

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 IPR2014-00097
Patent 7,356,498 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. § 318(a) and 37 C.F.R. § 42.73

I. BACKGROUND

Petitioner, International Securities Exchange, LLC, filed a Petition (Paper 1, “Pet.”) requesting *inter partes* review of claims 1–28 of U.S. Patent No. 7,356,498 B2 (Ex. 1001; “the ’498 patent”). Patent Owner, Chicago Board Options Exchange, Inc., filed a Preliminary Response opposing institution of review (Paper 9; “Prelim. Resp.”). On May 22, 2014, we instituted an *inter partes* review of claims 1, 8, 9, 11, 14, 15, and 23 of the ’498 patent (Paper 12; “Dec. on Inst.”).

Subsequent to institution, Patent Owner filed a Patent Owner Response (Paper 26; “PO Resp.”), and Petitioner filed a Reply (Paper 31; “Pet. Reply”).

We held an oral hearing on January 21, 2014, and a transcript of the hearing is included in the record (Paper 38; “Tr.”).

We have jurisdiction under 35 U.S.C. § 6(c). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

For the reasons that follow, we determine that Petitioner has not shown by a preponderance of the evidence that claims 1, 8, 9, 11, 14, 15, and 23 of the ’498 patent are unpatentable based on the instituted grounds in this *inter partes* review.

A. The ’498 Patent

The ’498 patent, titled “Automated Trading Exchange System Having Integrated Quote Risk Monitoring and Integrated Quote Modification Services,” issued on April 8, 2008, based on U.S. Patent Application No. 09/475,534 (“the ’534 application”),¹ filed on December 30, 1999.

¹ U.S. Patent Application No. 12/035,996 is a continuation of the ’534 application, and issued as U.S. Patent No. 7,980,457 B2 (“the ’457 patent”). U.S. Patent Application No. 13/178,289 (“the ’289 application”) is a continuation of the ’996 application and issued as U.S. Patent No. 8,266,044 B2 (“the ’044 patent”). The ’498 patent is the subject of CBM2013-00049. The ’457 patent is also the subject of CBM2013-00050 and IPR2014-00098. The ’044 patent is the subject of

The '498 patent relates to automated trading systems for option contracts (“options”). Ex. 1001, 1:8–12, Abstract. Specifically, the claimed invention is directed to methods for managing the risk of a maker of an options market in an automated trading system. *Id.* at 1:8–12.

Options are traded publicly on exchanges. *Id.* at 1:17. Each option covers certain rights to buy or sell an underlying security at a fixed price for a specified period of time. *Id.* at 1:18–21. 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 1:27–29. 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 1:30–34. Thus, writing options may entail large risks to the market-maker. *Id.* at 1:34–35.

Many option trading systems utilize an “open outcry” method. *Id.* at 1:43–44. In such systems, market-makers are required to make a two-sided market by providing an order and an offer quote. *Id.* at 1:44–46. 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 1:46–49. 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 1:49–53. A market-maker manages risk by adjusting quotes for options to favor trades that tend to hedge against unwanted risk. *Id.* at 1:52–55.

The '498 patent Specification states that an automated trading environment

CBM2013-00051. Final Written Decisions also are entered in these cases concurrently with this Decision.

already was known in the art. *Id.* at 1:56–58, 61–65. An automated, computer-based trading system typically records quotes and automatically matches them with orders that enter the system. *Id.* at 1:58–61. 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 1:61–2:5. Software tools that assess trading option portfolio risk and recommend quote modifications also were known. *Id.* at 2:6–12. An automated trading system, however, processes transactions in the order received. *Id.* at 2:16–19. 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 2:12–16. 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 2:19–23. These known, automated trading exchange systems, therefore, limit a market-maker’s ability to manage risk. *Id.* at 2:24–32. The ’498 patent Specification recognizes the need for a method that automatically modifies quotes under certain trading conditions in an automated trading exchange system. *Id.* at 2:33–35.

The invention of the ’498 patent is directed to methods for modifying quotes in an automated exchange trading system, where the system provides integrated quote risk monitoring and quote modification services. *Id.* at 2:39–41. 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 2:41–44.

The computer receives orders and quotes, wherein a quote has associated trading parameters, such as a risk threshold. *Id.* at 2:44–47. The computer then may generate a trade by matching the received orders and quotes to previously

received orders and quotes. *Id.* at 2:54–56. If a trade is not generated, the computer stores each of the received orders and quotes. *Id.* at 2:56–57. 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 2:57–61. 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 2:61–64.

B. Illustrative Claim

Of the challenged claims, claims 1 and 8 are independent claims. Claim 1 of the ’498 patent, reproduced below, is illustrative of the challenged claims.

1. A method of modifying quotes in an automated exchange trading system comprising 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 risk threshold;
 - 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 risk level and an aggregate risk level associated with said trade;
 - comparing said aggregate risk level with said risk threshold; and,
 - automatically modifying at least one of the remaining said specified ones of said quotes in the quote group if said threshold is exceeded.

C. Prior Art

The pending grounds of unpatentability in this *inter partes* review are based on the following prior art.

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