

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

IBG LLC and INTERACTIVE BROKERS LLC,
Petitioner,

V.

TRADING TECHNOLOGIES INTERNATIONAL, INC.,
Patent Owner.

Case CBM2016-00009
Patent No. 7,685,055 B2

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

PETRAVICK, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
Covered Business Method Patent Review
35 U.S.C. § 328(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

A. Background

IBG LLC and Interactive Brokers LLC¹ (collectively, “Petitioner”) filed a Petition (Paper 5, “Pet.”) on October 23, 2015 that requests review under the transitional program for covered business method patents of U.S. Patent No. 7,685,055 B2 (Ex. 1001, “the ’055 patent”). Petitioner challenges the patentability of claims 1–19 (“the challenged claims”) of the ’055 patent under 35 U.S.C. §§ 101 and 103. On April 28, 2016, we instituted a covered business method patent review on the following grounds:

Ground	Prior Art	Challenged Claims
§ 101	n/a	1–19
§ 103	TSE ²	1, 3, 4, 6–15 and 17–19
§ 103	TSE and Gutterman ³	2 and 5
§ 103	TSE and Belden ⁴	16

Paper 20 (“Institution Decision” or “Inst. Dec.”).

Thereafter, Trading Technologies International, Inc. (“Patent Owner”) filed a Patent Owner’s Response on July 21, 2016 (Paper 32, “PO. Resp.”)

¹ This proceeding was terminated with respect to CQG, INC. and CQGT, LLC and they are no longer petitioners in this proceeding. See Paper 16.

² Tokyo Stock Exchange Operation System Division, FUTURES/OPTION PURCHASING SYSTEM TRADING TERMINAL OPERATION GUIDE (1998) (Ex. 1008).

³ Gutterman et al., U.S. Patent No. 5,297,031 (issued Mar. 22, 1994) (Ex. 1006).

⁴ Belden et al., WO 90/11571 (published Oct. 4, 1990) (Ex. 1010).

and Petitioner filed a Reply (Paper 42, “Pet. Reply”) to Patent Owner’s Response.

Patent Owner filed a Motion for Observations (Paper 52, “PO Mot. for Observations”) and Petitioner filed a response (Paper 54) to Patent Owner’s Motion for Observations.

Petitioner filed a Motion to Exclude (Paper 49, “Pet. Mot. to Exclude”), and Patent Owner filed an Opposition (Paper 57) to Patent Owner’s Motion. Petitioner filed a Reply (Paper 60) in support of its Motion.

Patent Owner filed a Motion to Exclude (Paper 59, “PO Mot. to Exclude”) and Petitioner filed an Opposition (Paper 55) to Patent Owner’s Motion. Patent Owner filed a Reply (Paper 61) in support of its Motion.

We held a hearing of this case on January 6, 2017. Paper 70 (“Tr.”).

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 1–19 of the ’055 patent are patent ineligible under 35 U.S.C. § 101.

B. Related Matters

The ’055 patent is the subject of numerous related U.S. district court proceedings. Pet. 2–3; Paper 8, 2–8; Paper 17, 1.

The ’055 patent was the subject of a petition for covered business method patent review in *TD Ameritrade Holding Corp. v. Trading Technologies International, Inc.*, CBM2014-00137 (PTAB). In CBM2014-

00137, covered business method patent review terminated prior to entry of a final written decision, due to settlement between the parties.

C. The '055 Patent

The '055 patent is titled “System and Method for Automatic Re-positioning of Market Information in a Graphical User Interface,” and issued March 23, 2010, from Application No. 11/417,547 filed May 3, 2006. Ex. 1001, 1.

The '055 patent discloses that many exchanges throughout the world use electronic trading. *Id.* at 1:36–38. Exchange participants use specialized interactive trading screens to monitor positions on the exchange. *See Id.* at 2:3–6. “The bids and asks in the market make up the market data and everyone logged on to trade can receive this information if the exchange provides it.” *Id.* at 2:27–28.

The '055 patent discloses a graphical user interface (“GUI”) displaying information related to a commodity and a method of automatically re-positioning the information. *Id.* at Abstract. The '055 patent’s Figure 16A is reproduced below.

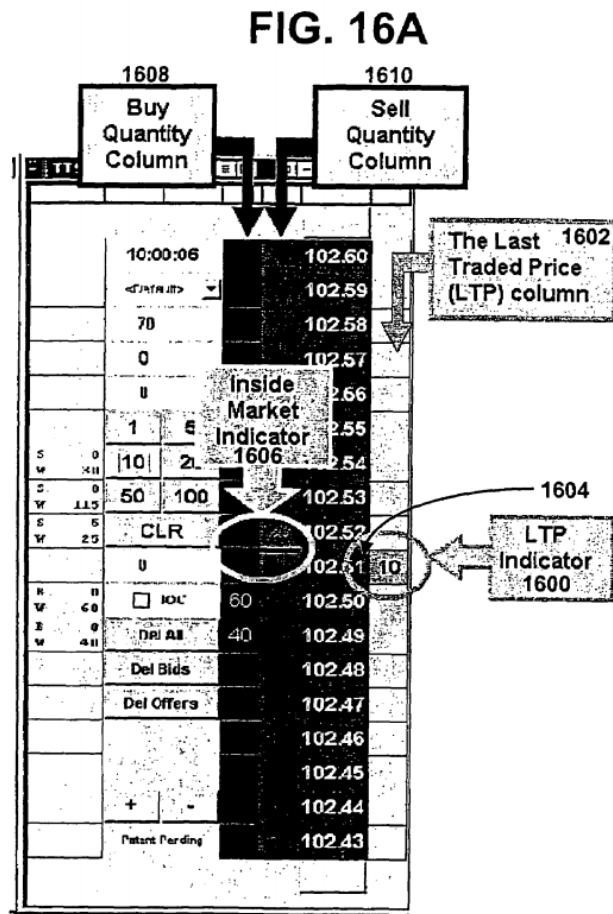


Figure 16A depicts the GUI of the '055 patent. The GUI includes a plurality of columns, including a static price axis, which includes a plurality of price values for the commodity, such as “102.60.” *Id.* at Fig. 16A; 7:67–8:18. Columns 1608 and 1610 are aligned with the static price axis and dynamically display buy (i.e., bid) quantities and sell (i.e., ask) quantities, respectively, for the corresponding price values of the static price axis. *Id.* at Fig. 16A; 26:10–11. Column 1602 displays the last traded price (“LTP”), and the inside market (i.e., the highest buy price and lowest sell price at which there is quantity currently in the market) is marked with inside market indicator 1606, which is a solid line spanning columns 1608 and 1610. *Id.* at Fig. 16A; 26:3–14.

The GUI can re-position a designated item of interest, such as the LTP or inside market indicator, in the display. *Id.* at 26:4–45. For example, if the LTP or inside market moves a designated number of cells away from the top or bottom of the display screen, the display, including the static price axis, is repositioned so that LTP or inside market is centered on the display. *See Id.* Manual re-positioning can also be used in conjunction with automatic re-positioning. *Id.* at 26:33–37.

D. Illustrative Claim

Claims 1 and 17 of the '055 patent are independent. Claim 1 recites a method, and claim 17 recites a corresponding computer readable medium. Claim 1 of the '055 patent is illustrative of the challenged claims and is reproduced below.

1. A method for re-positioning a static price axis on a graphical user interface for displaying market information of a commodity being traded at an electronic exchange, the method comprising:

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

displaying a first plurality of price levels along a static price axis on a graphical user interface of a display device associated with the computing device, where the first plurality of price levels range from a lowest value to a highest value along the static price axis;

in response to an input command received via an input device associated with the computing device, adjusting the first plurality price levels among a range of price levels to an adjusted plurality of price levels including the first plurality of price levels;

displaying a bid and ask display region on the graphical user interface, the bid and ask display region comprising a plurality of locations corresponding to the first plurality of price levels displayed along the static price axis, wherein each location corresponds to one of the first plurality of price levels, and wherein a number of the plurality of locations changes according to adjusting the first plurality of price levels;

displaying a first indicator representing a quantity associated with the current highest bid price at a first location in the plurality of locations of the bid and ask display region, wherein the first indicator ascends or descends the static price axis as changes in the current highest bid price occur as a result of each of the plurality of price levels along the static price axis not changing positions on the graphical user interface unless a reposition command is received;

displaying a second indicator representing a quantity associated with the current lowest ask price at a second location in the plurality of locations of the bid and ask display region, wherein the second indicator ascends or descends the static price axis as changes in the current lowest ask price occur as a result of each of the plurality of price levels along the static price axis not changing positions on the graphical user interface unless the reposition command is received;

receiving the reposition command to reposition the static price axis when a designated price is within a designated number of price levels from the lowest value or the highest value along the static price axis; and

responsive to receiving the reposition command, automatically re-positioning the static price axis on the graphical user interface such that a current inside market price is displayed at a new desired location.

II. ANALYSIS

A. Claim Construction

In a covered business method patent review, the Board interprets claim terms in an unexpired patent according to the broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.300(b); *see Cuozzo Speed Techs. LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard). Under that standard, and absent any special definitions, we give claim terms their ordinary and customary meaning, as they would be understood by one of ordinary skill in the art at the time of the invention. *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).

i. “static price axis”

Petitioner argues that the ’055 patent defines “static price axis” as “a price column where prices ‘do not normally change positions unless a re-centering command is received.’” Pet. 16–17 (citing Ex. 1001, 8:16–18; Ex. 1003 ¶ 71).

Patent Owner proposes two “clarifications” to this definition. PO Resp. 40–41. First, Patent Owner argues that “the construction requires that the price levels do not change positions unless a re-centering *or repositioning command* is received” to be consistent with the claim language itself. *Id.* at 40. Second, Patent Owner argues that “the construction should [not] be limited to a price column, but should refer to a reference line.” *Id.*

Additionally, Patent Owner argues that a price axis is “a reference line, against which bids/ask[s] are plotted, that does not skip price levels” and that “a price level is a location/area provided on the screen with which a price may be (but is not required to be) displayed.” *Id.* at 41 (citing Ex. 2169 ¶¶ 75–81).

Upon consideration of the parties’ arguments and evidence, we are persuaded that the broadest reasonable construction, in light of the specification of the ’055 patent, of “static price axis” is a price column or reference line where prices do not normally change positions unless a re-centering or re-positioning command is received. This is consistent with the ’055 patent, which states:

It is to be understood that, in this context, static does not mean immovable, but rather means fixed in relation. For example, with a static price scale, the scale itself may be movable, but the prices represented remain fixed in relation to each other, subject to consolidation or expansion.

Ex. 1001, 4:53–58. This also is consistent with the claim language, itself, which includes steps of receiving a re-positioning command and, in response, re-positions the static price axis. Ex. 1001, 34:60–67. We also are persuaded that a “static price axis” includes a reference line along which bids or asks are plotted. This is consistent with the ’055 patent disclosure of the static price axis and the plain meaning of the term. *See Id.* at 7:67–8:16, Ex. 2071, 4 (dictionary definition of “axis”).

We, however, are not persuaded that the broadest reasonable interpretation requires a price axis that does not skip price levels and that price levels are locations/areas provided on the screen with which a price may be (but is not required to be) displayed. Patent Owner’s proposed

clarification is inconsistent with the '055 patent. The '055 patent discloses that

[t]he representative prices for the given commodity are shown in column 304 [(i.e., the price axis)], where the prices are static and increment in “ticks,” where a tick is the minimum change in a price value that is set by the exchange for each commodity. The prices can be displayed as ticks, as multiples of ticks or in any other fashion. . . . Other price display convention may alternatively be used, as long as the requisite price information is conveyed to the user.

Ex. 1001, 7:67–8:9; *see also Id.* at 7:43–50 (disclosing that the static prices can be displayed in any matter and that just market depth levels or working orders can be displayed). The '055 patent also discloses displaying indicators in only a portion of a cell because a price falls between prices in a static price scale. *See Id.* at 13:58–67, 17:65–18:2, 18:47–51, 29:25–37.

We determine that the broadest reasonable interpretation in light of the specification of the '055 patent of static price axis is a price column or reference line where prices do not normally change positions unless a re-centering or re-positioning command is received.

ii. “computer readable medium”

Claims 17–19 are directed to “[a] computer readable medium having computer-readable instructions thereon.” *See* Ex. 1001, 36:1–2. Petitioner contends that, when given the broadest reasonable interpretation, the “computer readable medium” of claims 17–19 encompasses transitory, propagating signals. Pet. 33–34 (citing *In re Nuijten*, 500 F.3d 1346, 1357 (Fed. Cir. 2007)).

Patent Owner argues that it would be unreasonable to construe claims 17–19 as encompassing signals *per se*. PO Resp. 25–26. First, Patent Owner argues that “the USPTO guidance relied upon” is directed to examination, which is pre-issuance, and these proceedings are post-issuance. *Id.* at 25. Patent Owner contends that “it would be unreasonable to adopt a construction that would have made a patent invalid at the time of issuance.” *Id.* Second, Patent Owner argues that intrinsic evidence in the prosecution history show that the claims are directed to non-transitory media and that this is consistent with the specification of the ’055 patent, which describes the relevant field as being interface software run on an end-user computer or terminal. *Id.* (citing Ex. 1002, 165, Ex. 1001, 2:1–6, 4:60–5:7).

Upon consideration of the parties’ arguments and evidence, we are persuaded that the broadest reasonable construction, in light of the specification of the ’055 patent, of computer readable medium encompasses transitory, propagating signals. We are not persuaded by Patent Owner that this construction is inconsistent with the specification of the ’055 patent. We are not persuaded that, because the ’055 patent describes the software running on an end-user computer or terminal, the computer readable medium is limited to non-transitory media. As Petitioner points out, “[t]he specification of the ’055 patent neither defines nor provides examples of a computer-readable medium.” Pet. 33. It does not limit computer readable medium to non-transitory media or preclude transitory propagating signals *per se*. See *Subject Matter Eligibility of Computer-Readable Media*, 1351 Off. Gaz. Pat. Office 212 (Feb. 23, 2010) (“The broadest reasonable interpretation of a claim drawn to a computer readable medium . . . typically

covers forms of non-transitory tangible medium and transitory propagating signals per se . . .”).

Patent Owner argues that “the USPTO guidance relied upon” is directed to examination in a pre-issuance context and, thus, should not be relied upon in a post-issuance context. PO Resp. 25. It is not clear from Patent Owner’s argument to what USPTO guidance Patent Owner is referring as Patent Owner provided no citation to any USPTO guidance. *See Id.* In our Institution Decision, we cited *Ex parte Mewherter*, 107 USPQ2d 1857, 1859–63 (PTAB May 8, 2013) (precedential). Inst. Dec. 25, n.7. *Ex parte Mewherter* refers to the guidance in *Subject Matter Eligibility of Computer-Readable Media*. *Ex parte Mewherter*, 107 USPQ2d at 1859. Inasmuch as Patent Owner’s argument is directed to *Subject Matter Eligibility of Computer-Readable Media*, Patent Owner’s argument is unpersuasive. Although the guidance provided in *Subject Matter Eligibility of Computer-Readable Media* is not binding upon the Board, Patent Owner provides no persuasive reason for the Board to depart from this guidance. Like in a pre-issuance context, during covered business method patent review, claims are given their broadest reasonable interpretation in light of the specification. 37 C.F.R. § 42.300(b); *see Cuozzo Speed Tech.*, 136 S. Ct. at 2144–46.

Further, we are not persuaded by Patent Owner that intrinsic evidence in the prosecution history shows that the claims are directed to non-transitory media. *See* PO Resp. 25. Patent Owner directs our attention to a statement made by the examiner in the prosecution history of the ’055 patent — “a computer readable medium (known in the computer art as a floppy disk, cd-rom, hard drive, zip drive, jazz drive etc.).” *Id.* (quoting Ex. 1002,

165). Contrary to Patent Owner’s argument, this statement does not limit computer readable medium to non-transitory media but allows for other types of media.

We determine that the broadest reasonable interpretation of “computer readable medium having computer-readable instructions thereon,” in light of the specification of the ’055 patent, encompasses transitory, propagating signals.

iii. Other Terms

We do not need to construe any other claim terms for purposes of our decision. *See, e.g., Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011) (“[C]laim terms need only be construed ‘to the extent necessary to resolve the controversy.’”) (citation omitted).

B. Requirements for Covered Business Method Patent Review

Section 18 of the AIA⁵ provides for the creation of a transitional program for reviewing covered business method patents. Section 18 limits review to persons or their privies who have been sued or charged with infringement of a “covered business method patent,” which does not include patents for “technological inventions.” AIA § 18(a)(1)(B), (d)(1); *see* 37 C.F.R. § 42.302.

In compliance with 37 C.F.R. § 42.302(a), Petitioner certifies that it has been sued for infringement of the ’055 patent. Pet. 3; *see* Paper 8, 3.

⁵ Leahy-Smith America Invents Act, Pub. L. No. 112–29, 125 Stat. 284, 329 (2011) (“AIA”).

i. “*Method or Corresponding Apparatus for Performing Data Processing or Other Operations Used in the Practice, Administration or Management of a Financial Product or Service*”

The statute defines a “covered business method patent” as

[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.

AIA § 18(d)(1); see 37 C.F.R. § 42.301(a). A covered business method patent can be broadly interpreted to encompass patents claiming activities that are financial in nature. Transitional Program for Covered Business Method Patents—Definitions of Covered Business Method Patent and Technological Invention, 77 Fed. Reg. 48734, 48735 (Aug. 14, 2012); *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1338–41 (Fed. Cir. 2016) (determining that a patent was a covered business method patent because it claimed activities that are financial in nature); *Unwired Planet, LLC v. Google, Inc.*, 841 F.3d 1376, n. 5 (Fed. Cir. 2016) (stating that “we endorsed the ‘financial in nature’ portion of the standard as consistent with the statutory definition of ‘covered business method patent’ in *Blue Calypso*”), *Versata Development Group, Inc. v. SAP America, Inc.*, 793 F.3d 1306, 1324–25 (Fed. Cir. 2015) (“[The statute] on its face covers a wide range of finance-related activities.”).

A patent need have only one claim directed to a covered business method to be eligible for review. 77 Fed. Reg. at 48,736 (Response to Comment 8). We take claim 1 as representative.

Petitioner contends that the ’055 patent is a covered business method patent because it 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. Pet. 3–5. Petitioner argues that claims 1 and 17 are directed to a method and corresponding apparatus for displaying and re-positioning market data used for trading commodities, which is a financial activity. *Id.* at 4–5. Petitioner additionally argues that claim 16 claims a financial activity, because it recites sending a trade order to an electronic exchange. *Id.* Petitioner further argues that the ’055 patent discloses that it is directed to electronic trading, which is a financial activity. *Id.* (citing Ex. 1001, 1:29).

Patent Owner disagrees. Patent Owner does not dispute that the claims of the ’055 patent “include financial terms” but disputes that the claims perform data processing or other operations, as required by the statute. PO Resp. 26–28. 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 26–27 (quoting Ex. 2121, 4). Patent Owner argues that the claims of the ’055 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. 27. Patent Owner asserts that the claimed invention is not directed to a business method. *Id.* at 27–28. According to Patent Owner, the legislative history “makes clear that improvements to software tools or GUIs, even if used for trading or other financial activities, were intended to be outside the scope of CBM [review].” *Id.* at 34 (citing Ex. 2126, S5428, S5433 (157

Cong. Rec. S5428 (daily ed. Sept. 8, 2011) (statements of Sens. Schumer and Durbin)).

As an initial matter, Patent Owner's arguments concerning the legislative history are not persuasive. Although the legislative history includes certain statements that certain novel software tools and graphical user interfaces that are used by the electronic trading industry worker are not the target of § 18 of the AIA (see Ex. 2126, S5428, S5433) the language of the AIA, as passed, does not include an exemption for user interfaces for commodities from covered business method patent review. Indeed, "the legislative debate concerning the scope of a CBM review includes statements from more than a single senator. It includes inconsistent views" *Unwired Planet*, 841 F.3d at 1381. For example, in contrast to the statements cited by Patent Owner, the legislative history also indicates that "selling and trading financial instruments and other securities" is intended to be in the scope of covered business method patent review. See Ex. 2126, S5432 (statements of Sen. Schumer). "[T]he legislative history cannot supplant the statutory definition actually adopted. . . . The authoritative statement of the Board's authority to conduct a CBM review is the text of the statute." *Unwired Planet*, 841 F.3d at 1381. Each claimed invention has to be evaluated individually to determine if it is eligible for a covered business method patent review. A determination of whether a patent is eligible for a covered business method patent review under the statute is made on a case-by-case basis. 37 C.F.R. § 42.301(b).

Turning to the '055 patent, we are persuaded by Petitioner that the '055 patent is a covered business method patent. According to the specification of the '055 patent, "the present invention is directed to

electronic trading” (*Id.* at 1:28) and, in particular, to repositioning market information in a GUI. (*Id.* at 3:3–5). The information relates to tradable objects, which are financial products, such as stocks, options, bonds, futures, currency, etc. *Id.* at 5:8–17. The ’055 patent discloses that the invention involves processing the information for display — “[t]he trading application . . . processes this information.” Ex. 1001, 6:26–30.

The disclosed invention is reflected in claim 1 of the ’055 patent, which is directed to “[a] method for repositioning a static price axis on a graphical user interface for displaying market information of a commodity being traded at an electronic exchange.” Ex. 1001, 34:15–17. The claimed method recites steps of displaying market information received from an electronic exchange along a static price axis, adjusting the static price axis, and repositioning the static price axis. *Id.* at 34:19–67.

Electronic trading is a financial service or activity. Tradable objects are financial products. A method of computing and displaying financial information for a tradable object on a graphical user interface for use in electronic trading is a method for performing data processing or other operations used in the practice, administration, or management of a financial product or service. We, thus, are persuaded by Petitioner that the ’055 patent is a covered business method patent. *See* Pet. 4–5, Pet. Reply. 29–30.

Patent Owner argues that the statute requires that the “data processing” cause a significant change in the data, and that data processing that merely displays the data, like the data processing disclosed in the ’055 patent, is not significant. PO Resp. 26–27. Patent Owner’s argument is based upon the assumption that “data processing” in the statute is interpreted according to the definition of “data processing” found in the glossary for

class 705 of the United States Patent Classification System. *See Id.* Patent Owner, however, does not sufficiently explain why this definition is controlling, as opposed to the plain meaning of “data processing.” We, thus, are not persuaded that “data processing” as recited by the statute precludes data processing for the purpose of displaying the data. As pointed out above, the ’055 patent, itself, discloses processing market information received from an electronic exchange. Ex. 1001, 6:26–30. We, thus, are not persuaded that the ’055 patent does not claim “performing data processing . . . used in the practice, administration, or management of a financial product or service” (AIA § 18(d)(1)).

In any event, the statute does not limit covered business method patents to only those that claim methods for performing data processing used in the practice, administration, or management of a financial product or service. It includes methods for performing “other operations” used in the practice, administration, or management of a financial product or service. Claim 1’s method for repositioning a static price axis on a graphical user interface for displaying market information of a commodity being traded at an electronic exchange is an operation used in the practice, administration, or management of a financial product or service.

We determine that Petitioner has shown by a preponderance of the evidence that the ’055 patent is a covered business method patent.

ii. Technological Invention Exception

Even if a patent includes claims that would otherwise be eligible for treatment as a covered business method, review of the patent is precluded if the claims cover only “technological invention[s],” as defined by 37 C.F.R. §42.301(b). The definition of “covered business method patent” in § 18(d)(1) of the AIA does not include patents for “technological inventions.”

To determine whether a patent is for a technological invention, we consider “whether the claimed subject matter as a whole [1] recites 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). 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.

Both prongs must be satisfied in order for the patent to be excluded as a technological invention. *See Versata*, 793 F.3d at 1326–7.

Petitioner contends that the claims of the ’055 patent do not recite a technological feature that is novel and unobvious over the prior art and do not solve a technical problem using a technical solution. Pet. 6–12.

Petitioner argues that the claims are “implemented using conventional

computer hardware such as personal computers, servers, networks, displays, and input devices and therefore do not include a technological feature or implement a technological solution.” *Id.* at 6–7. Petitioner also argues that the ’055 patent solves a business problem: “reading a display of prices for a commodity and entering a trade order before the price for the commodity changes.” *Id.* at 8–9 (citing Ex. 1001, 2:16–17, 35–67). Petitioner cites to the Declaration of Kendyl A. Roman (Ex. 1003) and the Declaration of David Rho (Ex. 1004) for support.

Patent Owner argues that “Petitioners fail to address whether the claims recite a technical feature that is purportedly novel and unobvious” and contends that the claimed combination of the adjusting and repositioning feature with the static price axis and dynamic indicators is novel and unobvious. PO Resp. 29, 31–32. Patent Owner, further, argues that the claims solve a technical problem with a technical solution. *Id.* at 29–32. According to Patent Owner, the claimed invention solves the problem of indicators moving off the display as the market data changes. *See Id.* at 9. Patent Owner contends:

Speed, efficiency, and usability problems were created for some users because, if the indicators were located off, or close to off, the displayed static price axis, the user would have to spend time taking an action such as scrolling or manually repositioning to find the state of the market, and the GUI tool did not convey the state of the market precisely or efficiently for these users.

Id. Patent Owner cites to the Declaration of Eric Gould-Bear (Ex. 2168) and the Declaration of Dan R. Olsen, Jr. (Ex. 2174) for support.

Contrary to Patent Owner’s argument, Petitioner contends in the Petition that the claims do not recite a technical feature that is novel and

unobvious. Pet. 6–8. Claim 1 recites a method that requires the display of certain information in a certain arrangement on a GUI and allows for the adjusting or re-positioning of the information on the display. Ex. 1001, 34:15–67. The first step of the method is to receive market information via a computer for a tradeable object from an electronic exchange. *Id.* at 34:19–23. The subsequent steps of the method relate to displaying and positioning/repositioning the market information on a GUI. *Id.* at 34:24–67. The '055 patent discloses that it is known that electronic exchanges provide market information to connected traders' computers. *See Id.* at 2:27–28.

As Petitioner points out, the '055 patent, itself, discloses that the technical features of claim 1 were known. Pet. 6–8. The '055 patent discloses that its system can be implemented “on any existing or future terminal or device.” Ex. 1001, 5:2–7, 39–43. Computers or terminals are known to include displays. The '055 patent discloses that the input device can be a mouse, a known input device. Ex. 1001, 2:1–13, 5:24–27. The '055 patent discloses “commercially available trading applications” that provide electronic trading interfaces that display bid and ask quantities in association with a static price scale. *Id.* at 5:66–6:7. The '055 patent states that “[t]he preferred embodiments, however, are not limited to any particular product that performs the translation, storage and/or display functions.” *Id.* at 5:66–6:7.

The trading application . . . processes this information and maps it to positions in a theoretical grid program or any other comparable mapping technique for mapping data to a screen. The physical mapping of such information to a screen grid, for display on a client device . . . , may 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.

Id. at 6:27–35.

Given the above, we determine that claim 1 does not recite a technological feature that is novel and unobvious over the prior art. Because both prongs must be satisfied for a patent to be excluded from covered business method patent review for being a technological invention, we find that the '055 patent is eligible for a covered business method patent review for at least the reason that claim 1 fails to recite a technological feature that is novel and unobvious.

Notwithstanding our determination above, we also are persuaded by Petitioner that the '055 patent does not solve a technical problem with a technical solution.

The '055 patent discloses that exchanges are volatile and move rapidly and that to profit a trader must react quickly. Ex. 1001, 2:14–16.

To profit in these markets, traders must be able to react quickly. A skilled trader with the quickest software, the fastest communications, and the most sophisticated analytics can significantly improve the trader's own or the trader's firm's bottom line. The slightest speed advantage can generate significant returns in a fast moving market. In today's securities markets, a trader lacking a technologically advanced interface is at a severe competitive disadvantage.

Id. at 2:16–24. “The more time a trader takes entering an order, the more likely the price on which the trader wanted to bid or offer will change or not be available in the market” because “[t]he market is fluid as many traders are sending order to the market simultaneously.” *Id.* at 2:39–43. “If a trader intends to enter an order at a particular price, but misses the price because

the market prices moved before the trader could enter the order, the trader may lose hundreds, thousands, even millions of dollars.” *Id.* at 2:49–53. “It is therefore desirable for electronic trading systems to offer tools that can assist a trader in adapting to an electronic marketplace, and help the trader to make trades at desirable prices.” *Id.* at 2:64–67. “A trader may use automatic positioning to always have a visual reference of where the market is trading, increasing the likelihood of entering quantities and having those quantities filled at desirable prices.” *Id.* at 26:30–34

As can be seen from the above, the problem disclosed in the ’055 patent is a trader having to read a display of prices for a commodity and enter a trade order before the price for the commodity changes. As Petitioner points out, this is a financial issue or a business problem, not a technical problem. Pet. 8–10. If the market or exchange did not rapidly change, then there would be no need for a trader to enter orders rapidly or for a GUI to accomplish such. We, thus, determine that at least claim 1 of the ’055 patent does not recite a technical solution to a technical problem, as required by the second prong of the test to determine whether a patent is for a technological invention.

As the ’055 patent is a covered business method patent and is not precluded for being a technological invention, the ’055 patent is eligible for covered business method patent review.

C. Patent Subject Matter Eligibility

Petitioner contends that claims 1–19 are unpatentable under 35 U.S.C. § 101 as being directed to ineligible subject matter. Pet. 18–34. Patent Owner disagrees. PO Resp. 13–24.

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).

Claims 1–16 recite a method, which falls into the process category of patent-eligible subject matter of § 101. Claims 17–19 recite a computer readable medium having computer-readable instructions thereon. When

given the broadest reasonable interpretation, in light of the specification of the '055 patent, claims 17–19 encompass subject matter that falls into the manufacture category (e.g., non-transitory media), as well as subject matter that falls outside the four statutory classes of subject matter (e.g., propagating transitory signals).

i. Subject Matter Outside the Four Statutory Categories

First, we turn to Petitioner's contention that claims 17–19 are unpatentable under 35 U.S.C. § 101 because they encompass subject matter that falls outside the four statutory categories of patentable subject matter. Pet. 33–34. Patent Owner disagrees. PO Resp. 25–26.

Claims 17–19 recite “[a] computer readable medium having computer-readable instructions thereon.” Ex. 1001, 36:1–2. Above, we determine that computer readable medium, when given the broadest reasonable construction in light of the specification of the '055 patent encompasses transitory, propagating signals. Transitory, propagating signals are not covered by the four statutory classes of subject matter of 35 U.S.C. § 101. *In re Nuijten*, 500 F.3d at 1352. Petitioner has shown sufficiently that claims 17–19 are unpatentable under 35 U.S.C. § 101 as encompassing subject matter that falls outside the four statutory categories of patentable subject matter.

ii. Abstract Idea

Next, we turn to Petitioner’s contention that claims 1–19 are unpatentable under 35 U.S.C. § 101 as being directed to an abstract Idea. Pet. 18–33. We take independent claim 1 as representative.⁶

Petitioner argues that claim 1 encompasses the abstract Idea of “repositioning market information on a GUI . . . and electronic trading” which is a “fundamental economic practice long prevalent in our system of commerce.” Pet. 18 (quoting *Bilski v. Kappos*, 130 S. Ct. 3218, 3231 (2010)). Petitioner further argues that providing a trader with financial information to facilitate market trades is subject matter that “can be performed in [the human] mind, or by a [human] using a pen and paper.” *Id.* at 18 (citing *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.2d 1366, 1372 (Fed. Cir. 2011)), 21–24.

“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, LLC v. DirectTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016) (quoting *Genetic Techs. Ltd. v. Merial LLC*, 818 F.3d 1369, 1376 (Fed. Cir. 2016) and *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). There is no definitive rule to determine what constitutes an “abstract Idea.” Rather, the Federal Circuit has explained that “both [it] and

⁶ Independent claim 17, the only other independent claim, corresponds to claim 1 in that it recites a computer readable medium having computer-readable instructions thereon that causes a computer to execute a method substantially the same as the method of claim 1. Thus, claim 1 is representative of claim 17.

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”).

Notwithstanding Patent Owner’s arguments, which we address below, we determine that Petitioner has shown⁷ that claim 1 is directed to the abstract Idea of repositioning market information on a GUI for electronic trading, which is a fundamental economic practice.

Claim 1 recites in the preamble “a method for repositioning a static price axis on a graphical user interface for displaying market information of a commodity being traded at an electronic exchange.” Ex. 1001, 34:15–17. The method steps include receiving current highest bid price and current lowest ask price for a tradable object; displaying a first and adjusted static price axis displaying market information in locations along the static price axis; and automatically repositioning the static price axis when a designated price is within designated price levels from the lowest value or highest value of the static price axis. *Id.* at 34:19–67. We agree with Petitioner that claim 1 encompasses the abstract Idea of providing a trader with financial

⁷ As explained above, determining whether a claim is directed to an abstract idea calls upon us to look at the focus of the claimed advance over the prior art. In order to do so, we must make findings of fact as to the prior art at the time of the invention. Those facts must be supported by a preponderance of the evidence. 35 U.S.C. § 326(e).

information to facilitate market trades, a fundamental economic practice, and steps that can be performed using pen and paper, or even in a trader's mind. *See* Pet. 27–30.

As can be seen from its steps, the focus of claim 1 is repositioning market information displayed on a GUI for electronic trading. This focus is consistent with the disclosure of the '055 patent, which states that “[t]he preferred embodiments relates to . . . automatic repositioning of market information in a graphical user interface.” Ex. 1001, 3:3–5. The focus of claim 1 is also consistent with the problem disclosed by the '055 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 enter an order. *Id.* at 1:47–67.

Claim 1 does not recite any limitations that specify how the computer implements the steps or functions for using a GUI. For example, claim 1 does not specify how the computer maps the bid quantities, ask quantities, and prices to the display. The '055 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 for display . . . may 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 6:31–35.

The '055 patent discloses that many 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 1:36–2:12.

Exhibit 1018 discloses that long before the '055 patent, traders maintained books that plotted bids and asks (e.g., the market depth) along a price axis. See Ex. 1018, 44–46. Figure 4-2 of Exhibit 1018 is reproduced below.

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

BUY		SELL
BKR R - 100	22	
BKR L - 300	1/8	
BKR A - 500		
BKR D - 200	1/4	
BKR E - 300		
	3/8	
	1/2	
	5/8	BKR F - 300
		BKR G - 600
	3/4	BKR B - 100
		BKR M - 200
	7/8	BKR S - 400

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 price axis. For example, Figure 4-2 shows the best bid at $22\frac{1}{4}$ and the best ask at $22\frac{5}{8}$. *Id.* at 44. Petitioner's declarant Mr. Román testifies that:

Claim 1 could be performed by a human using pen-and-paper or a white board. The persons could be told the highest bid and offer, which he or she could plot along a price axis. If the person wanted to adjust the display as recited in claim 1, he or she could do it by redrawing or merely adding additional price levels to the top or bottom. . . . The person could replot with updated data as it came in. If the data plotted off the existing axis (i.e., came within a set number of prices from either end of the axis), the person could reposition the axis by redrawing it.

Ex. 1003 ¶ 69.

Given this, we determine that repositioning market information displayed for electronic trading 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. See Pet. 21 (citing Ex. 1018, 44–46; Ex. 1005, Fig. 4; Ex. 1003 ¶¶ 68–70).

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 *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229 (Fed. Cir. 2016). 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 ’055 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.

When we compare claim 1 at issue to those claims already found to be directed to an abstract Idea in previous cases, we are persuaded that claim 1 is more similar to those claims found to encompass an abstract Idea than those determined not to encompass an abstract Idea. Claim 1 is similar to the claims in *Electric Power*, which did “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.” *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016).

We have considered all of Patent Owner’s arguments regarding why the claims are not directed to an abstract Idea but are not persuaded by such arguments. PO Resp. 13–20. Patent Owner argues that Petitioner oversimplifies the claims and ignores the structure and functionality recited in the claims, which Patent Owner deems to be the functionality of the claimed GUI itself. *Id.* at 13–14. We disagree that Petitioner has oversimplified the claims and ignores the structure and functionality recited in the claims.

Nor are we persuaded by Patent Owner’s arguments that the claimed GUI improves the functioning of the computer to solve a problem rooted in computer technology. PO Resp. 9–11, 14–17, 22–24. Patent Owner argues that the claims solve a problem with prior GUIs that included a static price axis and dynamic indicators, that the indicators could move off or close to off the displayed static price axis, and the user would have to manually

adjust the price axis. *Id.* at 14–15. This problem, however, is not a problem rooted in computer technology. As discussed above, Mr. Román’s testimony and Exhibit 1018 indicate that indicators moving off or close to off a static price axis occurs when plotting market data manually, which causes the price axis to have to be adjusted or repositioned. See Ex. 1002 ¶¶ 58–70; Ex. 1018, 44–46.

Patent Owner argues that the claims are not directed to an abstract Idea because they are not directed to a fundamental Idea, longstanding commercial practice, a business method, or a generic GUI. PO Resp. 16–20. Patent Owner argues that in contrast to many other cited cases, the claims here are directed to the specific structure, make-up, and functionality of a particular GUI. *Id.* Patent Owner argues that the claimed GUI tool builds on and is an improvement to trading screens like those in the ’132 patent and, thus, the claims of the ’055 patent are even more clearly patent eligible. *Id.* at 6–9;. The claims of the ’055 patent, however, do not build on and are broader in some aspects than the claims of the ’132 patent. For example, claim 1 of the ’055 patent does not recite the single action order feature claimed by the ’132 patent. The ’132 patent was involved in *Trading Technologies International, Inc., v. CQG, INC.*, No. 2016-1616, 2017 WL 192716 (Fed. Cir. Jan. 18, 2017). In that case, the court indicated that even those narrower claims are on the line between patent eligibility and ineligibility (*see Id.* at *4 (noting the “close question[] of eligibility”)). The specification of the ’055 patent is different, and the ’055 patent claims and discloses features not discussed in the ’132 patent. Thus, comparing the claims of the patents involved in *Trading Technologies* is not particularly helpful here. *Trading Technologies*, 2017 WL 192716 at *2.

iii. Inventive Concept

Next we turn to “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.” *Alice*, 134 S. Ct. at 2355 (quoting *Mayo*, 132 S. Ct. at 1297–98).

Petitioner argues that the additional elements of the claims, both individually and as an ordered combination, do not recite anything more meaningful than the abstract Idea. Pet. 29–31. Petitioner further argues that the claims are not rooted in computer technology because they do not overcome a problem specifically arising in the realm of computers or computer networks. *Id.* at 44–46.

Notwithstanding Patent Owner’s arguments, which we address below, we are persuaded that Petitioner has shown that none of the additional claim elements in claim 1 transforms the nature of the claims into a patent-eligible application. Claim 1 of the ’055 patent recites “[a] method for re-positioning a static price axis on a graphical user interface for displaying market information.” Ex. 1001, 34:15–16. The method includes a step of receiving information from an electronic exchange. *Id.* at 34:19–23. Claim 1 also recites the adjusting feature and the re-positioning feature. *Id.* at 34:24–33, 60–67. Claim 1 further recites the step of displaying a bid and ask display region, which has locations that correspond to price levels along a static price axis, on a GUI and displaying quantity indicators in the locations. *Id.* at 34:34–59. The indicators move along the static price axis as the market changes. *Id.*

The ’055 patent discloses receiving market information from an exchange and displaying the information on a GUI is old and well-known,

routine and conventional activity. *Id.* at 1:34–2:34; *see also Id.* at 5:1–6, 5:38–42 (disclosing that any existing terminal device or network architecture could be used). Receiving market data from an exchange is nothing more than routine data gathering and does not transform the abstract Idea into a patent-eligible invention. *See CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1370 (Fed. Cir. 2011).

The '055 patent discloses that the use of software to create specialized interactive trading screens is known and the range of features varies according to the software. Ex. 1001, 2:1–7. The '055 patent also discloses that the physical mapping of the information to the screen could be done by any known technique and that the invention is not limited by the method used to map the data to the screen. *Id.* at 6:26–35. The use of software or a GUI to display market information is a well-understood, routine, conventional activity that does not add significantly more to the abstract Idea. *Mayo*, 132 S. Ct. at 1298. The use of a computer or GUI to display information in a known arrangement (*see* Ex. 1018, 44–46) is nothing more than a mere field of use limitation. “Most obviously, limiting the claims to the particular technological environment . . . is, without more, insufficient to transform them into patent-eligible applications of the abstract Idea at their core.” *Elec. Power Grp.*, 830 F.3d at 1354.

Given the above, we determine that the individual elements of claim 1 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. Considering all of the elements as an ordered combination, we determine, on this record, that the combined elements also do not transform the nature of claim 1 into a patent-eligible application.

Patent Owner argues that the claims pass part two of *Alice* because they recite an inventive concept. PO Resp. 19–24. Patent Owner argues that the claims of the '055 patent recite significantly more because the claims allegedly specify a high level of detail, the claimed combination of GUI features/functionality is not pre-solution or post-solution activity, and the claimed functionality was not routine and conventional. *Id.* at 23–24. Patent Owner does not explain sufficiently what about the claims qualifies as an inventive concept and as discussed above the individual elements of the claims do not transform the nature of the claims 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 claims simply recite the use of a generic computer with routine and conventional functions. Further, considering all of the elements as an ordered combination, we determine that the combined elements also do not transform the nature of the claims into a patent-eligible application.

We determine that Petitioner shows sufficiently that claims 1 and 17 are patent ineligible under 35 U.S.C. § 101.

iv. Dependent Claims

Petitioner contends that the additional elements recited by dependent claims 2–16, 18, and 19 do not add significantly more to the abstract Idea so as to render the claims patent-eligible. Pet. 32–33. On this record, we determine that Petitioner sufficiently demonstrates that dependent claims 2–16, 18, and 19 are patent ineligible under 35 U.S.C. § 101. Patent Owner makes no arguments directed to the additional elements of the dependent claims.

D. Grounds Under 35 U.S.C. § 103

Section 103 forbids issuance of a claim when

the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art.

35 U.S.C. § 103. The ultimate determination of obviousness under § 103 is a question of law based on underlying factual findings. *In re Baxter Int'l, Inc.*, 678 F.3d 1357, 1362 (Fed. Cir. 2012) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966)). These underlying factual considerations consist of: (1) the “level of ordinary skill in the pertinent art,” (2) the “scope and content of the prior art,” (3) the “differences between the prior art and the claims at issue,” and (4) “secondary considerations” of non-obviousness such as “commercial success, long-felt but unsolved needs, failure of others, etc.” *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) (quoting *Graham*, 383 U.S. at 17–18).

i. Obviousness of Claims 1, 3, 4, 6–15 and 17–19 over TSE

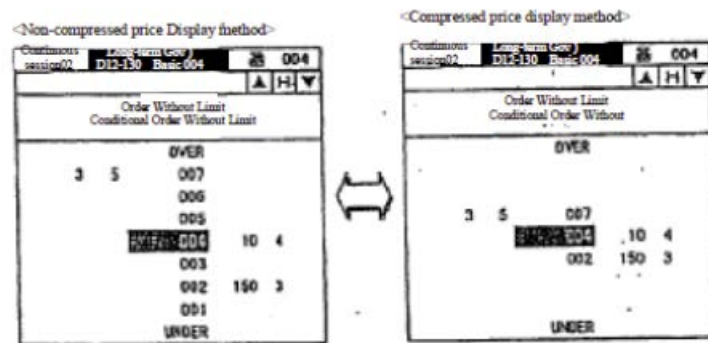
Petitioner contends that claims 1, 3, 4, 6–15 and 17–19 are unpatentable under 35 U.S.C. § 103 over TSE. Pet. 34–65.

Patent Owner disagrees for numerous reasons. PO Resp. 51–84. In particular, Patent Owner contends that TSE is not prior art. *Id.* at 43–50. It is not necessary for us to determine the prior art status of TSE. Regardless of TSE’s prior art status, for the reasons discussed below, Petitioner fails to show by a preponderance of the evidence that the claims of the ’055 patent are unpatentable over TSE.

a. Overview of TSE

TSE is a guide for operating a trading terminal of the Tokyo Stock Exchange. Ex. 1008, 1. The trading terminal displays a GUI for depicting market information on a Board/Quotation Screen (*see Id.* at 107). The Figure on page 107 of TSE is reproduced below.

①	②	③			④		⑤		⑥	
Continuation Section	01 Long-term government bonds	012	Base	13295						
④ K13320 (13:17) (2012)					⑤	▲	H	▼		
⑧	10	250	Closing Market	250	⑧	15	Prev/Next		⑩	
⑨	Caution			10	1	⑩				
	157	1810	OVER							
	2	1	3	13029			H		13320	
	2	4	132	13028					(9:46)	
		4	145	13027			L		13274	
		2	70	13026					(9:10)	
	5	2	29	13025			P		13310	
		1	20	13024					(13:16)	
		1	5	13023 # ⑮	5				(2021)	
		⑪		13022			C		+13	
	10			13021						
				13020K ⑮			V		42588	
				13019	17	3	L5		13005	⑮
				13018	47	1			(13:14)	
				13017	5	6	L4		13008	
				13016	36	3			(13:15)	
				13015	44	6	2	L3	13009	
				13014	46	2			(13:15)	
				13013	123	5	L2		13008	
				13012	141	3			(13:16)	
				13011	2	4	L1		13009	
				13010	817	3			(13:16)	
				UNDER	6084	169			W	5 ⑮



The figure depicts the Board/Quotation Screen in compressed and non-compressed mode. In non-compressed mode, all prices (i.e., the claimed adjusted price levels) are displayed on the Board/Quotation Screen, and, in compressed mode, only prices that satisfy certain conditions (i.e., the claimed first plurality of price levels), such as having an order, are displayed. *Id.* at 68. The Board/Quotation Screen can be moved between the compressed mode and uncompressed mode by selecting a radio button using a mouse. *Id.* at 69.

The Board/Quotation Screen also has a basic board screen mode and a scrolling mode. *Id.* at 115. In basic board screen mode, the information is updated so that a “Board Display Center Price” is always displayed in the center. *Id.* TSE discloses that the centering occurs upon the occurrence of different events, such as if the central price falls within the range of the top or bottom three prices. *Id.* In scrolling mode, the central price’s position does not change automatically (*Id.*); however, TSE does disclose a “Home Button” for returning the Board/Quotation Screen to the basic board screen centered on the central price (*Id.* at 110, 116).

b. Independent Claims 1 and 17

Claim 1 recites the following limitations:

displaying a first plurality of price levels along a static price axis on a graphical user interface of a display device associated with the computing device, where the first plurality of price levels range from a lowest value to a highest value along the static price axis;

in response to an input command received via an input device associated with the computing device, adjusting the first plurality price levels among a range of price levels to an adjusted plurality of price levels including the first plurality of price levels;

displaying a bid and ask display region on the graphical user interface, the bid and ask display region comprising a plurality of locations corresponding to the first plurality of price levels displayed along the static price axis, wherein each location corresponds to one of the first plurality of price levels, and wherein a number of the plurality of locations changes according to adjusting the first plurality of price levels

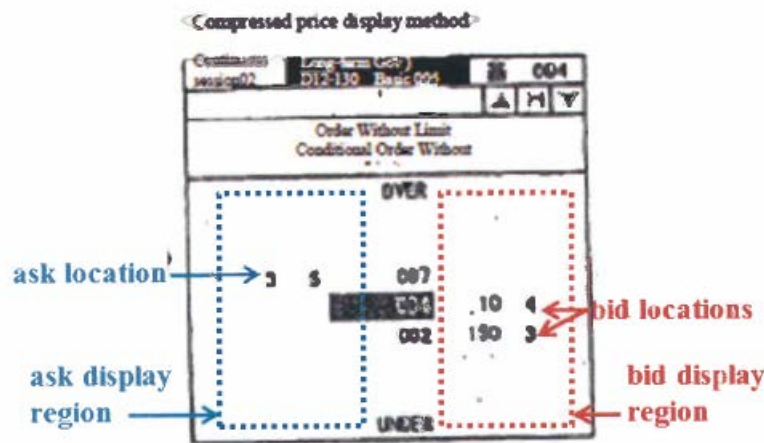
Ex. 1001, 34:24–41. Claim 17 recites similar limitations. *Id.* at 36:11–25.

In the Petition, Petitioner asserts that TSE discloses these claim limitations. Pet. 45–52. Petitioner equates price levels 002, 004, and 007 depicted on TSE’s compressed price display, reproduced above, to the claimed first plurality of price levels and equates price levels 001, 002, 003, 004, 005, 006, and 007 depicted on TSE’s non-compressed price display to the claimed adjusted plurality of price levels, also reproduced above. *Id.* at 47. Petitioner argues that TSE teaches the claimed adjustment by transitioning from the compressed display to the non-compressed display. *Id.* at 47.

Petitioner contends that the first plurality of price levels are displayed along a static price axis when they are displayed along the price axis in the non-compressed display, after the claimed adjustment has occurred. *Id.* at 45–46. Petitioner also contends that the non-compressed display has a bid display region to the right of price axis 11 and an ask display region to the left of price axis 11. *Id.* at 50–51.

With regards to the claimed “plurality of locations corresponding to the first plurality of price levels displayed along the static price axis, wherein each location corresponds to one of the first plurality of price levels” (Ex. 1001, 34:36–39), Petitioner states the following:

FIG. C of Mr. Roman’s Declaration (reproduced below) labels three exemplary locations to highlight that each location correspond to a different price level of the first plurality of price levels displayed along the price axis. (Roman Decl., ¶ 103.)



Román Decl., FIG. C

When transitioning TSE’s Board Screen from a compressed display to a non-compressed display (i.e., the claimed “adjusting”), the “number of the plurality of locations changes according to adjusting the first plurality of price levels.” For example, as shown in the figure on 0068 of TSE, the number of levels changes from three to seven when the “first plurality of price levels” is adjusted to the “adjusted plurality of price

levels.” (TSE, p. 0068.) Thus, TSE discloses the “*displaying a bid and ask display region*” step. (Roman Decl., ¶104.)

Pet. 51–52; *see also* Pet. Reply 15–23 (discussing price levels and corresponding locations on TSE’s compressed display). As can be seen from the above, Petitioner relies upon locations in the bid and ask region of TSE’s compressed display to teach the claimed plurality of locations. Claim 1 requires that the plurality of locations correspond to *the first plurality of price levels displayed along the static price axis*. Ex. 1001, 34:35–37. In annotated Figure C, the first plurality of price levels are displayed along the price axis of the compressed display.

Patent Owner disputes that the price axis of the compressed display is static. PO Resp. 54–55, 59–60. In particular, Patent Owner argues that “in the compressed mode, there is no ‘static price axis’” because “when new orders are added at price levels that did not previously have any order (or when the market changes to remove previous orders from a price), the price levels change positions based on these market changes.” *Id.* (citing Ex. 2331, 34:17–37:5; Ex. 2169 ¶ 91).

Patent Owner’s argument is persuasive. TSE discloses that in compressed mode, only prices that satisfy certain conditions, such as having an order, are displayed. *Id.* at 68. For example, as can be seen in the figure on page 68 of TSE, reproduced above, only prices 002, 004, and 007 are displayed in the compressed display. During cross-examination, Petitioner’s declarant Mr. Rho indicated that under certain circumstances the prices would move relative to each other when TSE’s Board/Screen was in compressed mode.

Q. Okay. All right. So in this compressed mode figure that we've been looking at on page 12 of your declaration, there are prices shown at 002, 004, and 007, correct?

A. There are prices at 002, 004 and 007. That is correct.

....

Q. Okay. Well, let's assume 006 is added but the center price is still 004. In that scenario, 006 would be added between 004 and 007, 007 would move up, and 004 would stay in the same place, correct?

....

THE WITNESS: That seems correct, yes.

Ex. 2331 34:20–37:5.

Mr. Rho's testimony indicates that the price axis of the compressed screen is not a static price axis. The broadest reasonable interpretation in light of the specification of the '055 patent of static price axis is a price column or reference line where prices do not normally change positions unless a re-centering or re-positioning command is received. As Mr. Rho testified, certain price levels of TSE's compressed mode price axis change positions relative to each other in certain circumstances when a re-centering or re-positing command is not received. For example, on TSE's compressed display shown in the figure on page 68, reproduced above, price 007 would move up relative to price 004 when an order at price 006 was added, but the center price is still 004. We, thus, are persuaded by Patent Owner that Petitioner has failed to establish that TSE discloses a bid and ask display region comprising a plurality of locations corresponding to the first plurality of price levels displayed along the static price axis, as required by claims 1 and 17.

Petitioner argues that TSE's price axis in compressed mode is static because TSE discloses the price levels do not change positions in compressed, scrolling mode unless the user selects the home button to return the price axis to a designated position and because TSE allows for one-half the length of the price axis to be the designated number for causing the price axis to reposition every time the designated price leaves the center. Pet. 49–50, Pet. Reply 17–20. Petitioner's argument is unpersuasive because it does not address Mr. Rho's testimony, reproduced above. Petitioner fails to explain sufficiently why the price axis of TSE's compressed mode is a static price axis if price levels can change positions relative to each other under certain circumstances when a re-centering or re-positing command is not received.

In the Petitioner's Reply, Petitioner contends that even if the Board accepts Patent Owner's arguments, transitioning TSE's display from boardx4 mode to boardx2 mode satisfies the disputed claim limitations. Pet. Reply 20, 23–25. Petitioner's Reply raises a new issue and exceeds the proper scope of a reply.⁸ Although the Petition discusses TSE's boardx4 mode and boardx2 mode in its overview of TSE (Pet. 35–40) and in connection with other claim limitations (*Id.* at 57), the Petition does not rely upon transitioning TSE's display from boardx4 mode to boardx2 mode to satisfy the disputed limitations above (*se Id.* at 45–52). Petitioner proffers a

⁸ During trial, Patent Owner objected to Petitioner's Reply as raising new issues for the first time. See Paper 64, Ex. 3006. In response, we authorized Patent Owner to file a listing identifying the portions of the Reply that allegedly raise new arguments and authorized Petitioner to file a listing identifying where the alleged new arguments were first raised in the record. See Papers 44, 45. We have taken into consideration the listings.

second Declaration of David Rho to support its argument made in its Reply. Like the Petition, the testimony of Mr. Rho in his second Declaration discusses how transitioning TSE's display from boardx4 mode to boardx2 mode satisfies the disputed claim limitations. Ex. 1035 ¶¶ 23–25. As provided in 37 C.F.R. § 42.23(b), a “reply may only respond to arguments raised in the corresponding opposition . . . or patent owner response.” One indication that a new issue has been raised in a reply is where a petitioner submits “new evidence necessary to make out a prima facie case” of unpatentability of an original claim. Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,767 (Aug. 14, 2012). An argument that raises a new issue will not be considered. *Id.* We, thus, will not consider Petitioner's contention that transitioning TSE's display from boardx4 mode to boardx2 mode satisfies the disputed claim limitations raised for the first time in Petitioner's Reply.

For the reasons given above, we determine that Petitioner fails to show by a preponderance of the evidence that claims 1 and 17 of the '055 patent are unpatentable under 35 U.S.C. § 103 over TSE.

c. Dependent Claims 3, 4, 6–15, 18, and 19

Claims 3, 4, 6–15, 18, and 19 depend from claims 1 and 17. For the same reasons as discussed above with regards to the patentability of claims 1 and 17 over TSE, we determine the Petitioner fails to show by a preponderance of the evidence that claims 3, 4, 6–15, 18, and 19 are unpatentable over TSE.

*ii. Obviousness of Dependent Claims 2 and 5 over TSE and Gutterman and
Obviousness of Dependent Claim 16 over TSE and Belden*

Claims 2, 5, and 16 depend from claim 1. For the same reasons as discussed above with regards to the patentability of claim 1 over TSE, we determine the Petitioner fails to show by a preponderance of the evidence that claims 2, 5, and 16 are unpatentable over TSE. Petitioner does not rely upon Gutterman or Belden to cure the deficiency of TSE discussed above.

III. MOTIONS TO EXCLUDE

A. Patent Owner's Motion to Exclude

Patent Owner moves to exclude Exhibits 1007, 1008, and 1011. PO Mot. to Exclude 1–2. Exhibit 1007 is TSE, and Exhibit 1008 is the English language translation of TSE. Petitioner relies on Exhibits 1007 and 1008 to establish unpatentability of the challenged claims under 35 U.S.C. § 103. Patent Owner objects to these documents for lack of authenticity and/or for inadmissible hearsay. *Id.* We find it unnecessary to consider the specific objection to the admissibility of Exhibits 1007 and 1008, because Petitioner's arguments regarding patentability are not persuasive for the reasons provided above, even assuming Exhibits 1007, 1008, and 1011 to be admissible.

Ex. 1011 is the transcript of Mr. Kawashima's deposition concerning the prior art status of TSE. Petitioner relies on Exhibit 1011 to establish the prior art status of TSE. Patent Owner objects to this document for lack of authenticity and/or for inadmissible hearsay. PO Mot. to Exclude 1–2. We find it unnecessary to consider the specific objection to the admissibility of Exhibit 1011, because it was not necessary for use to determine the prior art

status of TSE for the reasons provided above, even assuming Exhibits 1007, 1008, and 1011 to be admissible.

In addition, Patent Owner also moves to exclude portions of Petitioner's Reply, portions of a second Declaration of David Rho (Ex. 1035), and portions of the testimony of Dr. Olsen (Ex. 1038). *Id.* at 6. Patent Owner objects to these documents as being outside the scope of reply or direct questioning and/or unfairly prejudicial. PO Mot. to Exclude 6–12. Petitioner relies on the objected to portions of the second Declaration of David Rho and Petitioner's Reply to support its arguments that transitioning TSE's display from boardx4 mode to boardx2 mode satisfies the disputed claim limitations. Pet. Reply 20, 23–25. As explained above, we did not consider the specific arguments and portions of Exhibit 1035. Patent Owner's argument, thus, is moot. Petitioner relies upon the objected to testimony of Dr. Olsen to argue that TSE discloses a static price axis in compressed, non-scrolling mode. *Id.* at 18. We find it unnecessary to consider the specific objections to the admissibility of portions of Ex. 1038, because Petitioner's arguments concerning the unpatentability of the claims over TSE are unpersuasive, even assuming the objected to portions of Ex. 1038 is admissible.

Accordingly, we *dismiss* Patent Owner's Motion to Exclude as moot.

B. Petitioner's Motion to Exclude

Petitioner moves to exclude Exhibits 2030, 2032, 2168, 2292–2296, 2334, and 2339 and to exclude ¶¶ 127–128 of Exhibit 2169 because the “documents are irrelevant and/or constitute hearsay to which no exception applies.” Pet. Mot. to Exclude 1.

Exhibits 2030 and 2032 are a jury verdict and docket entry, respectively, associated with an earlier district court case involving Patent Owner and a third party. Although Patent Owner relies on Exhibit 2030 in its Response, we do not find where it relies on Exhibit 2032. In any event, we understand Patent Owner to rely on at least Exhibit 2030 in support of its arguments that TSE is not prior art. PO Resp. 48, n. 8. Petitioner moves to exclude the exhibits as irrelevant and inadmissible. Pet. Mot. to Exclude 3–4. We find it unnecessary to consider the specific objections to the admissibility of Exhibits 2030 and 2032, because it was not necessary for us to determine the prior art status of TSE for the reasons provided above.

Exhibit 2168 is a Declaration of Eric Gould-Bear. Patent Owner relies upon the testimony of Mr. Gould-Bear to support its argument that the '055 patent is not eligible for covered business method patent review and that the '055 is patent eligible. PO Resp. 24, 27, 29, 30, 32, 32. Petitioner objects to Ex. 2168 for lack of relevance. Pet. Mot. to Exclude 4–5. We find it unnecessary to consider the specific objection to the admissibility of Ex. 2168, because Patent Owner's arguments regarding the eligibility of the '055 patent are not persuasive for the reasons provided above, even assuming Exhibit 2168 to be admissible.

Exhibit 2169 is a Declaration of Christopher Thomas. Exhibits 2292–2296 are transcripts from a related district court proceeding. Patent Owner's declarant Mr. Thomas relies upon Exhibits 2292–2296 to support his testimony regarding the technical nature of the '055 patent. See Ex. 2169 ¶¶ 127–128. Petitioner objects to the Exhibits for lack of relevance and impermissible hearsay. Pet. Mot. to Exclude 7–8. Petitioner objects to ¶¶ 127–128 of Exhibit 2169 for containing impermissible hearsay and improper

expert testimony because Mr. Thomas relies upon Exhibits 2292–2296. *Id.* at 5–6. We find it unnecessary to consider the specific objection to the admissibility of ¶¶ 127–128 of Exhibit 2169 and Exhibits 2292–2296, because Patent Owner’s arguments regarding the technical nature of the ’055 patent are not persuasive for the reasons provided above, even assuming ¶¶ 127–128 of Exhibit 2169 and Exhibits 2292–2296 to be admissible.

Exhibits 2334 and 2339 are both a Declaration of Harold Abilock. Patent Owner relies upon Exhibits 2334 and 2339 and argues that the challenged claims are patentable over TSE. PO Resp. 61–63, 67–68, 78. Petitioner objects to these declarations for lack of relevance. Pet. Mot. to Exclude 8–9. We find it unnecessary to consider the specific objection to the admissibility of Exhibits 2334 and 2339, because Petitioner’s arguments regarding patentability are not persuasive for the reasons provided above, even assuming Exhibits 2334 and 2339 to be admissible.

Accordingly, we *dismiss* Petitioner’s Motion to Exclude as moot.

IV. CONCLUSION

For the foregoing reasons, we determine that Petitioner shows, by a preponderance of the evidence, that claims 1–19 of the ’055 patent are patent-ineligible under 35 U.S.C. § 101. Petitioner fails to show, by a preponderance of the evidence, that claims 1–19 of the ’055 patent are unpatentable under 35 U.S.C. § 103.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–19 of the '055 patent are patent-ineligible under 35 U.S.C. § 101;

FURTHER ORDERED that Patent Owner's Motion to Exclude Evidence is *dismissed*;

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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