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Paper No. 138
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

IBG LLC,
INTERACTIVE BROKERS LLC, TRADESTATION GROUP, INC.
TRADESTATION SECURITIES, INC.,
TRADESTATION TECHNOLOGIES, INC., and IBFX, INC.,
Petitioner,

v.

TRADING TECHNOLOGIES INTERNATIONAL, INC.,
Patent Owner.

Case CBM2015-00181
Patent No. 7,676,411 B2

Before SALLY C. MEDLEY, MEREDITH C. PETRAVICK, and JEREMY M. PLENZLER, *Administrative Patent Judges*.

Opinion for the Board filed by PETRAVICK, *Administrative Patent Judge*.

Opinion dissenting-in-part filed by PLENZLER, *Administrative Patent Judge*.

PETRAVICK, *Administrative Patent Judge.*

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

INTRODUCTION

A. Background

IBG LLC, Interactive Brokers LLC, TradeStation Group, Inc., TradeStation Securities, Inc., TradeStation Technologies, Inc., and IBFX, Inc. (collectively, "Petitioner") filed a Petition requesting covered business method patent review of claims 1–28 (the "challenged claims") of U.S. Patent No. 7,676,411 B2 (Ex. 1001, "the '411 patent"). Paper 7 ("Pet."). Trading Technologies International, Inc. ("Patent Owner") filed a Preliminary Response. Paper 22 ("Prelim. Resp."). On March 7, 2016, we instituted a covered business method patent review (Paper 26, "Institution Decision" or "Inst. Dec.") based upon Petitioner's assertion that claims 1–28 are directed to patent ineligible subject matter under 35 U.S.C. § 101 and that those claims are unpatentable under 35 U.S.C. § 103. Inst. Dec. 35. Subsequent to institution, Patent Owner filed a Patent Owner Response (Paper 71, "PO Resp.") and Petitioner filed a Reply (Paper 105, "Pet. Reply") to Patent Owner's Response.

We held a joint hearing of this case and several other related cases on October 19, 2016. Paper 131 ("Tr.").

After oral hearing, the Federal Circuit issued a decision, *Trading Technologies Int'l, Inc.*, v. *CQG, Inc.*, No. 2016-1616, 2017 WL 192716 (Fed. Cir. Jan. 18, 2017), determining that the claims of U.S. Patent Nos. 6,766,304 ("the '304 patent") and 6,772,132 ("the '132 patent") are directed to patent-eligible subject matter under § 101.[1] Petitioner and Patent Owner,

[1] By virtue of a number of continuation filings, the '411 patent is ultimately a continuation of the application resulting in the '132 patent (Application No. 09/590,692). The '304 patent resulted from a divisional filing of that application.

with authorization (Paper 134), each filed supplemental briefing addressing the impact of that decision on this proceeding. Paper 137 ("Pet. Br."); Paper 135 ("PO Br.").

We have jurisdiction under 35 U.S.C. § 6. 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 1–28 of the '411 patent are patent ineligible under 35 U.S.C. § 101 and unpatentable under 35 U.S.C. § 103.

B. Related Proceedings

The parties indicate that the '411 patent is the subject of numerous related U.S. district court proceedings, as well as the Federal Circuit Decision noted above. Pet. 2; Paper 11, 2–6; Paper 133, 1.

The '411 patent was the subject of a petition for covered business method patent review in *TD Ameritrade Holding Corp. v. Trading Technologies Int'l, Inc.*, CBM2014-00133 (PTAB), for which trial was instituted, but later terminated.

Numerous patents are related to the '411 patent and the related patents are or were the subject of numerous petitions for covered business method patent review and reexamination proceedings.

C. Asserted Grounds

Trial was instituted based on the following grounds.

References	**Basis**	**Claims Challenged**
N/A	§ 101	1–28

References	Basis	Claims Challenged
TSE,[2] Belden,[3] and Togher[4]	§ 103	1–28

Petitioner provides testimony from David Rho (Ex. 1023; "the Rho Declaration) and Kendyl A. Román (Ex. 1019; "the Román Declaration") to support its challenges. Patent Owner provides testimony from Eric Gould-Bear (Ex. 2168; "the Gould-Bear Declaration") and Christopher H. Thomas (Ex. 2169; "the Thomas Declaration").

D. The '411 Patent

The '411 patent is titled "Click Based Trading with Intuitive Grid Display of Market Depth." Ex. 1001, [54]. The invention of the '411 patent "is directed to the electronic trading of commodities." *Id.* at 1:21–22. The invention of the '411 patent is a graphical user interface ("GUI"), named the Mercury display, and a method of using the Mercury display to trade a commodity. *Id*. at Abstract, 3:9–10.

1. Conventional GUI

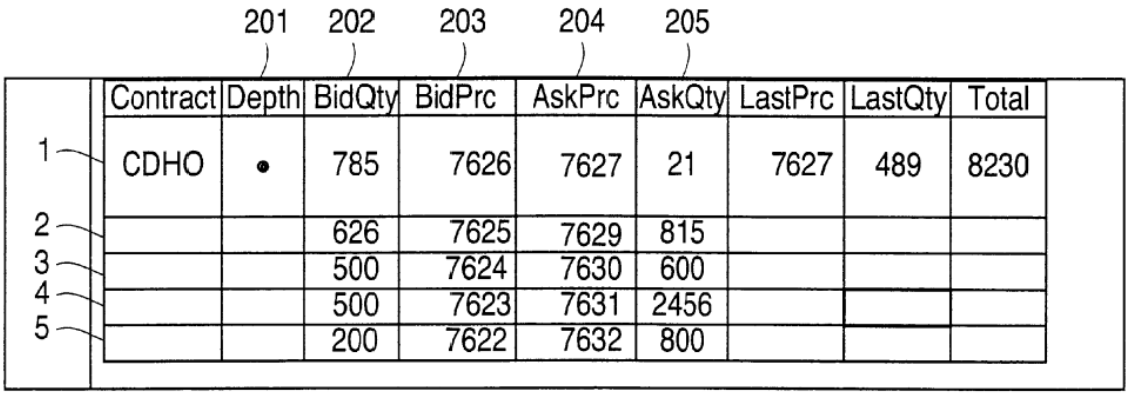
Before beginning our analysis of the claims for patent-eligibility, a discussion of conventional methods of trading is helpful. Figure 2 of the '411 patent depicts a GUI. Ex. 1001, Fig. 2 ("the Fig. 2 GUI"). According to Patent Owner, the Fig. 2 GUI illustrates the "widely accepted conventional wisdom regarding" electronic trading. PO Resp. 1; *see also*

[2] Tokyo Stock Exchange Operation System Division, Futures/Option Purchasing System Trading Terminal Operation Guide (1998) (Ex. 1006). Citations to this reference refer to its English translation (Ex. 1007).
[3] PCT Pub. No. WO 90/11571, pub. Oct. 4, 1990 (Ex. 1009, "Belden"). The page numbers referenced herein are those at the bottom of each page.
[4] U.S. Pat. No. 5,375,055, iss. Dec. 20, 1994 (Ex. 1005, "Togher").

PO Resp. 28 (describing Fig. 2 GUI as "ubiquitous at the time" of the invention of the '411 patent).

Figure 2 of the '411 patent is reproduced below.

FIG. 2



The Fig. 2 GUI displays market information in columns. *See id.* at 5:20–27, 6:1–2. BidQty column 202 displays bid quantity, and BidPrc column 203 displays corresponding bid price levels. AskQty column 205 displays ask quantities, and AskPrc column 204 displays corresponding ask price levels. *Id.* at 5:20–27 and 6:3–11. The inside market (i.e., the best (highest) bid price and quantity and the best (lowest) ask price and quantity) is displayed in row one. *Id.* at 5:18–20. Rows 2–5 display the market depth, a list of next-best bids and asks. *Id.* at 5:20–24.

Prices and quantities change dynamically based on real time information from the market. *Id.* at 5:27–29. The inside market, however, is always displayed in row 1, a fixed location. PO Resp. 2. Christopher H. Thomas testifies that other prior art GUIs, which are similar to the Fig. 2 GUI, "displayed the locations for the best bid and ask prices such that the prices were displayed vertically (*e.g.*, with the location for the best ask price being displayed above the location for the best bid price)." Ex. 2169 ¶ 60;

see also Ex. 1007, 107 (depicting a trading screen having a central order price column and corresponding ask and bid quantities in adjacent columns).

In the Fig. 2 GUI, "the user could place an order by clicking on a location (e.g., a cell) in one of the price or quantity columns." Ex. 2169 ¶ 56; *see* Ex. 1028, 7–8. According to Patent Owner,

> these types of tools permitted "single action" order entry that consisted of a trader presetting a default quantity and then clicking on a cell in the screen . . . to cause a trade order message to be sent to the exchange at the preset quantity and at the price value associated with that cell.

Ex. 1028, 8.

Other types of conventional trading GUIs used order entry tickets to send trade orders to an electronic exchange. PO Resp. 1. An order entry ticket is "in the form of a window, with areas in which the trader could fill out parameters for an order, such as the price, quantity, an identification of the item being traded, buy or sell, etc." Ex. 2169 ¶ 48; *see also* Ex. 1001, 2:42–55 (describing a trader manually entering trade order parameters).

2. Mercury Display

The Mercury display is depicted in Figure 3, which is reproduced below.

FIG. 3

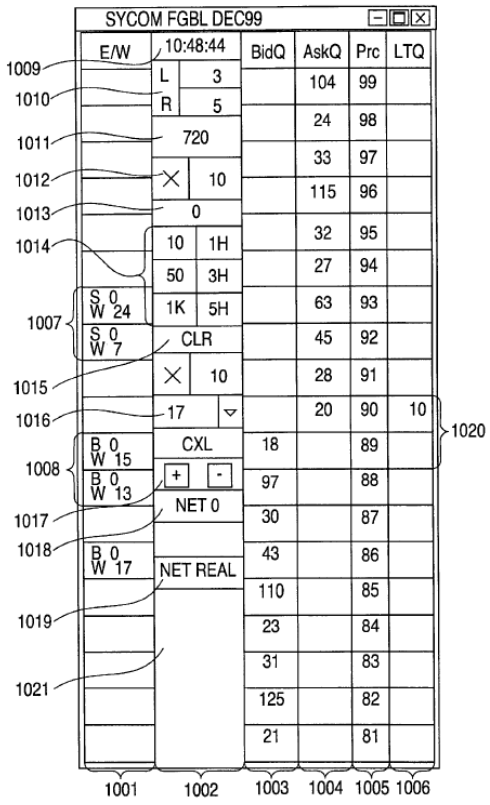


Figure 3 of the ’411 patent illustrates an example of the Mercury display with example values for trading a commodity including prices, bid and ask quantities relative to price, and trade quantities.

The Mercury display is like the Fig. 2 GUI in that both display market information in columns. Column 1005 is a price axis, which includes a plurality of price values for the commodity. *See* Ex. 1001, 7:55–66. The ’411 patent explains that “[t]he column does not list the whole prices (e.g. 95.89), but rather, just the last two digits (e.g. 89).” *Id.* at 7:57–58. Columns 1003 and 1004 are aligned with the price axis and dynamically

display bid and ask quantities, respectively, for the corresponding price values of the static price axis. *See id.* at 7:54–8:16. The '411 patent explains that "[t]he exchange sends the price, order and fill information to each trader on the exchange" and that "[t]he physical mapping of such information to a screen grid can be done by any technique known to those skilled in the art." *Id.* at 4:63–5:3.

Unlike the prior art Fig. 2 GUI, the values in the price column of the Mercury Display "are static; that is, they do not normally change positions unless a re-centering command is received." *Id.* at 7:64–66. The bid quantities and ask quantities move up and down as the market changes, and, thus, the location of the inside market moves up and down. *See id.* at 7:66–8:16.

Similar to the prior art Fig. 2 GUI, a trader executes trades using the Mercury display by first setting the desired commodity and default parameters, such as default quantity. *Id.* at 9:35–49 and Fig. 6, step 1302. Column 1002 contains various parameters and information used to execute trades, such as the default quantity displayed in cell 1016. *See id*. at 8:35–9:3. A trader executes trades using the Mercury display by first setting the desired commodity and default parameters, such as default quantity. *See id*. at 9:35–49; Fig. 6, step 1302. Then, a trader can send a buy order or sell order to the market with a single action, such as clicking on the appropriate cell in column 1003 or 1004. *See id.* at 9:35–10:32; Fig. 6, steps 1306–1315. For example, a left click on "20" in column 1004, shown in Figure 3, will send an order to the market to buy 17 lots (i.e., the default quantity set in cell 1016 of column 1002) at a price of 90. *See id.* at 10:30–32.

E. Illustrative Claim

As noted above, Petitioner challenges claims 1–28. Claims 1 and 26 are independent. Claim 1 is illustrative of the claimed subject matter and is reproduced below:

> 1. A method of displaying market information relating to and facilitating trading of a commodity being traded on an electronic exchange, the method comprising:
>
> receiving, by a computing device, market information for a commodity from an electronic exchange, the market information comprising an inside market with a current highest bid price and a current lowest ask price;
>
> displaying, via the computing device, a bid display region comprising a plurality of graphical locations, each graphical location in the bid display region corresponding to a different price level of a plurality of price levels along a price axis;
>
> displaying, via the computing device, an ask display region comprising a plurality of graphical locations, each graphical location in the ask display region corresponding to a different price level of the plurality of price levels along the price axis;
>
> dynamically displaying, via the computing device, a first indicator representing quantity associated with at least one trade order to buy the commodity at the current highest bid price in a first graphical location of the plurality of graphical locations in the bid display region, the first graphical location in the bid display region corresponding to a price level associated with the current highest bid price;
>
> upon receipt of market information comprising a new highest bid price, moving the first indicator relative to the price axis to a second graphical location of the plurality of graphical locations in the bid display region, the second graphical location corresponding to a price level of the plurality of price levels associated with the new highest bid price, wherein the second graphical location is different from the first graphical location in the bid display region;

dynamically displaying, via the computing device, a second indicator representing quantity associated with at least one trade order to sell the commodity at the current lowest ask price in a first graphical location of the plurality of graphical locations in the ask display region, the first graphical location in the ask display region corresponding to a price level associated with the current lowest ask price;

upon receipt of market information comprising a new lowest ask price, moving the second indicator relative to the price axis to a second graphical location of the plurality of graphical locations in the ask display region, the second graphical location corresponding to a price level of the plurality of price levels associated with the new lowest ask price, Wherein the second graphical location is different from the first graphical location in the ask display region;

displaying, via the computing device, an order entry region comprising a plurality of graphical areas for receiving single action commands to set trade order prices and send trade orders, each graphical area corresponding to a different price level along the price axis; and

selecting a particular graphical area in the order entry region through a single action of a user input device to both set a price for a trade order and send the trade order having a default quantity to the electronic exchange.

Ex. 1001, 12:23–13:16.

ANALYSIS

A. The Level of Ordinary Skill in the Art

Notwithstanding the parties' submissions of the level of ordinary skill in the art,[5] we find that the level of ordinary skill in the art is reflected by the

[5] The parties' submissions focus primarily on the degrees, occupations, and experience, as opposed to what the hypothetical person of ordinary skill in the art would have known at the time of the invention. As such, and as the

prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

B. Claim Construction

In a covered business method patent review, claim terms are given their broadest reasonable interpretation in light of the specification in which they appear and the understanding of others skilled in the relevant art. *See* 37 C.F.R. § 42.300(b); *see Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144 (2016) (concluding the broadest reasonable construction "regulation represents a reasonable exercise of the rulemaking authority that Congress delegated to the Patent Office").

Applying that standard, we interpret the claim terms of the '411 patent according to their ordinary and customary meaning in the context of the patent's written description. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Any special definitions for claim terms must be set forth with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). Petitioner and Patent Owner propose constructions for several claim limitations. Pet. 13–14; PO Resp. 26–28; Pet. Reply 9. For purposes of this Decision, we determine that no particular term requires explicit construction.

C. Covered Business Method Patent

Section 18 of the AIA[6] provides for the creation of a transitional program for reviewing covered business method patents. A "covered

triers of fact, based on the record before us, we do not find such information particularly helpful.

[6] Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284, 329 (2011) ("AIA").

business method patent" is a patent that "claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service, except that the term does not include patents for technological inventions." AIA § 18(d)(1); *see* 37 C.F.R. § 42.301(a). A patent need have only one claim directed to a covered business method to be eligible for review. *See* Transitional Program for Covered Business Method Patents—Definitions of Covered Business Method Patent and Technological Invention, 77 Fed. Reg. 48,734, 48,736 (Aug. 14, 2012) ("CBM Rules") (Response to Comment 8).

In its Petition, Petitioner contends that "while a patent needs only one claim directed to a CBM to be eligible for CBM review, all the claims qualify," and particularly cites claims 1, 7, 8, and 10. Pet. 4.

1. Data Processing or Other Operations used in a Financial Product or Service

Petitioner asserts that claim 1 is directed to a covered business method because it recites activities that are financial in nature, including displaying market information and sending a trade order. *Id.* Based on this record, we agree with Petitioner that at least the subject matter recited by claim 1 is directed to activities that are financial in nature, namely displaying market information, including indicators of asks and bids in the market, setting trade order parameters, and sending a trade order to an electronic exchange.

Patent Owner does not dispute that the claims are directed to a method used in the practice, administration, or management of a financial product or service and, instead, contends that the claims are not directed to "data processing" or "other operations" of the financial product or service. *See* PO Resp. 22. First, Patent Owner argues that "data processing" should be interpreted according to the definition of "data processing" found in the

glossary for class 705 of the United States Patent Classification System, which is "[a] systematic operation on data in accordance with a set of rules which results in a significant change in the data." *Id.* at 22–23 (quoting Ex. 2121, 4). Patent Owner argues that the claims of the '411 patent are not directed to data processing under this definition because the claims are concerned with displaying information in a specific manner and not concerned with processing the information that is displayed. PO Resp. 22–23. According to Patent Owner, "the claimed invention is agnostic to what specific algorithm is used for processing or mapping the data." *Id.* at 23 (citing Ex. 1001, 4:64–5:4).

Patent Owner's contentions are unpersuasive. Patent Owner does not sufficiently explain why the definition of "data processing" found in the glossary for class 705 of the United States Patent Classification System is controlling, as opposed to the plain meaning of "data processing." *See* Pet. Reply 31. In any event, claim 1 encompasses processing financial data associated with a commodity for displaying and processing financial data for sending a trade order for a commodity to an exchange. The '411 patent explicitly discloses that market information that is received from an electronic exchange is processed to map it to the screen. *See* Ex. 1001, 4:64–5:1 ("The present invention processes this information and maps it . . . to a screen."); 11:36–38 ("referring to [t]he process for placing trade orders using the Mercury display"). This processing of financial data is used in the practice, administration, or management of a commodity, which is a financial product, and in the practice, administration, or management of electronic trading with an exchange, which is a financial service or activity.

Even if there is some disagreement as to whether claim 1 includes "data processing," there appears to be no disagreement that the steps of claim 1 (displaying market information, setting trade order parameters, and sending a trade order to the electronic exchange) are operations used in the practice, administration, or management of a commodity or trading a commodity on an electronic exchange. *See* PO Resp. 22–23 (discussing only whether the '411 patent claims "data processing"). The '411 patent, thus, at least claims "other operations used in the practice, administration, or management of a financial product or service" (AIA § 18(d)(1)).

For the reasons stated above, and based on the particular facts of this proceeding, we conclude that the '411 patent "claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service" and meets that requirement of § 18(d)(1) of the AIA.

2. Exclusion for Technological Inventions

To determine whether a patent is for a technological invention, we consider "whether the claimed subject matter as a whole recites [(1)] a technological feature that is novel and unobvious over the prior art; and [(2)] solves a technical problem using a technical solution." 37 C.F.R. § 42.301(b). Both prongs must be satisfied in order for the patent to be excluded as a technological invention. *See Versata dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1326–27 (Fed. Cir. 2015), *Apple Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1240 (Fed. Cir. 2016) (not addressing arguments regarding whether the first prong was met when it was determine that the second prong—that the claimed subject matter as a whole does not solve a technical problem using a technical solution—was met).

The following claim drafting techniques, for example, typically do not render a patent a "technological invention":

> (a) Mere recitation of known technologies, such as computer hardware, communication or computer networks, software, memory, computer-readable storage medium, scanners, display devices or databases, or specialized machines, such as an ATM or point of sale device.
>
> (b) Reciting the use of known prior art technology to accomplish a process or method, even if that process or method is novel and non-obvious.
>
> (c) Combining prior art structures to achieve the normal, expected, or predictable result of that combination.

Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,763–64 (Aug. 14, 2012).

With respect to the first prong, Petitioner contends that rather than reciting a technical feature that is novel or unobvious over the prior art, the claims of the '411 patent generally recite trading software that is implemented on a conventional computer. Pet. 5–7. Patent Owner focuses on whether the claims "solve[] a technical problem using a technical solution." PO Resp. 23–26. When addressing "whether the claimed subject matter as a whole recites a technological feature that is novel and unobvious over the prior art," Patent Owner simply alleges that "Petitioners fail to address whether the claims recite a technical feature that is novel and unobvious." PO Resp. 23. That is incorrect. That was specifically noted in our Institution Decision. Inst. Dec. 14–15.

We are persuaded by Petitioner's contentions that at least claim 1 of the '411 patent does not recite a novel and non-obvious technological feature. The specification of the '411 patent treats as well-known all potentially technological aspects of the claims. For example, the '411 patent

discloses that its system can be implemented "on any existing or future terminal or device" (Ex. 1001, 4:8–11), each of which is known to include a display, and discloses that the input device can be a mouse (*id.* at 4:12–15), which is a known input device. The '411 patent further discloses that "[t]he scope of the present invention is not limited by the type of terminal or device used." *Id.* at 4:11–12. The '411 patent also explains that the programming associated with the GUI is insignificant. *See, e.g.*, Ex. 1001, 4:63–5:4 (explaining that the "present invention processes [price, order, and fill] information and maps it through simple algorithms and mapping tables to positions in a theoretical grid program" and "[t]he physical mapping of such information to a screen grid can be done by any technique known to those skilled in the art"). That at least claim 1 of the '411 patent does not recite a novel and non-obvious technological feature is further illustrated below in our discussion of that claim being unpatentable under § 103. Accordingly, we are persuaded that at least claim 1 does not recite a technological feature that is novel and unobvious over the prior art.

With respect to the second prong, Petitioner contends that the claims of the '411 patent do not fall within § 18(d)(1)'s exclusion for "technological inventions" because the '411 patent does not solve a technical problem using a technical solution. Pet. 7–9. Petitioner notes that "[a]ccording to the '411 patent, the 'problem' with prior art trading GUIs was that the market price could change before a trader entered a desired order, causing the trader to 'miss his price.'" *Id.* at 8 (citing Ex. 1001, 2:59–67). Petitioner contends that "the '411 patent's solution is not technical" because it simply "rearrange[d] how known and available market data is displayed on a GUI." *Id.*

Patent Owner argues that the '411 patent solves a technical problem using a technical solution. According to Patent Owner, the '411 patent solves the problem of "the price value associated with the order entry *location being selected* changes, which results in placing an order at an unintended price—a data-entry problem." PO Resp. 24 (citing Ex. 1001, 2:60–67; Ex. 2180, 6).

The '411 patent describes the problem it solves as follows:

> [A]pproximately 80% [of the total time it takes to place an order] is attributable to the time required for the trader to read the prices displayed and to enter a trade order. The present invention provides a significant advantage during the slowest portion of the trading cycle—while the trader ***manually enters his order.*** . . .
>
> In existing systems, multiple elements of an order must be entered prior to an order being sent to market, which is time consuming for the trader. Such elements include the commodity symbol, the desired price, the quantity and whether a buy or a sell order is desired. The more time a trader takes entering an order, the more likely the price on which he wanted to bid or offer will change or not be available in the market. . . . In such liquid markets, the prices of the commodities fluctuate rapidly. On a trading screen, this results in rapid changes in the price and quantity fields within the market grid. If a trader intends to enter an order at a particular price, but misses the price because the market prices moved before he could enter the order, he may lose hundreds, thousands, even millions of dollars. The faster a trader can trade, the less likely it will be that he will miss his price and the more likely he will make money.

Ex. 1001, 2:39–67 (emphasis added). "The inventors have developed the present invention which overcomes the drawbacks of the existing trading systems and dramatically reduces the time it takes for a trader to place a trade when electronically trading on an exchange." *Id.* at 3:3–7.

As can be seen from the above, the problem disclosed in the ’411 patent is the time it takes for a trader to *manually* enter trader orders on a market or exchange that is rapidly changing, so as to make a profit. This is a financial issue or a business problem, not a technical problem. If the market or exchange did not rapidly change, then there would be no need for a trader to enter orders rapidly. We, thus, are persuaded by Petitioner that the ’411 patent does not solve a technical problem with a technical solution.

Patent Owner’s argument that the patent is directed to a data-entry problem is misplaced. Column 2, lines 60–67 of the ’411 patent, upon which Patent Owner relies, does not disclose a problem of placing an order at an unintended price because a price value associated with an order entry location changes as it is selected. As can be seen from the quoted portions of the ’411 patent above, column 2, lines 60–67 discloses that the time it takes for a trader to *manually* enter trader orders on a market or exchange that is rapidly changing is a problem because it could cause the trader to miss its intended price. *See* Ex. 1001, 2:39–67. Further, Patent Owner’s reliance on Exhibit 2180 is misplaced. Exhibit 2180 is the district court’s order addressing claimed subject matter of U.S. Patent No. 6,772,132 and U.S. Patent No. 6,766,304. The decision relied upon a feature not required by claim 1 of the ’411 patent— a *static* price axis. Ex. 2180, 7 (“the invention keeps the prices static in position”). Although claim 1 of the ’411 patent requires a price axis, it does not require the price axis to be static. *See* Ex. 1001, 12:23–13:16. Claim 1 does not preclude the price axis from changing as the market information updates or preclude a price value associated with the order entry location to change as it is selected. We, thus,

are not persuaded by Patent Owner that the ’411 patent solves a technical problem using a technical solution.

We are persuaded by Petitioner that at least claim 1 does not recite a technological feature that is novel and unobvious over the prior art and does not solve a technical problem using a technical solution. Accordingly, we determine that at least one of the claims of the ’411 patent recites subject matter that is not a technological invention.

3. Conclusion

In view of the foregoing, we conclude that the ’411 patent is a covered business method patent under AIA § 18(d)(1) and is eligible for review using the transitional covered business method patent program.

D. Section 101 Patent-Eligible Subject Matter

Petitioner challenges claims 1–28 as directed to patent-ineligible subject matter under 35 U.S.C. § 101. Pet. 14–25. Patent Owner disagrees. PO Resp. 5–22.

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, 713–14 (Fed. Cir. 2014).

Initially, we note that Petitioner asserts that claims 26–28, which are directed to a “computer readable medium,” are “broad enough to encompass a transitory, propagating signal that is encoded, which is not eligible for patenting.” Pet. 17 (citing *In re Nuijten*, 550 F.3d 1346, 1357 (Fed. Cir. 2007)); Pet. Reply 8–9. Petitioner contends that “[u]nder the broadest reasonable interpretation (‘BRI’), the scope of this term is broad enough to

encompass a transitory, propagating signal that is encoded." Pet. 17. Petitioner explains that the specification neither defines this term nor provides examples. *Id.* In our Institution Decision, we made an initial determination that the broadest reasonable interpretation of the "computer readable medium" recited in claims 26–28 is "any medium that participates in providing instruction to a processor for execution and having program code recorded thereon." Inst. Dec. 11. Patent Owner responds that there is no evidence to support Petitioner's contention that one skilled in the art would have understood "computer readable medium having program code recorded thereon"[7] to encompass a signal at the time of the invention. PO Resp. 21.

Petitioner responds to Patent Owner's contentions by simply asserting that "TT's narrow construction of computer readable medium isn't based on the specification since that term is ***not*** used therein," and concluding that "the [Board] should apply the same BRI of computer readable medium that PTO has applied in thousands of matters." Pet. Reply 8–9 (citing MPEP § 2106).

Petitioner's response is unhelpful. For example, in its Reply, Petitioner cites no evidence to rebut Patent Owner's contentions regarding how one skilled in the art would have understood "computer readable medium having program code recorded thereon," at the time of the invention. In fact, Petitioner does not even acknowledge those contentions.

[7] The actual language recited in the claims is "computer readable medium having stored therein instructions for execution by a computer." Ex. 1001, 14:47–49.

Accordingly, on this record, which is absent any further evidence or meaningful argument from Petitioner, we are not persuaded that at the time of the invention one skilled in the art would have understood claims 26–28 as encompassing transitory, propagating signals.

There is no dispute that the remaining claims fit within one of the four statutorily provided categories of patent-eligibility. Claim 1, for example, is directed to a process.

1. Claim Language

"The § 101 inquiry must focus on the language of the Asserted Claims themselves." *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1149 (Fed. Cir. 2016); *see also Accenture Global Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1345 (Fed. Cir. 2013) (admonishing that "the important inquiry for a § 101 analysis is to look to the claim"); *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat'l Ass'n*, 776 F.3d 1343, 1346 (Fed. Cir. 2014) ("We focus here on whether the claims of the asserted patents fall within the excluded category of abstract ideas.").

Patent Owner's argument regarding the eligibility of claim 1 implies that the claim requires the price axis to be static or that the values of the price axis do not change position. For example, Patent Owner argues that the problem with the conventional Fig. 2 GUI is that values in the price column change just before a trader clicks on it and, thus, the trader may enter an order at an unintended price. *See* PO Resp. 1–5.

Patent Owner's arguments are not commensurate with the scope of claim 1 and, thus, are unpersuasive. Although claim 1 of the '411 patent requires a price axis, it does not require the price axis to be static. *See* Ex. 1001, 12:23–13:16. It does not preclude the values of the price axis from

changing as the market information updates. In other words, claim 1 allows for a price value associated with the order entry location to change as market information updates and change at the time a trader is selecting a corresponding order entry location. The invention, as claimed, does not solve the problem asserted by Patent Owner.

Patent Owner argues that "[t]he '411 claims are patent eligible because, while different in scope, for purposes of patent eligibility they are indistinguishable from the '132 and '304 claims" and urges us to determine that the claims of the '411 patent are eligible because the Federal Circuit determined that the claims of the '304 patent and the '132 patent were eligible in *Trading Technologies*. PO Br. 2–3. We are not persuaded that the claims of the '411 patent are indistinguishable for the purposes of patent eligibility. The claims of the '304 patent and the '132 patent require that the price axis be static. *See* Ex. 2180, 2 (reproducing claim 1 of both the '304 patent and the '132 patent). The claims of the '411 patent do not. In *Trading Technologies*, the Federal Circuit relied upon the reason articulated by the district court when determining that the claims of the '304 patent and the '132 patent were not directed to an abstract idea and noted that the claims required a static price index in determining that the claims of the '304 patent and the '132 patent recited an inventive concept. *Trading Techs.*, 2017 WL 192716 at *3. Likewise, the district court decision mentioned the static price axis when finding the claims are not directed to an abstract idea. Ex. 2180, 6 ("the invention keeps the prices static in position"). In *Trading Technologies*, the Federal Circuit implied that the claims of the '304 patent and the '132 patent were on the line between patent eligibility and ineligibility. *See id.* at *4 (noting the "close question[] of eligibility"). We,

thus, are not persuaded that claims of the ’411 patent are eligible merely because the Federal Circuit determined that the claims of the ’304 patent and ’132 patent are patent eligible.

2. Eligibility

Patent-eligible subject matter is defined in § 101 of the Patent Act, which recites:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

There are, however, three judicially created exceptions to the broad categories of patent-eligible subject matter in § 101: laws of nature, natural phenomena, and abstract ideas. *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014); *Mayo Collaborative Servs. v. Prometheus Labs., Inc*., 132 S. Ct. 1289, 1293 (2012). Although an abstract idea, itself, is patent-ineligible, an application of the abstract idea may be patent-eligible. *Alice*, 134 S. Ct. at 2355. Thus, we must 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). The claim must contain elements or a combination of elements that are “sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [abstract idea] itself.” *Id*. (citing *Mayo*, 132 S. Ct. at 1294).

3. Abstract Idea

“The ‘abstract idea’ step of the inquiry calls upon us to look at the ‘focus of the claimed advance over the prior art’ to determine if the claim’s

'character as a whole' is directed to excluded subject matter." *Affinity Labs of Texas v. DirectTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016) (quoting *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016); *see also Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016).

According to Petitioner, the claims are directed to the abstract idea of "placing an order based on observed (plotted) market information, as well as updating market information." Pet. 16. Petitioner contends that "claim 1 could be performed in the human mind or with the aid of pen-and-paper with little difficulty because the claim requires plotting only a few data points" (*id.* at 17) and that the claims are directed to commodity trading which is "a fundamental economic practice long prevalent in our system of commerce." Pet. Reply 5–6 (citing *Alice*, 134 S. Ct. at 2356). Patent Owner disagrees. *See* PO Resp. 5–15.

Claim 1 of the '411 patent recites "a method of displaying market information relating to and facilitating trading of a commodity being traded on an electronic exchange." Ex. 1001, 12:24–25. Claim 1 recites steps of displaying market information, bid and ask quantities, in regions along a price axis. *Id.* at 12:40–47, 56–64. The market information is an indicator of an order to buy at the highest bid price and an indicator of an order to sell at the lowest ask price. *Id.* In other words, the displayed market information is the inside market. Claim 1 then recites a step of moving the market information along the price axis as the market changes. *Id.* at 12:48–56, 12:65–13:6. Claim 1 finally recites a step of displaying an order entry region and a step of setting parameters for a trade order and a step of sending a trade order to an exchange. *Id*. at 13:7–16.

As can be seen from its steps, the focus of claim 1 is placing trade orders based on displayed market information, as well as updating the market information. This focus is consistent with the '411 patent's statement that "[t]he present invention is directed to the electronic trading of commodities. . . . It facilitates the display of and the rapid placement of trade orders." *Id.* at 1:21–27. The focus of claim 1 is also consistent with the problem disclosed by the '411 patent, which is a trader missing an intended price because the market changed during the time required for a trader to read the prices displayed and to manually enter an order. *Id.* at 2:42–67.

Claim 1 does not recite any limitation that specifies how the computer implements the steps or functions for using a GUI. For example, claim 1 recites displaying an arrangement of the market information on the GUI. The bid quantities are displayed in the bid region at locations that correspond to prices along a price axis and ask quantities are displayed in an ask region at locations that correspond to prices along the price axis. *Id.* at 12:40–47, 56–64. Claim 1 does not specify how the computer maps the bid quantities, ask quantities, and price axis to the display. The '411 patent also does not disclose an unconventional or improved method of mapping the bid quantities, ask quantities, and price axis to the display. It states that "[t]he physical mapping of such information to a screen grid can be done by any technique known to those skilled in the art" and that "[t]he present invention is not limited by the method used to map the data to the screen." *Id.* at 5:1–4.

The '411 patent discloses that at least 60 exchanges throughout the world utilize electronic trading and discloses that it is known that electronic

trading includes analyzing displayed market information and updated market information to send trade orders to an exchange. *See id.* at 1:31–2:67. Similarly, Patent Owner's declarant, Mr. Thomas, indicates that traders in prior trading systems, including pre-electronic open outcry systems, which have been used for over one hundred years, send trade orders to an exchange based on price, such as the inside market prices or other prices. Ex. 2169 ¶¶ 34, 60, and 61. Mr. Thomas testifies that

> [i]n the trading pit, traders utilize shouting and hand signals to transfer information about buy and sell orders to other traders. To avoid confusion, the inside market prices were the focus, and traders could only shout and signal regarding their interest at the best bid/offer or at a price that improves the best bid/offer.

Ex. 2169 ¶ 34. The '411 patent discloses that electronic exchanges are known to provide the market depth for display that is the inside market and a few orders away from the inside market. Ex. 1001, 5:5–11. Further, Exhibit 1026 discloses that long before the '411 patent, traders maintained books that plotted bids and asks (e.g., the market depth) along a price axis. *See* Ex. 1026, 44–46. Figure 4-2 of Exhibit 1026 is reproduced below.

FIGURE 4-2. *A page in the specialist's book.*

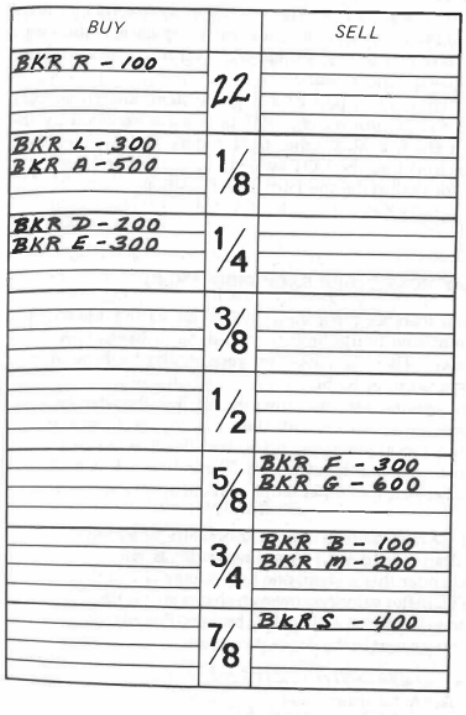


Figure 4-2 depicts a page of a book of a trader. *Id.* at 44–45. Orders to buy or sell a commodity are plotted along a prices axis. For example, Figure 4-2 shows the best bid at 22¼ and the best ask at 22⅝. *Id.* at 44.

Given this, we determine that placing an order based on displayed market information, such as the inside market and few other orders, as well as updating the market information is a fundamental economic and conventional business practice. We are persuaded by Petitioner that the method of claim 1 could be performed in the human mind or with the aid of pen-and-paper with little difficulty because the claim requires plotting only a few data points. *See* Pet. 17 (citing Ex. 1026, 44–46; Ex. 1019 ¶¶ 73–74).

The claims at issue here are like the claims at issue in *Affinity Labs.* In *Affinity Labs*, the claim at issue recited an application that enabled a cellular telephone to present a GUI displaying a list of media sources that included selectable items for selecting a regional broadcasting channel.

Affinity Labs, 838 F.3d at 1255–56. The claim also recited that the cellular telephone was enabled to transmit a request for the selected regional broadcasting channel. *Id.* at 1256. The claims at issue here are also like the claims at issue in *Ameranth*. In *Ameranth*, the claim at issue recited a GUI that displayed menu items in a specific arrangement, a hierarchical tree format. Menu items were selected to generate a second menu from a first menu. *Ameranth*, 842 F.3d at 1234. In both *Affinity Labs* and *Ameranth*, the court determined that the claims were not directed to a particular way of programming or designing the software, but instead merely claim the resulting systems. The court thus determined that the claims were not directed to a specific improvement in the way computers operate. *Affinity Labs*, 838 F.3d at 1260–61; *Ameranth*, 842 F.3d at 1241. Here, the claims also recite the resulting GUI and are not directed to specific improvements in the way the computers operate.

> Though lengthy and numerous, the claims [that] do not go beyond requiring the collection, analysis, and display of available information in a particular field, stating those functions in general terms, without limiting them to technical means for performing the functions that are arguably an advance over conventional computer and network technology [are patent ineligible].

Elec. Power Grp., 830 F.3d at 1351. "Generally, a claim that merely describes an 'effect or result dissociated from any method by which [it] is accomplished' is not directed to patent-eligible subject matter." *Ameranth*, 842 F.3d at 1244 (quoting *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1348 (Fed. Cir. 2015)).

Claim 1 of the '411 patent is unlike the claims at issue in *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014) and

Enfish. In *DDR Holdings*, the court determined that the claims did not embody a fundamental economic principle or a longstanding commercial practice. The claims at issue in *DDR Holdings* were directed to retaining website visitors, which the court determined was a problem "particular to the Internet." *DDR Holdings*, 773 F.3d at 1257. The court also determined that the invention was "necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks" and that the claimed invention did not simply use computers to serve a conventional business purpose. *Id.* In *Enfish*, the claim at issue was directed to a data storage and retrieval system for a computer memory. *Enfish*, 822 F.3d at 1336–37. The court determined that the claims were directed to an improvement in the functioning of a computer and were not simply adding conventional computer components to well-known business practices. *Id.* at 1338. Here, in contrast, claim 1 is directed to a fundamental economic principle or a longstanding commercial practice and not directed to an improvement in the computer, but simply to the use of the GUI in a method of placing an order based on displayed market information, as well as updating market information.

Patent Owner argues that the GUI disclosed in the '411 patent solves an alleged problem of the Fig. 2 GUI, displaying the inside market at a fixed location, while the displayed prices change as the market changes. *See* PO Resp. 8–9. If a trader was focused on trading at a particular price, the trader could miss its intended price using the Fig. 2 GUI because the price could change as the trader clicked it. *Id.* at 2. Patent Owner contends that the '411 patent solves this problem "by combining a dynamic display of bid and ask indicators that move relative to a price axis." *Id.* at 4. The problem of a

price changing just as a trader clicks on the price is not disclosed in the '411 patent. Patent Owner's argument is unpersuasive because it is not commensurate with the scope of the claim. Claim 1 does not require the price axis to be static. *See* Ex. 1001, 12:23–13:16. It does not preclude the values of the price axis from changing as the market information updates. In other words, the claims allow for a price value associated with the order entry location to change as market information updates and change at the time a trader is selecting a corresponding order entry location. The claimed subject matter does not solve the problem alleged by the Patent Owner.

Further, claim 1 of the '411 patent is unlike the claims at issue in *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d. 1299 (Fed. Cir. 2016). In *McRO*, the court held that claims that recited "a specific asserted improvement in computer animation" were not directed to an unpatentable abstract idea because they go "beyond merely organizing existing information into a new form or carrying out a fundamental economic practice." *McRO*, 837 F.3d at 1314–15 (citation and brackets in original omitted). Here, the claims merely organize existing market information so that it is displayed or plotted along a price axis. Plotting bids and asks along a price axis is not a specific improvement to a functioning of a computer. *See* Ex. 1026, 44–46.

4. Inventive Concept

To be patent eligible, a claim directed to an abstract idea must recite additional elements that constitute an inventive concept. *Alice*, 134 S. Ct. at 2357. One looks to "[t]he 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.* at

2355 (quoting *Mayo*, 132 S. Ct. at 1297–98). The additional elements must be more than "well-understood, routine, conventional, activity." *Mayo*, 132 S. Ct. at 1298.

Petitioner contends that claim 1 does not recite an inventive concept. Pet. 18–24; Pet. Reply 6–8. Patent Owner disagrees. PO Resp. 16–20.

First, claim 1 of the '411 patent recites "a method of displaying market information relating to and facilitating trading of a commodity being traded on an electronic exchange." Ex. 1001, 12:23–25. The '411 patent discloses that its system can be implemented "on any existing or future terminal or device" (*id.* at 4:8–12), which are known to include displays, and discloses that the input device can be a mouse (*id*. at 4:13–19), which is a known input device. A mere recitation of a GUI does not make the claim patent eligible. *See Affinity Labs*, 838 F.3d at 1257–58; *Ameranth*, 842 F.3d at 1236–1242; *Internet Patent Corp.*, 790 F.3d at 1348–1349; Pet. Reply 16–17. A recitation of a generic GUI merely limits the use of the abstract idea to a particular technological environment.[8] "[L]imiting the field of use of the abstract idea to a particular existing technological environment does not render the claims any less abstract." *Affinity Labs*, 838 F.3d at 1259 (citing *Alice*, 134 St. Ct. at 2358; *Mayo*, 132 S. Ct. at 1294).

Second, claim 1 recites steps of displaying indicators representing a quantity associated with a highest order to buy the commodity or lowest order to sell the commodity in a bid display region or ask display region,

[8] The '411 patent was also the subject of CBM2014-00133. In CBM2014-00133, Patent Owner stated, "[t]he claimed tool is implemented graphically merely because of the state of technology today—it would be possible to implement a comparable tool mechanically." Ex. 1028, 28.

respectively and moving the indictors upon receipt of market information. Ex. 1001, 12:30–13:6. Locations in the bid or ask display region correspond to a price level along a price axis. *Id.* Essentially, these limitations require plotting the inside market along a price axis. Plotting information along an axis is a well-understood, routine, conventional activity. *See* Ex. 1026, 44–46. The Fig. 2 GUI includes regions for displaying indicators of bid and ask quantities and regions for displaying corresponding prices. For example, the Fig. 2 GUI displays the bid quantity in BidQty column 202 at locations that correspond to the bid prices in BidPrc column 203. Ex. 1001, 5:22–27. This is akin to plotting information BidQty and AskQty along a price axis. Further, Mr. Thomas testifies that prior GUIs, which are similar to the Fig. 2 GUI, "displayed the locations for the best bid and ask prices such that the prices were displayed vertically (*e.g.*, with the location for the best ask price being displayed above the location for the best bid price)." Ex. 2169 ¶ 60; *see also* Ex. 1007, 107; Ex. 1004, Fig. 2a (depicting a trading screen having a central order price column and ask and bid orders in adjacent corresponding columns). Displaying the best ask price above a best bid price would be displaying a common column of price levels. The '411 patent states:

> [T]he physical mapping of such information to a screen grid can be done by any technique known to those skilled in the art. The present invention is not limited by the method used to map the data to the screen display.

Ex. 1001, 5:1–4. These steps of claim 1 require merely a rearrangement of market information that was known to be displayed in corresponding columns on a GUI. *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d

1366, 1370 (Fed. Cir. 2011) (holding "[t]he mere collection and organization of data" patent-ineligible).

Third, claim 1 also recites steps of displaying an order entry region for receiving commands to send trade orders, setting trade order parameters, and sending trade orders to the electronic exchange with a single action. Ex. 1001, 13:7–16. Methods that permit single action entry of an order, which has preset default parameters, by clicking on a cell in a display of a GUI are known technology. *See* PO Resp. 1–4; Ex. 1028, 8. The additional elements must be more than "well-understood, routine, conventional activity." *Mayo*, 132 S. Ct. at 1298.

The individual elements of the claim do not transform the nature of the claim into a patent-eligible application. They do not add significantly more to the abstract idea or fundamental economic practice. Contrary to Patent Owner's argument, the claim simply recites the use of a generic GUI with routine and conventional functions. Even considering all of the elements as an ordered combination, the combined elements also do not transform the nature of the claim into a patent-eligible application. Indeed, as discussed above, the Fig. 2 GUI disclosed in the '411 patent includes a similar combination of elements.

For the reasons discussed above, the claims of the '411 patent are not directed to patent eligible subject matter under 35 U.S.C. § 101.

E. TSE Challenges

Petitioner challenges claims 1–28 as having been obvious over TSE, Belden, and Togher.

1. TSE Printed Publication Status

Petitioner argues that TSE is prior art under 35 U.S.C. § 102(a). Pet. 11. In support of its showing that TSE qualifies as prior art, Petitioner relies on the November 21, 2005, deposition testimony of Atsushi Kawashima taken during litigation between Patent Owner and a third party, eSpeed, Inc. *Id.*; Ex. 1010.

Whether a document qualifies as a printed publication under 35 U.S.C. § 102(a) is a question of law based on underlying findings of fact. *In re Enhanced Sec. Research, LLC*, 739 F.3d 1347, 1354 (Fed. Cir. 2014) (citing *In re Hall*, 781 F.2d 897, 899 (Fed. Cir. 1986)). The Federal Circuit "has interpreted § 102 broadly, explaining that even relatively obscure documents qualify as prior art so long as the public has a means of accessing them." *Id*. (citing *Hall*, 781 F.2d at 899).

> Our leading case on public accessibility is *In re Hall*, 781 F.2d 897 (Fed. Cir. 1986). In *Hall* we concluded that "a single cataloged thesis in one university library" constitutes "sufficient accessibility to those interested in the art exercising reasonable diligence." *Id.* at 900. Thereafter, in *Constant v. Advanced Micro–Devices, Inc.*, we explained that "[a]ccessibility goes to the issue of whether interested members of the relevant public could obtain the information if they wanted to." 848 F.2d 1560, 1569 (Fed. Cir. 1988). Therefore, "[i]f accessibility is proved, there is no requirement to show that particular members of the public actually received the information." *Id.*

Enhanced Sec. Research, LLC, 739 F.3d at 1354. The determination of whether a document is a "printed publication" under 35 U.S.C. § 102 involves a case-by-case inquiry into the facts and circumstances surrounding its disclosure to members of the public. *In re Klopfenstein*, 380 F.3d 1345, 1350 (Fed. Cir. 2004).

TSE is entitled "Futures/Option Purchasing System Trading Terminal Operation Guide" of the "Tokyo Stock Exchange Operation System Division." Ex. 1007, 1.[9] In the middle of page 5 is the annotation "August, 1998" above the words "Tokyo Stock Exchange Operation System Division." *Id.* at 5. Petitioner argues that TSE is prior art under 35 U.S.C. § 102(a) because it was published in August of 1998 by giving two copies to each of the about 200 participants in the Tokyo Stock Exchange, who were free to do whatever they wanted with their copies of the publication. Pet. 11 (citing Ex. 1010, 12–33).

In support of its arguments regarding TSE as prior art, Petitioner directs us to portions of Mr. Kawashima's testimony. At the time of his testimony, Mr. Kawashima testified that he was employed by the Tokyo Stock Exchange and was so at the time of the TSE manual, August 1998. Ex. 1010, 5–11. He further testified that TSE "is the current TSE futures options trading system terminal document, manual" that was prepared August of 1998 by the Tokyo Stock Exchange and that he was in charge of preparing the document. Ex. 1010, 10–11. Mr. Kawashima also testified that the purpose of the manual was that "in 1998 we replaced the futures options trading system and so this new manual was prepared because there were changes to the way the trading terminals were operating." *Id.* at 12. Kawashima further testified that the manual was distributed to "participants" in August of 1998, who were "securities companies for banks who are able to carry out futures options trading at the TSE" and that the "manual was

[9] References to page numbers are as if the pages were numbered sequentially beginning with the first page of the English translation of TSE (Ex. 10017).

given to explain those changes" made with respect to the operation of the TSE trading system and terminals. *Id.* at 12, 14. Mr. Kawashima testified that the manual was given to around 200 "participant" companies—all companies that conduct futures option trading on the Tokyo Stock Exchange. *Id.* at 13.[10] According to Mr. Kawashima, two copies were distributed to each company, by having a person from each company come to the Tokyo Stock Exchange operating system section to pick up their copies of the manual, and that there was no restriction on what the participants could do with the 1998 manual once they received it. *Id.* at 14–15. Mr. Kawashima personally distributed the TSE manual to some of the participants. Ex. 2163, 60:13–24.

Notwithstanding Patent Owner's arguments, which we address below, we are persuaded by Petitioner's showing, which we adopt as our own, that TSE qualifies as prior art under 35 U.S.C. § 102(a). Petitioner asserts, with supporting evidence, that TSE was distributed to *participants* in the Tokyo Stock Exchange. Pet. 11; Ex. 1010, 12, 14. Based on the evidence before us, the participants were securities companies for banks. The purpose of the distribution of the manual was to alert the securities companies of *changes to the way the trading terminals* of the Tokyo Stock Exchange *operated*. Ex. 1010, 12, 14. Indeed, TSE is a user manual that includes, for example, in Chapter 2, instructions for terminal system configuration to enable a participant, such as a security company to connect to the Tokyo Stock Exchange. Ex. 1007, 10–25. Chapter 15, entitled "Response To A

[10] We understand the then "participants" included such companies as Goldman Sachs Securities, Merrill Lynch, and Morgan Stanley. Ex. 2163, 58:5–17; Ex. 2169 ¶ 32.

Problem," provides detailed explanations should a problem arise with terminal equipment, communication circuit difficulties, central system recovery difficulties, etc., along with in-house procured terminal problem handling instructions. *Id.* at 5. Thus, TSE is more than a user manual for how to trade on the Tokyo Stock Exchange, but also includes how to electronically connect to the Tokyo Stock Exchange.

The evidence that is before us, both circumstantial and direct, supports a finding that TSE was made accessible to securities companies and all of the personnel in such a company, who would have employed technical support personnel, such as computer scientists or engineers, who would have needed a copy of the TSE manual to configure their own system to electronically communicate, and to continue to trade securities, with the Tokyo Stock Exchange.[11] Thus, the securities companies would have included computer scientists or engineers, as well as traders. We find that all such persons who worked at the securities companies would have been interested members of the relevant public.

Patent Owner's Contentions[12]

Patent Owner argues that the evidence fails to prove TSE is prior art. PO Resp. 60–67. We begin by addressing Patent Owner's assertions that Mr. Kawashima's testimony should be given little or no weight because his

[11] We made a similar finding in our Decision to Institute (Inst. Dec. 26), thereby putting Patent Owner on notice of such finding in support of our determination that TSE was publically accessible. Patent Owner does not address such finding or provide evidence to rebut our finding in that regard. *Cuozzo*, 136 S. Ct. at 2141.

[12] Patent Owner makes unpersuasive evidentiary arguments as well, which we address in connection with Patent Owner's Motion to Exclude TSE, *infra*.

testimony is not corroborated and he is an interested witness. *Id*. at 65–67. Patent Owner argues that Kawashima's employer—the Tokyo Stock Exchange—challenged Patent Owner's Japanese counterpart to U.S. Patent No. 6,766,304 by providing TSE to the Japanese Patent Office. *Id*. at 66. Patent Owner further argues that the Tokyo Stock Exchange wanted the Japanese Patent Office to rely on "these documents" to prevent Patent Owner from obtaining the Japanese patent. *Id*. (citing Ex. 2163, 39:23–40:20, 42:14–43:10; Ex. 1010, 110:10–14). Patent Owner concludes that because Kawashima's employer tried to use TSE to prevent Patent Owner from obtaining the 6,766,304 patent, Kawashima is not disinterested. *Id*.

We are not persuaded that Kawashima is an interested witness and that his testimony should be given little weight. First, the patent involved here is not the same as the patent involved before the Japanese Patent Office and we do not understand what Patent Owner means by "these documents." In any event, Patent Owner has not shown that what occurred in a proceeding before the Japanese Patent Office involving a different patent is relevant to the facts of this proceeding. Patent Owner has not shown sufficiently that Mr. Kawashima had an interest, himself, regarding the outcome of the Japanese Patent Office proceeding. Even assuming that the Tokyo Stock Exchange had an interest in that earlier proceeding, it does not follow necessarily that Mr. Kawashima himself had an interest in it as well. We have considered the evidence to which we are directed, but do not find that evidence (passages from Mr. Kawashima's original and cross-examination) to support Patent Owner's assertions that Mr. Kawashima is biased. Indeed, when asked if the Tokyo Stock Exchange preferred that vendors like Trading Technologies not have patents on trading screens, Mr.

Kawashima testified, that that was "not something I would know." Ex. 2163, 41:6–12. Lastly, Patent Owner has not demonstrated sufficiently that Mr. Kawashima's meetings with Petitioner's attorneys prior to his cross-examination is demonstrative of "bias." PO Resp. 66–67. Patent Owner has not shown why Mr. Kawashima's meeting with Petitioner's counsel prior to his deposition would make him biased. For these reasons, we are not persuaded that Mr. Kawashima is an interested witness.

We also are not persuaded by Patent Owner's argument that because Mr. Kawashima's testimony is uncorroborated we should give it little weight. PO Resp. 65–66. In support of the argument, Patent Owner cites to cases regarding an *interested witness*. *See*, *e.g.*, *id*. at 65. As explained above, Patent Owner has not shown sufficiently that Mr. Kawashima is an interested witness. The other arguments made, e.g., that there is no evidence of when the manuals were picked up or by whom or what a person did with the document once they received it, are factors to consider when determining whether a document was publically accessible, which we address below.

For all of these reasons, we credit the testimony of Mr. Kawashima. We find that the facts discussed above regarding Mr. Kawashima's testimony (Ex. 1010) are supported by a preponderance of the evidence and are undisputed.[13] Although Mr. Kawashima was cross-examined during this proceeding, Patent Owner does not direct attention to portions of his cross-examination testimony, or any other evidence, that would outweigh Mr.

[13] The burden of showing something by a preponderance of the evidence simply requires the trier of fact to believe that the existence of a fact is more probable than its nonexistence. *Concrete Pipe & Products of California, Inc. v. Construction Laborers Pension Trust for Southern California*, 508 U.S. 602, 622 (1993).

Kawashima's original testimony (Ex. 1010) regarding what the TSE manual was, why it was distributed, how it was distributed, when it was distributed, and to whom it was distributed.

Patent Owner argues that Petitioner has not established that TSE was publically available. PO Resp. 61–64. In particular, Patent Owner argues that there is no evidence that anyone actually received a copy of TSE or whether the receivers of such document were persons of ordinary skill in the art. *Id.* (quoting *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1348 (Fed. Cir. 2016) (a reference will be considered publicly accessible if it was "disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence, can locate it." (citation omitted))).

Patent Owner's argument that there is no evidence that anyone actually received a copy of TSE is misplaced. The proponent of a document need not show that particular members of the interested public *actually received* the information. *See, e.g.*, *Enhanced Sec. Research, LLC*, 739 F.3d at 1354; *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1569 (Fed. Cir. 1988); *Blue Calypso*, 815 F.3d at 1348. Rather, accessibility goes to the issue of whether persons interested and ordinarily skilled in the subject matter could obtain the information if they wanted to. *Id*. Here, we have before us persuasive evidence that TSE was made publically accessible by providing two copies to each of the about 200 participants (securities companies for banks) in the Tokyo Stock Exchange, who were free to do whatever they wanted with their copies of the publication. Ex. 1010, 12, 14. For these same reasons, we are not persuaded by Patent Owner's implicit argument that Petitioner need show that the two copies of the TSE manual

available for pick up by the 200 participant companies actually were picked up. In any event, Mr. Kawashima testified that he personally distributed the TSE manual to some of the participants. Ex. 2163, 60:13–24.

Patent Owner argues that the participants (securities companies for banks) who allegedly received copies of the TSE manual are not persons of ordinary skill in the art, which Patent Owner submits would be GUI designers, and not traders at a stock exchange. PO Resp. 62–63. We are not persuaded by Patent Owner's argument.

The patent before us is a business method patent, the subject matter of which is represented by both the business and technical sides of the spectrum. Here, where the patent is directed to trading commodities on an exchange using a computer, we must consider all interested members of the public, which would include not only technical personnel, but traders as well. Traders of commodities at securities companies for banks would be interested members of the public.

In any event, there is sufficient evidence for us to find that the securities companies for banks also would have employed technical personnel as well, and even a "GUI designer." As explained above, the purpose of the TSE manual was to alert the securities companies of changes to the way the trading terminals of the Tokyo Stock Exchange *operated*. Ex. 1010, 12, 14. The TSE manual includes information and instructions of how to electronically connect to the Tokyo Stock Exchange. TSE is not simply a "how to trade commodities" user manual as Patent Owner seems to suggest. The strong circumstantial evidence supports finding that TSE was made accessible to securities companies who would have employed technical support personnel, such as computer scientists or engineers, to configure

their system to electronically communicate, and to continue to trade securities, with the Tokyo Stock Exchange, based on the changes in operation of the terminals explained in the TSE manual. Thus, the securities companies would have included computer scientists or engineers, as well as traders. Lastly, even assuming that a person of ordinary skill in the art is narrowly limited to a "GUI designer" as Patent Owner asserts, we find that securities companies for banks ("participants") provided their own front-end order entry software, and that such participants would have employed GUI designers to formulate the front-end order entry software to facilitate trading on the Tokyo Stock Exchange. Ex. 2169 ¶ 32.

Patent Owner argues that because participants of the Tokyo Stock Exchange were contractually prohibited from modifying the terminals or software, there was no reason to provide the manual to GUI designers. PO Resp. 62–63. Patent Owner has not shown sufficiently that such a contractual provision would have prevented persons interested or even ordinarily skilled in the subject matter from receiving copies of TSE. For all of the above reasons, we are persuaded that TSE was publically accessible.

Patent Owner additionally argues that there is no evidence that a person having ordinary skill in the art could have located TSE using "reasonable diligence," because there is no evidence that such a person searching for TSE would find it, such as being placed in a library, indexed, or catalogued, or directions to locate TSE. PO Resp. 63–64. We determine above, that the record evidence supports a determination that TSE was publically accessible to persons interested and ordinarily skilled in the subject matter. Patent Owner's arguments are premised on the notion that none of the personnel at the securities banks are interested and ordinarily

skilled in the subject matter, which we reject. Thus, Patent Owner's argument is unpersuasive.

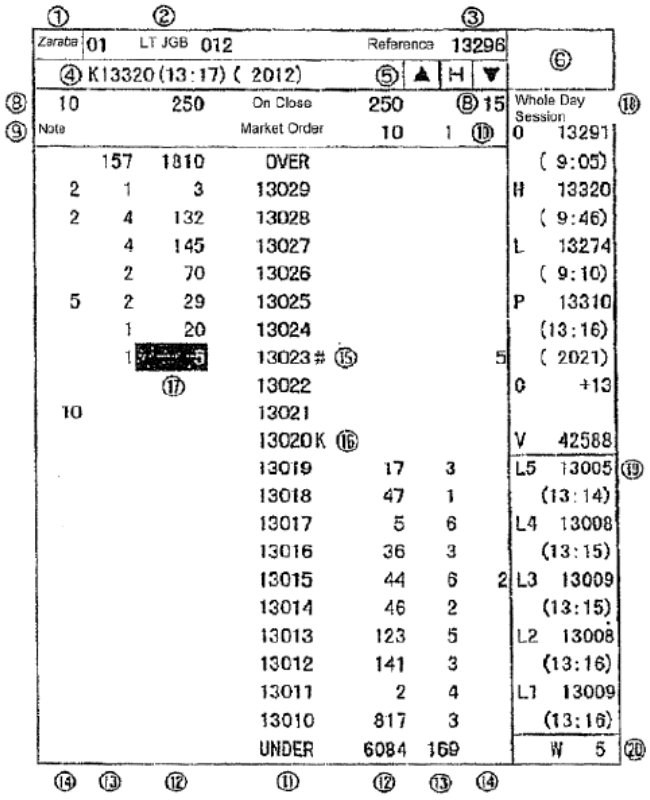
For all of the above reasons, we determine that TSE qualifies as prior art.

2. TSE, Belden, and Togher

a. Claims 1 and 26

With respect to claims 1 and 26, Petitioner cites TSE as teaching the majority of limitations of the claims. Pet. 64–69. Petitioner cites Belden for the "single action" limitation in the claims, including the "setting" and "sending" via the "single action," and cites Togher as teaching an order being for a "default quantity." *Id.* at 69–73. Petitioner proposes modifying TSE based on the teachings of Belden and Togher. *Id.* at 62–64.

TSE describes a trading system that facilitates trading with an electronic exchange by receiving bid and offer information, displaying it to a user, and accepting and sending bid and offer orders. Ex. 1007, 6–13, 35. A trading terminal displays a GUI for depicting market information on a Board Screen, which is shown in the figure reproduced below ("TSE's Board Screen").



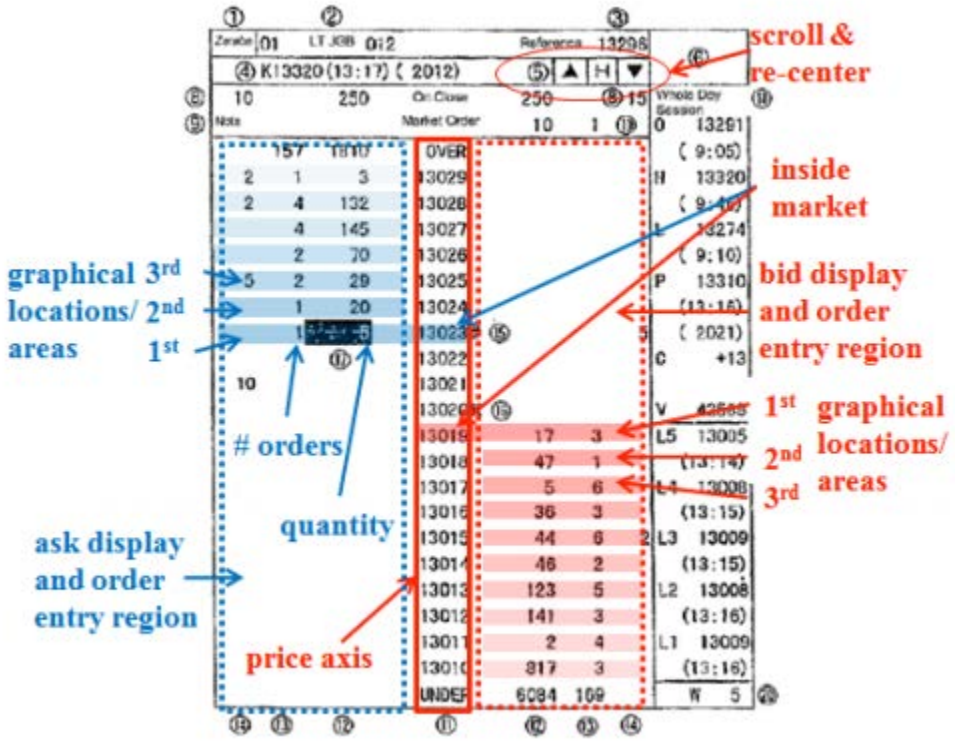
The figure reproduced above is illustrated on page 107 of TSE and depicts TSE's Board Screen. The Board Screen includes a central order price at column 11—a price display. *Id.* at 111. The Board Screen can be placed in a "Scrolling Screen" mode where "the price display positions do not change automatically." *Id.* at 115. TSE describes a number of ways to scroll the Board Screen to vertically scroll, including using the up/down scroll buttons, vertically moving the cursor, and pressing the up or down key on the keyboard. *Id.* at 116. To the left and right of order price column 11, at a location corresponding to price, are bid and offer indicators consisting of numbers representing the quantity of orders in respective columns 12, 13, and 14. *Id.* at 112. The Board Screen is automatically updated with new bid and offer information from a central system every three seconds. *Id.* at 91. TSE explains that "[t]he board information on each Board Screen is

automatically updated even if it has been scrolled vertically." *Id.* TSE describes a user entering an order by double-clicking at a location along the price axis, which automatically displays a pop-up window displaying the selected price. *Id.* at 134, 137. Clicking a send button sends an order to the exchange. *Id.* at 143.

"*receiving . . . market information*"

Claims 1 and 26 each recite "receiving . . . market information for a commodity . . . comprising an inside market with a current highest bid price and a current lowest ask price." Petitioner contends that TSE teaches this limitation. Pet. 65–66 (citing Ex. 1007, 35, 91, 107; Ex. 1019 ¶¶ 161–162). Petitioner references "Román's FIG. D" when explaining its contentions relative to TSE. *Id.* at 66. We agree with and adopt Petitioner's contentions, which are not disputed by Patent Owner.

TSE explains, for example, that its system "handles . . . trades in . . . 5 markets" including "Bond Futures Market," "Index Futures Market," and "Stock Option Market." Ex. 1007, 35. Román's FIG. D, reproduced below, illustrates the market information received and displayed in TSE.



Román's FIG. D is an annotated version of the figure illustrated on page 107 of TSE depicting a Board Screen, and is found at page 85 of the Román Declaration. Mr. Román's annotations indicate the portions of the Board Screen considered to correspond to various claim elements. The '411 patent explains that "[f]or a commodity being traded, the 'inside market' is the highest bid price and the lowest ask price." Ex. 1001, 4:60–62. As illustrated above in Román's FIG. D, TSE receives and displays inside market information.

Accordingly, we find that TSE teaches "receiving . . . market information" as required by the claims.

"displaying . . . a bid display region" and "an ask display region"

Claims 1 and 26 each additionally recite "displaying . . . a bid display region . . . along a price axis" and "displaying . . . an ask display region . . .

along the price axis." Petitioner cites TSE as teaching these limitations, and specifically indicates the portions in TSE's Board Screen that correspond to these limitations as shown in Román's FIG. D above. Pet. 66–67 (citing Ex. 1007, 111–113, 137; Ex. 1019 ¶¶ 163–165). We agree with and adopt Petitioner's contentions, which are not disputed by Patent Owner.

We find that TSE teaches these limitations, as clearly illustrated in Román's FIG. D above. For example, TSE's center column 11, illustrates the price axis, with bid and ask display regions on either side of that price axis.

"dynamically displaying . . . a first indicator" and "a second indicator" and "moving the first indicator" and "the second indicator"

Claims 1 and 26 each additionally recite "dynamically displaying . . . a first indicator representing quantity associated with at least one trade order to buy the commodity at the current highest bid price" and "dynamically displaying . . . a second indicator representing quantity associated with at least one trade order to sell the commodity at the current lowest ask price." The "first indicator" is "in a first graphical location . . . in the bid display region . . . corresponding to a price level associated with the current highest bid price" and the "second indicator" is "in a first graphical location . . . in the ask display region corresponding to a price level associated with the current lowest ask price." "[U]pon receipt of . . . a new highest bid price," "the first indicator [is moved] relative to the price axis to a second graphical location . . . in the bid display region . . . corresponding to . . . the new highest bid price" and "upon receipt of . . . a new lowest ask price," "the second indicator [is moved] relative to the price axis to a second graphical location . . . in the ask display region . . . corresponding to . . . the new lowest ask price." Petitioner cites TSE as teaching these limitations. Pet.

67–69. We agree with and adopt Petitioner's contentions, which are not disputed by Patent Owner.

For example, as Petitioner notes, and as illustrated above in Román's FIG. D, "[t]he columns labeled ⑫ in TSE's Board Screen display 'the order quantity' and the columns labeled ⑬ display 'the order count,'" with "the highest bid price and quantity (price: 13019; quantity: 17) and the lowest ask price and quantity (price: 13023; quantity: 5)." Pet. 67 (citing Ex. 1007, 112). The order quantity of 17 associated with the highest bid price corresponds to the "first indicator" and the order quantity of 5 associated with the lowest ask price corresponds to the "second indicator." *Id.* (citing Ex. 1019 ¶ 166). As Petitioner notes, TSE "dynamically display[s]" its bid and ask information (i.e., the "first indicator" and the "second indicator"). *Id.* (citing Ex. 1007, 91). TSE explains that the "Board and quotation information is automatically updated at three-second intervals," which occurs "even if [the Board Screen] has been scrolled." Ex. 1007, 91.

Accordingly, we find that TSE teaches "dynamically displaying . . . a first indicator" and "a second indicator" and "moving the first indicator" and "the second indicator" as required by the claims.

"displaying an order entry region" and selecting a particular area of the "order entry region" by a "single action"

Claims 1 and 26 each additionally recite "displaying an order entry region comprising a plurality of graphical areas for receiving single action commands" that set trade order prices and send trade orders. "[E]ach graphical area correspond[s] to a different price level along the price axis" and "selecting a particular graphical area in the order entry region through a single action of a user input device . . . both set[s] a price for a trade order and send[s] the trade order having a default quantity to the electronic

exchange." Petitioner cites the combination of teachings from TSE, Belden, and Togher for these limitations. Pet. 69–73. Patent Owner disputes those contentions. PO Resp. 69–71.

With respect to the "order entry region" and "single action" limitations, Petitioner cites the combined teachings of TSE and Belden. Pet. 69–71. Belden "relates to computer-based techniques for replicating a physical market for trading items such as stocks . . . and the like." Ex. 1009, 3. Petitioner contends that Belden teaches single action commands that set trade prices and send trade orders. Pet. 70–71. Patent Owner responds that "TSE does not include the claimed order entry region because selecting an area along the price axis only opens a separate order entry window, it cannot be used to send orders." PO Resp. 69 (citing Ex. 1007, 137). Patent Owner explains that "[b]ecause of the separate order entry window, TSE does not disclose the claimed 'order entry region' and functions of the claimed 'graphical areas' along a price axis." *Id.* (citing Ex. 2169 ¶ 164). With respect to Belden, Patent Owner responds that "Belden [does not] disclose a price axis, and therefore cannot disclose the claimed order entry region." *Id.* at 70. Patent Owner further contends that "even if TSE [and] Belden . . . were combined in the manner suggested by Petitioners, one still would not arrive at the claimed invention because the suggested combination lacks an 'order entry region' as claimed." *Id.* Patent Owner further contends that "Belden's single action . . . does not send an order message to an electronic exchange, but rather executes a trade." *Id.*

The problem with Patent Owner's response is that it does not address the *combined* teachings of TSE and Belden asserted by Petitioner. Regardless of whether Belden sends an order message, or executes a trade

(as Patent Owner contends), there is no dispute it does this with a single action command received by a graphical area (clicking on an icon). *See*, *e.g.*, Ex. 1009, 12, 33. As noted above, Petitioner's challenge proposes modifying TSE to send its orders based on a "single action," which is taught by Belden as explained above. There is no dispute, and we agree, that TSE teaches sending trade orders. *See* PO Resp. 69 (explaining that in TSE, "selecting an area along the price axis only opens a separate order entry window" and "clicking 'send[]' to send the order"). There is also no dispute, and we agree, that TSE teaches automatically setting a price for the trade order. *See* Ex. 1007, 137 ("Depending on the place that is double clicked, the . . . 'Order Price' . . . [is] set automatically."). Petitioner's proposed modification simply eliminates opening the separate window used to send trade orders in TSE and, instead, sends those orders automatically with the single action that was used previously to open the order entry window. Accordingly, the *combined* teachings of TSE and Belden provide an order entry region having the single action features recited in the claims.

As for the "default quantity" recited in the claims, Petitioner cites Togher and proposes further modifying TSE's teachings accordingly. Pet. 71–73. We agree with and adopt Petitioner's contentions, which are not disputed by Patent Owner. As Petitioner notes, for example, Togher teaches a trader profile, where a user can set default values for trading size. *Id.* at 72 (citing Ex. 1005, 8:65–9:10, 11:20–25, 12:7–15, Fig. 4).

Accordingly, we find that the combination of TSE, Belden, and Togher teaches the "order entry region" and "single action" limitations recited in claims 1 and 26.

Rationale for combination

Petitioner provides rationale for combining the teachings of Belden and Togher with that of TSE. Pet. 62–64, 71–73. Patent Owner disputes Petitioner's rationale. PO Resp. 75–77. For the reasons explained below, we are persuaded by Petitioner's rationale for combining the teachings of Belden and Togher with that of TSE, and adopt Petitioner's reasoning.

With respect to Belden, for example, Petitioner reasons that a person skilled in the art "would have been motivated to incorporate Belden's single-action order techniques in TSE's electronic trading system to achieve the predictable and desirable results of reducing the time needed to place an order and reduce operator error." Pet. 71 (citing Ex. 1019 ¶ 176). Petitioner additionally notes that "Belden provides motivation for the combination." *Id.* (citing Ex. 1009, 4 (noting the speed benefits)). Patent Owner responds that "Petitioners' purported motivation to combine—that Belden is 'applicable to all markets' is misplaced" and that "'[s]peed' in Belden refers to instantaneous trade-making of open outcry pits which are inherently different from the electronic exchanges of TSE." PO Resp. 76 (citations omitted). Regardless of the specific type of market to which Belden is related, we are persuaded that one skilled in the art would have appreciated that reducing the number of steps required to execute an order would result in a decrease in the amount of time required to place that order, and that users in various types of markets would have appreciated that mitigating the delay between choosing to place an order and placing that order would be beneficial. *See, e.g.*, Ex. 1019 ¶ 176.

As for the further modification to TSE's teachings based on the default quantity taught by Togher, Petitioner reasons that such a

modification would have been obvious because "Togher suggests that using defaults increases trade speed and accuracy, thus providing motivation to include this feature in TSE's trading system" and such a modification "would have been nothing more than combining prior art elements according to known methods to yield the predictable and desirable result of reducing the time needed to place an order and reducing the number of errors by reducing the number of operator actions (e.g., keystrokes)." Pet. 72–73 (citing Ex. 1019 ¶ 180). Patent Owner responds that "Roman's interpretation of TSE, and his basis for the motivation to combine with Togher's alleged default quantity, is based on a substantive mistranslation of TSE." PO Resp. 76 (citing Ex. 2178 ¶¶ 14–40). Similar to that discussed above relative to Belden, the rationale provided by Petitioner for further modifying TSE's teaching based on Togher to include a default quantity is straightforward, to increase speed and accuracy, and does not require any alleged mistranslation of [TSE]. *See, e.g.*, Ex. 1019 ¶ 180.

For the reasons set forth above, we are persuaded that Petitioner has established, by a preponderance of the evidence, that the features of claims 1 and 26 are taught by the combination of TSE, Belden, and Togher, and that one skilled in the art would have combined those teachings.

b. Claim 9

Claim 9 depends from claim 1 and further requires "dynamically displaying an entered order indicator at a graphical location aligned with a price level of the plurality of price levels, wherein the entered order indicator represents a user's trade order working at the price level aligned with the entered order indicator." Petitioner cites Belden as teaching the features recited in claim 9, other than the "entered order indicator" being "at a

graphical location aligned with a price level." Pet. 75–76 (citing Ex. 1009, 26, 33, Fig. 2b). Petitioner proposes modifying TSE to include an "entered order indicator" as taught by Belden, and reasons that "[i]t would have been obvious to a [person of ordinary skill in the art] to display the entered order indicators . . . aligned with the price axis disclosed by TSE . . . so that the trader could easily recognize and track his/her orders." Pet. 76 (citing Ex. 1023 ¶¶ 54–57).

There is no dispute, and we agree, that Belden teaches dynamically displaying the entered order indicator recited in the claims noted above. *See* PO Resp. 71; Ex. 1009, 26, 33, Fig. 2b. Rather, Patent Owner contends that "[e]ven if Belden's icon is assumed to show a working order, the purported combination would not arrive at the claimed subject matter" because "Belden does not disclose a price axis, and Petitioners failed to provide any reason why the POSA would modify TSE to add a new column of information, when conventional wisdom was to place working orders in a separate window." PO Resp. 71–72. As noted above, however, the Petition specifically states, for example, that such an arrangement would have been obvious to include in TSE "so that the trader could easily recognize and track his/her orders." Pet. 76. There is no dispute that one skilled in the art would have appreciated the benefits of displaying working orders. *See* PO Resp. 72 (Patent Owner acknowledges that "conventional wisdom was to place working orders in a separate window."). We are persuaded that, as an alternative to displaying orders in a separate window, one skilled in the art would have appreciated the benefits of "dynamically displaying" orders in alignment with the prices corresponding thereto, as recited in the claims, in

view of the ability to easily track orders when displayed in that manner as Petitioner contends.

For the reasons set forth above, we are persuaded that Petitioner has established, by a preponderance of the evidence, that the features of claim 9 are taught by the combination of TSE and Belden, and that one skilled in the art would have combined those teachings.

c. Claim 10

Claim 10 depends from claim 9 and further recites "canceling the user's trade order represented by the entered order indicator in response to a single action of the user input device with a cursor of the user input device positioned over the entered order indicator." Petitioner's challenge to claim 10 builds on the challenge to claim 9, noting that the "entered order indicator" taught by Belden and relied on to modify TSE, as discussed above relative to claim 9, includes the single click cancelling feature recited in claim 10. Pet. 76–77. The majority of Patent Owner's contentions are directed to the proposed combination of Belden's teachings with those of TSE relative to claim 9, which are not persuasive for the reasons discussed above. Patent Owner further contends that "the Petition fails to provide any motivation to combine the single-action cancelation with TSE." PO Resp. 73. The Petition, however, provides persuasive reasoning as to why one skilled in the art would have included an "entered order indicator" based on Belden's teachings as discussed above relative to claim 9. There is no dispute, and we find, that Belden teaches single action cancelling. *See* PO Resp. 73; Ex. 1009, 37–38. Accordingly, we are persuaded that when applying Belden's "entered order indicator" teachings to TSE, one skilled in the art would have included the features, such as single action cancelling,

that are part of that "entered order indicator." Further, we are persuaded that one skilled in the art would have included the single action cancelling for reasons such as improved speed. *See* Pet. 63.

d. Claim 11

Claim 11 depends from claim 1, and further recites "receiving a re-centering command to center the inside market in a window of a graphical user interface." Petitioner contends that selection of the "home button [H]" while in the Scroll Screen in TSE teaches this feature. Pet. 77 (citing Ex. 1007, 115–116; Ex. 1019 ¶ 188). Patent Owner responds that "[t]his is not a manual re-centering command because it switches between modes (scroll mode to basic-board mode), also referred to as a modal shift, [and] returns the user to the basic Board screen." PO Resp. 74. Patent Owner contends that "a [person of ordinary skill in the art] would not understand this mode switching to be a re-centering command." *Id.* (citing Ex. 2169 ¶ 170).

Patent Owner's contentions are not persuasive. There is no dispute, and we agree, that TSE teaches manual re-centering by switching between modes. *See* Ex. 1007, 116 (discussing switching from the "Scrolling Screen" to the "Basic Board Screen" by "[u]se the mouse to click the 'H' (Home) button on the Board Screen"); *see also id.* at 110 (further explaining operation of the "home button," noting that "[c]licking [the home] button with the mouse after the board information has been scrolled causes the screen to return to the Basic Board Screen, with the board display center price at the center"). The fact that re-centering is achieved by switching between modes does not change the fact that this is a re-centering command. The testimony from Patent Owner's declarant, Mr. Thomas, is also unpersuasive because it, too, is not tied to any requirement in the claims, and

instead requires re-centering without changing modes. The claims simply require "re-centering," and are silent as to whether a mode must remain the same. *See* Ex. 2169 ¶ 170.

For the reasons set forth above, we find that "[c]licking [the home] button with the mouse after the board information has been scrolled causes the screen to return to the Basic Board Screen, with the board display center price at the center" in TSE teaches the features recited in claim 11.

e. Additional Dependent Claims

Petitioner additionally challenges claims 2–8, 12–25, 27, and 28 as being unpatentable over TSE and Belden. Pet. 73–75, 77–80. We have reviewed Petitioner's challenges to those claims, which Patent Owner does not dispute, as well as the evidence supporting those challenges.

We adopt Petitioner's findings and rationale, and are persuaded that the features recited in those claims are taught by the combination of TSE, Belden, and Togher and that one skilled in the art would have combined those teachings.

3. Secondary Considerations

As part of our obviousness analysis, we consider the arguments and corresponding evidence submitted by Patent Owner regarding secondary considerations of non-obviousness. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). To be relevant, secondary evidence of non-obviousness must be commensurate in scope with the claimed invention. *In re Kao*, 639 F.3d 1057, 1068 (Fed. Cir. 2011). There must be a nexus between the merits of the claimed invention and the evidence of secondary considerations. *GPAC*, 57 F.3d at 1580. "Nexus" is a legally and factually sufficient connection between the objective evidence and the claimed

invention, such that the objective evidence should be considered in determining non-obviousness. *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1392 (Fed. Cir. 1988).

Patent Owner contends that "there is a mountain of objective indicia of nonobviousness that proves the claimed invention is not obvious." PO Resp. 36.

a. MD Trader

Patent Owner contends that "MD Trader [is] the commercial embodiment of the invention" (PO Resp. 43), and refers to MD Trader throughout its discussion of secondary considerations of non-obviousness (*id.* at 37–60). As Petitioner notes, however, "the [Patent Owner Response] fails to explain how MD Trader embodies the claims and doesn't even identify which claims (if any) MD Trader embodies." Pet. Reply 19.

The only discussion provided in Patent Owner's Response as to how MD Trader includes the features recited in the challenged claims is a general allegation noted above that "MD Trader [is] the commercial embodiment of the invention . . . Ex.2169, ¶ 95 (citing Ex.LL [Ex.2233] to explain how each claim element is present in MD Trader)." PO Resp. 43. Initially, we note that such an incorporation by reference is inappropriate, as Patent Owner's Response fails to explain how MD Trader includes the features of the claims. *See* 37 C.F.R. § 42.6(a)(3) ("Arguments must not be incorporated by reference from one document into another document.").

Nevertheless, and as explained below, Patent Owner's contentions regarding secondary considerations fail even if we assume that MD Trader includes the claim elements (the features of claims 1, 9, 10, and 11 noted in Exhibit 2233).

b. Unrecognized Problems

Patent Owner contends that "[t]he inventive GUI tool solved problems presented by conventional GUIs," which "exhibited problems with speed and accuracy." PO Resp. 36. Patent Owner, however, offers no persuasive authority for the proposition that "unrecognized problems" is a secondary consideration of non-obviousness. *See id.* at 37 (citing *Leo Pharm. Prods., Ltd. v. Rea*, 726 F.3d 1346, 1353–54, 1357 (Fed. Cir. 2013)). An inventor's discovery of a previously unrecognized problem is generally accounted for in the analysis of the scope of the prior art and a motivation to combine prior art elements, rather than it being a secondary consideration of non-obviousness. *See Leo Pharm. Prods.*, 726 F.3d at 1353–54; *see also S. Alabama Med. Sci. Found. v. Gnosis S.P.A.*, 808 F.3d 823, 827 (Fed. Cir. 2015). We note that Patent Owner's contentions regarding "unrecognized problems" are not tied to any of the asserted references or rationale discussed above with respect to the challenges to claims 1–28 under § 103.

Accordingly, these contentions are not persuasive of non-obviousness.

c. Unexpected Results

Patent Owner contends that "[u]nexpected superior properties from an invention support the conclusion that the invention was not obvious to a [person of ordinary skill in the art]." PO Resp. 37 (citing *Procter & Gamble Co. v. Teva Pharm. USA, Inc.*, 566 F.3d 989, 997 (Fed. Cir. 2009); *In re Soni*, 54 F.3d 746, 750 (Fed. Cir. 1995)). As the authority cited by Patent Owner explains,

> The basic principle behind [unexpected results supporting non-obviousness] is straightforward—that which would have been surprising to a person of ordinary skill in a particular art would not have been obvious. The principle applies most often to the

> less predictable fields, such as chemistry, where minor changes in a product or process may yield substantially different results.

In re Soni, 54 F.3d at 750.

Patent Owner contends that "[a]lthough the invention achieved Brumfield's intended benefit of increasing the likelihood that the user would get his/her desired price, this was not a problem that was widely appreciated by others." PO Resp. 38. Patent Owner further contends that "the invention provided several other *unexpected* benefits as well." *Id.* at 38. This is not persuasive of "unexpected results."

Patent Owner does not allege that the GUI operated in some unexpected manner. Indeed, it is hard to imagine computer code (i.e., a set of instructions) operating in an unexpected manner, particularly when the '411 patent describes the programming associated with the GUI as insignificant. *See, e.g.*, Ex. 1001, 4:64–5:3 (explaining that "present invention processes [price, order, and fill] information and maps it through simple algorithms and mapping tables to positions in a theoretical grid program" and "[t]he physical mapping of such information to a screen grid can be done by any technique known to those skilled in the art").

Accordingly, we are not persuaded by Patent Owner's contentions regarding unexpected results.

d. Initial Skepticism

Patent Owner contends that "MD Trader was received with skepticism by TT's own sales personnel." PO Resp. 40 (citing Ex. 2169 ¶¶ 97–98, 101; Ex. 2211, 715:19–716:18; Ex. 2173 ¶¶ 21–23; Ex. 2170 ¶¶ 21–27; Ex. 2171 ¶ 40; Ex. 2173 ¶ 16). Initially, we reiterate that "[a]rguments must not be incorporated by reference from one document into another document." 37 C.F.R. § 42.6(a)(3).

Patent Owner's arguments related to "initial skepticism" are based primarily on the premise that "a [person of ordinary skill in the art] would have rejected outright a price axis with relative movement." PO Resp. 41. Those contentions are unpersuasive. As noted above, TSE expressly teaches this feature. To the extent the other contentions related to "initial skepticism" are directed to traders simply being resistant to change, generally, those contentions are also unpersuasive. *See, e.g., id.* at 42 (discussing profitable traders being hesitant towards *any* type of change because change can alter their confidence). Those contentions are not tied in any meaningful way to the features of the claims.

That traders would have been resistant to accept anything different is not persuasive of non-obviousness.

e. Commercial Success

Patent Owner contends that MD Trader "became a huge commercial success." PO Resp. 43. As noted above, Patent Owner does not explain, in its Patent Owner Response, how MD Trader embodies the claimed invention. Even if MD Trader includes each feature recited in the claims, "[e]vidence of commercial success . . . is only significant if there is a nexus between the claimed invention and the commercial success." *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1311–12 (Fed. Cir. 2006). In some instances, there may be a presumption of nexus. *See WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1329 (Fed. Cir. 2016) ("[T]here is a presumption of nexus for objective considerations when the patentee shows that the asserted objective evidence is tied to a specific product and that product 'is the invention disclosed and claimed in the patent.'" (citation omitted)).

Patent Owner does not contend that a presumption of nexus is appropriate in this case. In fact, the Patent Owner Response is silent as to any nexus between the alleged commercial success and the claimed invention. Petitioner argues there is no presumption of nexus, and that Patent Owner has not established the requisite nexus. Pet. Reply 19–21, 23. We agree with Petitioner.

Patent Owner admits that MD Trader is part of a suite of software and not sold separately. Tr. 72:18–23. A limited exception to the presumption of nexus exists where the patented invention is only a component of the product to which the asserted objective considerations are tied. *Demaco*, 851 F.2d at 1392. Here, because MD Trader is a component of a suite of software, Patent Owner enjoys no presumption of nexus. Patent Owner fails to offer any meaningful discussion of nexus in its Patent Owner Response, other than a general assertion at the end of its discussion that "MD Trader was successful due to the patented features." PO Resp. 46. Patent Owner's contentions regarding commercial success fail for this reason alone.

Even if we were to assume nexus, Petitioner persuasively rebuts that presumption. Petitioner responds, for example, that Patent Owner's increase in sales could easily have been the result of increases in the market itself during the relevant time period. Pet. Reply 25. Petitioner explains that "in the U.S., both the trading volume and the number of actively traded commodities contracts exploded in the early-to-mid 2000s" and "[t]rading volume increased six-fold; the number of actively traded contacts increased five-fold." *Id.* (citing Ex. 1045, 35–36). Exhibit 1045 is a document from the Commodity Futures Trading Commission (CFTC), and pages 35–36 support the trading volume increase alleged by Petitioner.

Petitioner also points to several unclaimed features being responsible for the alleged commercial success. Pet. Reply 21–22. In support of this contention, Petitioner cites Patent Owner's own testimony from traders in the industry (Ex. 2223[14]), noting, for example, that "Grisafi identifies . . . one-click re-centering as [a] key feature[]," "McElveen identifies speed, precision, and one-click re-centering as . . . key features," and "Beattie identifies 'set[ting] up multiple MD Trade windows side-by-side on their desktop computer screens' to help 'traders to visualize the entire market easily and fast' ('multi-screen visualization')." Pet. Reply 21–22 (citing Ex. 2223, 2–4, 40). Patent Owner acknowledges that, "in this industry . . . *anything* that is even remotely appreciated as providing an edge is tried and spreads quickly if successful." PO Resp. 43 (emphasis added).

We additionally note, as Petitioner points out (Pet. Reply 20), that the evidence provided by Patent Owner in its claim chart corresponds to a 2014 version of MD Trader (citing the X_TRADER® Version 7.12.X User Manual, with a "document version" date of March 5, 2014). Ex. 2233, 1–6, 11, 13–14, 16. The sales information for MD Trader discussed in the Patent Owner Response is from the period from 1996–2006. PO Resp. 45. Patent Owner offers no explanation, in its Patent Owner Response, as to how the product on sale at that time period corresponds to the claimed invention or to the MD Trader from 2014.

Furthermore, Patent Owner does not provide information regarding sales volume or market share as compared to providers of competing products. Rather, Patent Owner only alleges an increase in its own sales,

[14] Petitioner mistakenly cites to Exhibit 2233 in its Reply. *See* Pet. Reply 21–22.

without reference to the market. *See id.* This information, without market share information, is only weak evidence, if any, of commercial success. *See In re Applied Materials*, 692 F.3d 1289, 1299 (Fed. Cir. 2012).

f. Copying

Patent Owner additionally contends that the invention was widely copied by others. PO Resp. 47–53. "[C]opying requires the replication of a specific product." *Iron Grip Barbell Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1325 (Fed. Cir. 2004).

Patent Owner refers to products allegedly including the claimed features, as well as consent judgments where others acknowledged infringement. PO Resp. 47–52. This is not persuasive evidence of copying. *See Iron Grip*, 392 F.3d at 1325 ("Not every competing product that arguably falls within the scope of a patent is evidence of copying. Otherwise every infringement suit would automatically confirm the nonobviousness of the patent.").

Although Patent Owner repeatedly alleges that others copied the invention, there is no explanation, in the Patent Owner Response, to support those alleged copiers attempting to replicate specific products. Patent Owner has failed to establish widespread copying.

g. Industry Praise

Patent Owner contends that widespread praise in the industry also supports non-obviousness. PO Resp. 53–54. In support of its "widespread praise" contentions, Patent Owner notes, for example, that the invention was characterized as a "unique vision," "ingenious," "paradigm change," "revolutionary… not just an incremental improvement," "outside of the box," "huge innovation," "significant advance," "determining factor in our

success," "radically different," "far superior," "very significant departure [from the prior art]," "invaluable tool," "stroke of genius," "so significant that I cannot put a price on its value." *Id.* Patent Owner proceeds to conclude that "[e]ach one of these individual's praise was directed to the specific claimed features." *Id.* at 54.

As with commercial success, however, evidence of industry praise is only relevant when it is directed to the merits of the invention claimed. *See Ormco*, 463 F.3d at 1311. Patent Owner offers no explanation, in its Patent Owner Response, as to how any of the alleged praise is due to specific features that are present in the claims.

h. Industry Acquiescence

Patent Owner contends that non-obviousness is further shown by "widespread acquiescence and acceptance in the industry," with "many licenses and consent judgments acknowledging infringement and validity." PO Resp. 55. Although licenses taken under the patent in suit may constitute evidence of non-obviousness, we attribute little weight to such evidence because Patent Owner does not demonstrate "a nexus between the merits of the invention and the licenses of record." *GPAC*, 57 F.3d at 1580 (internal quotation and citations omitted). Furthermore, as Petitioner notes, litigation-induced licensing, alone, does not establish non-obviousness. *See* Pet. Reply 25 (citing *EWP Corp. v. Reliance Universal Inc.*, 755 F.2d 898, 907–8 (Fed. Cir. 1985)).

We note that Patent Owner's contention regarding licensing to traders is more related to commercial success than licensing in the context of secondary considerations of non-obviousness. *See* PO Resp. 55 (discussing traders purchasing software licenses, the MD Trader product).

i. Failure of Others

Patent Owner additionally contends that the alleged failure of others to make the invention supports non-obviousness. PO Resp. 56–58. Patent Owner's contentions on this issue are not directed to any particular attempt and failure of others to make the claimed invention. *See id.* Indeed, it is difficult to image that would be the case with the claimed invention, as the '411 patent explains that there is nothing special about the programming required. Ex. 1001, 4:64–5:3.

Rather, Patent Owner's contentions are directed to the allegation that the claimed invention did not exist before arrived at by Patent Owner. PO Resp. 56–58. This does not establish non-obviousness. *Iron Grip*, 392 F.3d at 1325 ("Absent a showing of long-felt need or the failure of others, the mere passage of time without the claimed invention is not evidence of nonobviousness."). Patent Owner does not allege any long-felt need existed. In fact, Patent Owner advances the opposite position, that the problem was not even recognized by others. *See* PO Resp. 57 ("Prior to the invention, [persons of ordinary skill in the art] failed to even appreciate the problems.").

j. Other Evidence

Patent Owner additionally cites another party's attempt to invalidate the '411 patent as evidence of non-obviousness. PO Resp. 58–59. Patent Owner concludes that party's "actions show that experts in the field recognized that the prior art, including the TSE, was insufficient to render the invention obvious." *Id.* at 59. We are apprised of no persuasive reason as to why those contentions establish non-obviousness in this proceeding.

4. Weighing Secondary Considerations against Obviousness

As explained above, Patent Owner has not established the majority of its alleged secondary considerations of non-obviousness. Weighing the evidence before us, Patent Owner's contentions regarding secondary considerations of non-obviousness do not outweigh the strong case of obviousness discussed above. For example, as noted above, TSE teaches each feature of claim 1 other than the "single action" setting and sending, which is taught by Belden, and the default quantity, which is taught by Togher. As noted above, Belden itself, for example, provides motivation for the proposed modifications to TSE (e.g., increased speed).

Accordingly, we are persuaded that Petitioner has established, by a preponderance of the evidence, that claims 1–28 are unpatentable under 35 U.S.C. § 103.[15]

F. Due Process

Patent Owner alleges due process issues in connection with alleged evidence of non-obviousness. PO Resp. 77–83. Specifically, Patent Owner references documents from the related district court proceeding. *See, e.g.*, *id.* at 77–79. Patent Owner references our order (Paper 67, "the discovery order") in connection with its due process arguments. *Id.* at 79. As noted in the discovery order, Patent Owner failed to explain why some of the documents sought could be obtained only from Petitioner. Paper 67, 9–10.

[15] Patent Owner alleges that Petitioner has failed to establish a prima facie case of obviousness because various portions of testimony from Mr. Román and Mr. Rho address only portions of various claims. PO Resp. 74–75. Patent Owner offers no explanation however, as to how any of the alleged deficiencies in testimony affect any specific challenge to any specific claim. *See id.* (including only general allegations).

Furthermore, the discovery order also explained that much of the information sought by Patent Owner was already in Patent Owner's possession and potentially could have been used in our proceedings had Patent Owner sought relief from the district court in the related proceeding (the information sought for use in this proceeding was subject to a protective order in the related district court proceeding). *Id.* at 10.

We do not discern any due process issues.

G. Motions to Exclude

1. Patent Owner's Motion to Exclude

Patent Owner moves to exclude Exhibit 1006 (TSE), the transcript of Mr. Kawashima's deposition (Ex. 1010), and portions of Exhibits 1051 and 1052. Paper 109 ("PO MTE"). Exhibit 1006 is the Japanese version of the TSE document. *See, e.g.*, Paper 128, 1. Patent Owner seeks to exclude Exhibit 1006 because it has not been authenticated per Rule 901 of the Federal Rules of Evidence (FRE). PO MTE 1–8. Patent Owner recognizes that Petitioner relies on Mr. Kawashima's testimony (Ex. 1010) to authenticate TSE, but argues that his testimony is hearsay. PO MTE 2–6. Patent Owner, however, acquiesces that Mr. Kawashima's testimony is not hearsay because he was cross-examined. Patent Owner also argues that Mr. Kawashima's testimony raises more doubt than it resolves. *Id.* at 6–8.

Patent Owner's motion with respect to the exclusion of TSE (Exhibit 1006) and the transcript of Mr. Kawashima's deposition (Exhibit 1010) falls short of what is required in a motion. The statement of the precise relief requested is lacking. For example, Patent Owner argues that TSE and Mr. Kawashima's deposition testimony should be excluded, but also argues that Mr. Kawashima's deposition testimony falls under the FRE 807 hearsay

exception, and, therefore, is admissible. *See, e.g.*, PO MTE 2–6. We understand Patent Owner's position to be that if we exclude any of Patent Owner's evidence, then we also should exclude Exhibits 1006 and 1010 from being admitted. *Id.* at 6 ("To the extent the Board excludes any of Patent Owner's evidence from district court litigation, which it should not, the Board should likewise exclude the 2005 Kawashima deposition transcript.").

We are not persuaded by Patent Owner's arguments. Patent Owner has not met its burden to show that either Exhibit 1010 or Exhibit 1006 should be excluded from the record. In fact, Patent Owner appears to concede that Mr. Kawashima's testimony is not hearsay because it falls under an exception to the hearsay rule. Nor are we persuaded by Patent Owner's argument that the deposition testimony of Mr. Kawashima (Ex. 1010) raises more doubt than it resolves. PO MTE 6–8. In essence, Patent Owner's arguments go to the weight we should give Mr. Kawashima's testimony, which is not a proper argument for a motion to exclude. For all of these reasons, we are not persuaded that either Exhibit 1010 or 1006 should be excluded from the record.

Patent Owner seeks to exclude pages 57–58 of Exhibit 1051 (the cross-examination testimony of Mr. Olsen) and pages 393–397 of Exhibit 1052 (the cross examination testimony of Mr. Thomas). PO MTE 8–15. We did not and need not consider the specific pages objected to in Exhibits 1051 and 1052. We have determined that Petitioner has demonstrated, by a preponderance of the evidence, that the challenged claims are unpatentable without considering the specific objected to pages or the portion of Petitioner's Reply that relies on such evidence.

Accordingly, we *deny* Patent Owner's Motion to Exclude with respect to Exhibits 1006 and 1010, and *dismiss* Patent Owner's Motion to Exclude with respect to Exhibits 1051 and 1052 as moot.

2. Petitioner's Motion to Exclude

Petitioner moves to exclude various ones of Patent Owner's Exhibits. Paper 111 ("Pet. MTE"). Because the outcome of this trial does not change based on whether or not we exclude those exhibits, we *dismiss* Petitioner's Motion to Exclude as moot.

CONCLUSION

For the foregoing reasons, we determine that Petitioner has shown, by a preponderance of the evidence, that claims 1–28 of the '411 patent are patent-ineligible under 35 U.S.C. § 101 and that those claims are unpatentable under 35 U.S.C. § 103.

ORDER

For the reasons given, it is:

ORDERED that claims 1–28 of the ’411 patent are patent-ineligible under 35 U.S.C. § 101;

FURTHER ORDERED that claims 1–28 of the ’411 patent are unpatentable under 35 U.S.C. § 103;

FURTHER ORDERED that Patent Owner’s Motion to Exclude Evidence is *denied* with respect to Exhibits 1006 and 1010 and *dismissed* with respect to Exhibits 1051 and 1052;

FURTHER ORDERED that Petitioner’s Motion to Exclude Evidence is *dismissed*; 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.

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Paper No. 138
Entered: March 3, 2017

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

IBG LLC,
INTERACTIVE BROKERS LLC, TRADESTATION GROUP, INC.
TRADESTATION SECURITIES, INC.,
TRADESTATION TECHNOLOGIES, INC., and IBFX, INC.,
Petitioner,

v.

TRADING TECHNOLOGIES INTERNATIONAL, INC.,
Patent Owner.

Case CBM2015-00181
Patent No. 7,676,411 B2

Before SALLY C. MEDLEY, MEREDITH C. PETRAVICK, and JEREMY M. PLENZLER, *Administrative Patent Judges*.

PLENZLER, *Administrative Patent Judge*, dissenting-in-part.

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

I agree that the ’411 patent is directed to a covered business method and that claims 1–28 are unpatentable under 35 U.S.C. § 103. I do not join the majority in the determination that claim 1 does not solve a technical problem using a technical solution. Such a determination is not necessary for the ’411 patent to be a covered business method patent, as we are persuaded that at least claim 1 of the ’411 patent does not recite a technological feature that is novel and unobvious over the prior art. *See Versata dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1326–27 (Fed. Cir. 2015). With respect to the issue of claims 1–28 being patent-ineligible under 35 U.S.C. § 101, however, I respectfully dissent.

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, 713–14 (Fed. Cir. 2014). The claims fit within one of the four statutorily provided categories of patent-eligibility. For example, there is no dispute that claim 1 fits within the process category.

Section 101 “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 omitted)). In *Alice*, the Supreme Court reiterated the framework set forth previously in *Mayo Collaborative Services v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1293 (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*, 134 S. Ct. at 2355. The first step in the analysis is to "determine whether the claims at issue are directed to one of those patent-ineligible concepts." *Id.*

There is no definitive rule to determine what constitutes an "abstract idea." Rather, the Federal Circuit has explained that "both [it] and the Supreme Court have found it sufficient to compare claims at issue to those claims already found to be directed to an abstract idea in previous cases." *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334 (Fed. Cir. 2016); *see also Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1294 (Fed. Cir. 2016) (explaining that, in determining whether claims are patent-eligible under § 101, "the decisional mechanism courts now apply is to examine earlier cases in which a similar or parallel descriptive nature can be seen—what prior cases were about, and which way they were decided").

The Federal Circuit issued a decision determining that the claims from U.S. Patent Nos. 6,766,304 ("the '304 patent") and 6,772,132 ("the '132 patent") are patent eligible under § 101. *Trading Techs. Int'l, Inc.* v. *CQG, Inc.*, No. 2016-1616, 2017 WL 192716 (Fed. Cir. Jan. 18, 2017). More specifically, the Federal Circuit determined that the claims in the '304 and '132 patents are not directed to an abstract idea. *Id.* at *3. By virtue of a number of continuation filings, U.S. Patent No. 7,676,411 (Ex. 1001, "the '411 patent") is ultimately a continuation of the application resulting in the '132 and '304 patents (Application No. 09/590,692).[16]

In related Board proceedings addressing the '304 and '132 patents, we followed the guidance from the Federal Circuit decision noted above and

[16] The '304 patent resulted from a divisional filing of that application.

determined the claims in those patents to be patent eligible. CBM2015-00161, Paper 129, slip op. at 4–6 (PTAB February 17, 2017); CBM2015-00182, Paper 129, slip op. at 18, 53–54 (PTAB February 28, 2017). The claims at issue before us are remarkably similar to those in the ’304 and ’132 patents. The claims are perhaps closest to those in the ’304 patent, and with respect to the question of whether the claims before us are directed to an abstract idea, there is no meaningful difference between the claims in the ’411 patent and those in the ’304 patent. Claim 1 from the ’304 patent and claim 1 from the ’411 patent are reproduced below to illustrate the similarities.

Claim 1 of the ’304 patent recites:

> 1. A method for displaying market information relating to and facilitating trading of a commodity being traded in an electronic exchange having an inside market with a highest bid price and a lowest ask price on a graphical user interface, the method comprising:
>
> dynamically displaying a first indicator in one of a plurality of locations in a bid display region, each location in the bid display region corresponding to a price level along a common static price axis, the first indicator representing quantity associated with at least one order to buy the commodity at the highest bid price currently available in the market;
>
> dynamically displaying a second indicator in one of a plurality of locations in an ask display region, each location in the ask display region corresponding to a price level along the common static price axis, the second indicator representing quantity associated with at least one order to sell the commodity at the lowest ask price currently available in the market;
>
> displaying the bid and ask display regions in relation to fixed price levels positioned along the common static price axis such that when the inside market changes, the price levels

along the common static price axis do not move and at least one of the first and second indicators moves in the bid or ask display regions relative to the common static price axis;

displaying an order entry region comprising a plurality of locations for receiving commands to send trade orders, each location corresponding to a price level along the common static price axis; and

in response to a selection of a particular location of the order entry region by a single action of a user input device, setting a plurality of parameters for a trade order relating to the commodity and sending the trade order to the electronic exchange.

'304 patent, 12:35–13:3.

Claim 1 of the '411 patent recites:

1. A method of displaying market information relating to and facilitating trading of a commodity being traded on an electronic exchange, the method comprising:

receiving, by a computing device, market information for a commodity from an electronic exchange, the market information comprising an inside market with a current highest bid price and a current lowest ask price;

displaying, via the computing device, a bid display region comprising a plurality of graphical locations, each graphical location in the bid display region corresponding to a different price level of a plurality of price levels along a price axis;

displaying, via the computing device, an ask display region comprising a plurality of graphical locations, each graphical location in the ask display region corresponding to a different price level of the plurality of price levels along the price axis;

dynamically displaying, via the computing device, a first indicator representing quantity associated with at least one trade order to buy the commodity at the current highest bid price in a first graphical location of the plurality of graphical locations in the bid display region, the first graphical location

in the bid display region corresponding to a price level associated with the current highest bid price;

upon receipt of market information comprising a new highest bid price, moving the first indicator relative to the price axis to a second graphical location of the plurality of graphical locations in the bid display region, the second graphical location corresponding to a price level of the plurality of price levels associated with the new highest bid price, wherein the second graphical location is different from the first graphical location in the bid display region;

dynamically displaying, via the computing device, a second indicator representing quantity associated with at least one trade order to sell the commodity at the current lowest ask price in a first graphical location of the plurality of graphical locations in the ask display region, the first graphical location in the ask display region corresponding to a price level associated with the current lowest ask price;

upon receipt of market information comprising a new lowest ask price, moving the second indicator relative to the price axis to a second graphical location of the plurality of graphical locations in the ask display region, the second graphical location corresponding to a price level of the plurality of price levels associated with the new lowest ask price, wherein the second graphical location is different from the first graphical location in the ask display region;

displaying, via the computing device, an order entry region comprising a plurality of graphical areas for receiving single action commands to set trade order prices and send trade orders, each graphical area corresponding to a different price level along the price axis; and

selecting a particular graphical area in the order entry region through a single action of a user input device to both set a price for a trade order and send the trade order having a default quantity to the electronic exchange.

Ex. 1001, 12:23–13:16.

As seen above, the claims in the ’304 patent and ’411 patent each are directed to “[a] method for displaying market information relating to and facilitating trading of a commodity being traded in an electronic exchange” and recite “dynamically displaying” a “first indicator” in a “bid display region” and a “second indicator” in an “ask display region” along a “price axis.” Both claims also require “an order entry region” including areas along the “price axis” for receiving “single action” commands to send trade orders and specify that the “single action” of a user input device selecting one of those areas sets parameters for the trade order and sends the trade order to the electronic exchange.

Both claims also require relative movement between the “indicators” and the “price axis.” The main difference between the claims is the manner in which the relative movement is defined. Claim 1 of the ’304 patent recites that the “price axis” is a “static price axis” having “price levels” that “do not move and at least one of the first and second indicators moves in the bid or ask display regions relative to the common static price axis.” Claim 1 of the ’411 patent defines relative movement of its price axis in a slightly different manner, reciting that “upon receipt of market information comprising a new highest bid price, moving the first indicator relative to the price axis” and “upon receipt of market information comprising a new lowest ask price, moving the second indicator relative to the price axis.” Simply stated, the main difference is whether the “price axis” is “static” (’304 patent), or requires relative movement of the indicators while still being allowed to move itself (’411 patent).

As noted above, the Federal Circuit already determined the claims of the ’304 patent are not directed to an abstract idea and we followed that

guidance in our earlier decision addressing that patent. With respect to the question of whether the claims before us are directed to an abstract idea, I do not think allowing movement of the price axis, rather than requiring the price axis to remain static, is enough to take something that was already determined not to be abstract and cast it into the realm of abstractness.

Accordingly, I would follow the Federal Circuit's guidance from *Trading Technologies*, as we did in CBM2015-00161 and CBM2015-00182, and determine that claims 1–28 of the '411 patent are eligible under § 101 because they are not directed to an abstract idea.[17]

[17] To the extent a different record in this proceeding could have some bearing on the issue of whether these claims are directed to an abstract idea, I note the lack of reliance by Petitioner on specific facts in this record having such an effect. *See* Pet. 16–17. For example, in this proceeding Petitioner's discussion of the alleged abstract idea to which the claims are directed and supporting evidence is essentially identical to that in CBM2015-00182. *Compare* Pet. 16–17, *with* CBM2015-00182, Paper 7, 16–17.

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