it." *See Bancorp. Servs.*, 687 F.3d at 1279. As Petitioner argues, "[e]ven if [Patent Owner] came up with a wonderful new risk hedging technique, it is still an abstract concept." Tr. 23:22–24.

In further support of its position that the claims lack a meaningful limitation, Petitioner maintains that the claims preempt all practical uses of the abstract idea of the known risk management technique. Pet. Reply 3,

14–15; *see also* Pet. Second Supp. Reply 1–2 (contending that the recent *Ultramercial* decision makes it clear that Patent Owner's arguments regarding pre-emption "are not a substitute for the proper two-part test under *Alice*"). Patent Owner disagrees, maintaining instead that the challenged claims do not preempt the "entire field" of managing trading risk. PO Resp. 73–74. Specifically, Patent Owner argues that the claims cover only "specific applications of this idea," and do not present the risk of pre-empting the field of managing trading risk. *Id*. at 74. We are not persuaded by Patent Owner's argument.

The issue is whether the claims preempt the abstract idea of risk management that is claimed. The abstract idea of the challenged claims is not only risk management in general, but also the specific type of risk management claimed in each claim. Furthermore, limiting an abstract idea to a specific field of use or adding token post-solution activity does not make an abstract idea patentable. *Diehr*, 450 U.S. at 191–92; *Parker v. Flook*, 437 U.S. 584, 590 (1978) ("[t]he notion that post-solution activity, no matter how conventional or obvious in itself, can transform an unpatentable principle into a patentable process exalts form over substance"). Therefore, we determine that the limitations of the challenged claims do not meaningfully limit the claim beyond the claimed abstract idea of risk management, and, in practical terms, preempt the abstract idea of risk management.

With respect to dependent claims 2 and 3, Petitioner argues that they add nothing of significance to independent claim 1, which defines an abstract idea, and amount to nothing more than conventional and routine activity that does not make the claims patent eligible. Pet. 28. For example,

dependent claim 2 limits claim 1 by specifying that "the number of contracts that have been bought or sold comprises a total number of put contracts bought or sold," and claim 3 limits claim 1 by specifying that "the number of contracts that have been bought or sold comprises a total number of call contracts bought or sold." Patent Owner does not make separate arguments for the dependent claims. We agree with Petitioner that the dependent claims do not include meaningful limitations that make them patent eligible subject matter under *Alice*.

For the foregoing reasons, we conclude that Petitioner has demonstrated by a preponderance of the evidence that the challenged claims are directed to patent-ineligible subject matter under § 101.

C. 35 U.S.C. § 101 is a Condition of Unpatentability

Lastly, Patent Owner maintains that 35 U.S.C. § 101 is not a proper ground for covered business method patent review. PO Resp. 79. We addressed this issue in our Decision to Institute. Dec. to Inst. 14–16. We adhere to that determination.

The Supreme Court has recognized § 101 as a condition for patentability. *See, e.g.*, *Mayo*, 132 S.Ct. at 1305 (addressing invalidity under § 101 when it was raised as a defense to an infringement claim); *Graham v. John Deere Co.*, 383 U.S. 1, 12 (1966) (stating that the 1952 Patent Act "sets out the *conditions of patentability* in three sections" (emphasis added), citing 35 U.S.C. §§ 101, 102, and 103). The Federal Circuit also has recognized that § 101 *is* a condition for patentability that can be raised as an affirmative defense under 35 U.S.C. § 282(b)(2). For example, in *Dealertrack*, the majority rejected the dissent's contention that § 101 is not a "condition for patentability," stating that "the 'defenses provided in the statute,' § 282,

include not only the 'conditions of patentability' in §§ 102 and 103, but also those in § 101." 674 F.3d at 1330 n.3 (citing *Aristocrat Techs. Austl. PTY Ltd. v. Int'l Game Tech.*, 543 F.3d 657, 661 (Fed. Cir. 2008) ("It has long been understood that the Patent Act sets out the *conditions for patentability* in three sections: sections 101, 102, and 103.") (emphasis added) (citations omitted))). In addition, the Board's consideration of § 101 challenges in covered business method patent reviews also is consistent with the legislative history of the AIA. *See SAP Am., Inc. v. Versata Dev. Grp., Inc.*, Case CBM2012-00001, slip op. at 32–35 (PTAB Jan. 9, 2013) (Paper 36) (discussing the legislative history of the AIA as it relates to covered business method patent reviews covering § 101 challenges).

D. Contingent Motion to Amend Independent Claim 1is Denied

Because we determine that claims 1–3 are unpatentable, we turn to Patent Owner's contingent request to enter proposed substitute independent claims 4 as a replacement for original independent claim 1. Mot. 1–2. Proposed independent claim 4 is reproduced below with underlining to indicate additions relative to original claims 1:

> 4. A system for processing trades of securitized instruments based on security orders and quotes received from client computers, comprising:
>
> at least one server computer comprising a memory, [[and]] a processor<u>, and executable code maintained on said memory executable by said processor such that</u> said server computer <u>is</u> configured to perform the steps of:
>
> receiving<u>, from one or more client servers over a communication network</u>, orders and quotes, wherein specified ones of said quotes belong to a quote group, and wherein said specified ones of said quotes have associated trading parameters comprising a predefined

> number of bought or sold contracts relating to said quote group;
>
> generating a trade by matching said received orders and quotes to previously received orders and quotes;
>
> storing each of said orders and quotes when a trade is not generated;
>
> determining whether a quote having associated trading parameters has been filled as a result of the generated trade, and if so, determining a number of contracts that have been bought or sold within said quote group, including the generated trade;
>
> comparing said number of contracts that have been bought or sold within said quote group with said predefined number of bought or sold contracts relating to said quote group; and,
>
> automatically modifying at least one of the remaining specified ones of said quotes in the quote group if said predefined number of bought or sold contracts is exceeded.

Id.

A covered business method patent review is not a patent examination proceeding or a patent reexamination proceeding. A proposed substitute claim, in a motion to amend, is not entered automatically and then examined. If a patent owner's motion to amend is granted, the claim will be added directly to the patent, *without examination*. Therefore, we enter proposed amended claims only upon a showing by the patent owner that the amended claims are patentable. *See Idle Free Sys., Inc. v. Bergstrom, Inc.*, Case IPR2012-00027, slip op. at 33 (PTAB Jan. 7, 2014) (Paper 66); *Volusion, Inc. v. Versata Software, Inc.*, Case CBM2013-00017, slip op. at 2–3 (PTAB Dec. 30, 2013) (Paper 19) (*Idle Free's* guidance relating to IPRs applies to CBMs).

Patent Owner as movant bears the burden to demonstrate patentability and compliance with 37 C.F.R. § 42.221. Patent Owner contends that the proposed substitute claim is supported by the disclosure in the '534 application (Ex. 2023), a parent application of the '289 application, that issued as the '044 patent. Mot. 2–7. Patent Owner states that the proposed substitute claims address the sole ground upon which trial was instituted, patent subject matter eligibility under § 101. *Id*. In support of its argument, Patent Owner essentially makes the same arguments it made with respect to the original claims of the '044 patent. *Id*. at 7–9; PO Reply 1–4. For example, Patent Owner argues that proposed system claim 4 is "directed to a specific computer system instead [of] a general purpose computer" (PO Reply 1), "limited to a specific application of performing risk management" (*id*. at 3), and "directed to an inventive concept of exchange side risk analysis" (*id*.). Patent Owner characterizes proposed independent claim 4 as reciting "a system for processing trades that includes at least one server computer comprising a memory, a processor, and executable code maintained on the memory." Mot. 8. Thus, Patent Owner maintains that the proposed claim "does not merely use a generic computer to perform or accelerate a mental process." *Id*. at 9. Petitioner opposes the Motion to Amend arguing that the claims do not recite patent eligible subject matter for essentially the same reasons raised with respect to the original claims. Opp. 1–12. We agree and determine that Patent Owner has not satisfied its burden of demonstrating that the proposed substitute claims are patentable under § 101.

As explained above, the addition of a limitation regarding generic computer devices does not limit the claims sufficiently or add concrete ties

to make the claims less abstract. *See Alice*, 134 S.Ct. at 2358–59; *Accenture Global Servs.*, 728 F.3d at 1344–45. The limitations requiring "executable code maintained on said memory executable by said processor," so that the server computer is configured to perform the steps of receiving orders and quotes "from one or more client servers over a communication network" are generic and conventional for the same reasons discussed above with respect to the original claims. In sum, Patent Owner's proposed amendments are not specific and do not tie the claim to a concrete apparatus or method; rather, the added limitations are generic and insufficient to confer patent eligibility, similar to the claims at issue in *Alice* (which recited a "data storage unit" and "computer," for example), *CLS Bank Int'l v. Alice Corp. Pty. Ltd.*, 717 F.3d 1269, 1289 (Fed. Cir. 2013), and those at issue in *Accenture Global Servs.* (which recited a "database," "client component," "server component," and "automated method," for example), 728 F.3d at 1344–45. Thus, Patent Owner has not shown patentability under 35 U.S.C. § 101. Given that Patent Owner has not established patent eligibility of the claimed subject matter, we do not address whether the proposed substitute claim is patentable over the prior art. *See* Mot. 9–15.

For the foregoing reasons, Patent Owner has not met its burden of showing the patent eligibility of proposed substitute claim 4.

Accordingly, the contingent Motion to Amend is *denied*.

III. CONCLUSION

This is a Final Written Decision of the Board under 35 U.S.C. § 328(a). We hold Patent Owner's claims 1–3 of the '044 patent to be unpatentable under 35 U.S.C. § 101. Specifically, the claims recite unpatentable abstract ideas, and the claims do not provide sufficient

meaningful limitations to transform these abstract ideas into patent-eligible applications of these abstractions.

ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–3 of the ’044 patent are cancelled;

FURTHER ORDERED that Patent Owner’s contingent Motion to Amend is *denied*; and

FURTHER ORDERED that, because this is a final written decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

CBM2013-00051
Patent 8,266,044 B2

PETITIONER:

Michael M. Murray
mmurray@winston.com

Bryan DeMatteo
bdematteo@winston.com

Michael Scheer
mscheer@winston.com

PATENT OWNER:

Joseph A. Hynds
jhynds@rfem.com

Steven Lieberman
cboeipr@rfem.com

Jason M. Shapiro
jshapiro@rfem.com