No. _____

In the Supreme Court of the United States

IBG LLC and Interactive Brokers LLC,

Petitioners,

v.

Trading Technologies International, Inc.,

Respondent.

On Petition for a Writ of Certiorari to United States Court of Appeals for the Federal Circuit

PETITION FOR A WRIT OF CERTIORARI

ROBERT E. SOKOHL
Counsel of Record
BYRON L. PICKARD
RICHARD M. BEMBEN
WILLIAM H. MILLIKEN
Sterne, Kessler, Goldstein & Fox, PLLC
1100 New York Avenue, N.W.
Washington, D.C. 20005
(202) 371-2600
rsokohl@sternekessler.com
Counsel for Petitioners

QUESTION PRESENTED

The America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011), and its attendant regulations establish a program for review of the eligibility and validity of "covered business method" patents, known as CBM review. Patents for "technological inventions" are excepted from the class of "covered business method" patents that are eligible for CBM review. AIA § 18(d). Pursuant to express statutory authority, the Patent Office defined a "technological invention" as a patent that "recites a technological feature that is novel and unobvious over the prior art; and solves a technical problem using a technical solution." 37 C.F.R. § 42.301(b).

This petition presents the following question that has sharply divided panels of the Federal Circuit:

Whether a patent that does not satisfy the first prong of § 42.301(b)—that is, that does not recite a novel and non-obvious technological feature—claims a "technological invention" under AIA § 18(d).

RULE 29.6 STATEMENT

Pursuant to Supreme Court Rule 29.6, Petitioner IBG LLC states that its parent corporations are Interactive Brokers Group, Inc. and IBG Holdings, LLC. Petitioner Interactive Brokers LLC states that its parent corporation is IBG LLC.

STATEMENT OF RELATED CASES

Pursuant to Supreme Court Rule 14.1(b)(iii), Petitioners state that there are no cases directly related to the case in this Court. However, the patents involved in this case are also at issue in the following pending district-court cases involving the parties to this appeal: *Trading Technologies International, Inc. v. BGC Partners Inc.*, No. 1:10-cv-00715 (N.D. Ill.), and *Trading Technologies International, Inc. v. IBG LLC et al.*, No. 1:10-cv-00721 (N.D. Ill.).

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PETITION FOR A WRIT OF CERTIORARI

Petitioners IBG LLC and Interactive Brokers LLC (collectively, "IBG") respectfully petition for a writ of certiorari to review the judgment of the United States Court of Appeals for the Federal Circuit in this case.

OPINIONS BELOW

The Federal Circuit's opinion below is reported at 757 F. App'x 1004. Pet. App. 1a–10a. The Federal Circuit's order denying panel rehearing and rehearing en banc is unreported but is reproduced at Pet. App. 278a–285a. The underlying opinions of the Patent Trial & Appeal Board are unreported but are reproduced at Pet. App. 11a–277a.

JURISDICTION

The Federal Circuit had jurisdiction to review the decisions of the Patent Trial & Appeal Board under 28 U.S.C. § 1295(a)(4)(A). The Federal Circuit entered judgment on February 13, 2019, and denied Petitioners' timely request for rehearing on April 30, 2019. This Petition is thus timely filed under Sup. Ct. R. 13.1. This Court's jurisdiction is invoked under 28 U.S.C. § 1254(1).

STATUTORY PROVISIONS INVOLVED

The relevant statutory and regulatory provisions are reproduced in the appendix at 292a–293a.

INTRODUCTION

Congress established the covered business method review program in 2011 to accomplish an important objective: provide a means for the Patent Office to review the validity of low-quality "business method" patents, which had proliferated in the 1990s and 2000s following the Federal Circuit's decisions in *In re Alappat*, 33 F.3d 1526 (Fed. Cir. 1994), and *State Street Bank & Trust Co. v. Signature Financial Group*, 149 F.3d 1368 (Fed. Cir. 1998). As this Court observed in *Bilski v. Kappos*, many business-method patents of this era were of "suspect validity" because they merely instructed "how business should be conducted" and thus represented improper "attempt[s] to patent abstract ideas." 561 U.S. 593, 608–09 (2010).

By any measure, the CBM review program has been a resounding success. It has resulted in the cancelling of thousands of patent claims directed to abstract business tasks implemented on generic and conventional equipment. These are claims that, if allowed to stand, "would put a chill on creative endeavor and dynamic change" by providing the patentee a monopoly on the abstract business task itself. *Id.* at 608.

This case involves just those sorts of claims. The four patents at issue, owned by Respondent Trading Technologies International, Inc. ("TT"), relate to the field of electronic trading and broadly cover methods of executing trades using a graphical user interface (GUI) that shows market information in a particular

configuration (namely, along a price axis) that purportedly allows the user to process and respond to the information more efficiently. The claims do not recite any particular software or hardware that is used to accomplish this objective. They merely claim the abstract idea of placing a trade order based on displayed and dynamically updated market information, implemented on a generic computer.

After TT accused IBG of infringing these patents, IBG petitioned for CBM review, arguing, among other things, that the patents were directed to patent-ineligible abstract ideas and were thus invalid under 35 U.S.C. § 101. The Patent Trial and Appeal Board cancelled several of the challenged claims on that ground. The Federal Circuit, however, ultimately vacated all four decisions, concluding that the patents were not eligible for CBM review in the first place because they claimed a "technological invention" under AIA § 18(d).

This case presents a simple but critically important question concerning the scope of the "technological invention" exception to CBM eligibility. Title 37 C.F.R. § 42.301(b) defines a patent for a "technological invention" as one that "recites a technological feature that is novel and unobvious over the prior art[] and solves a technical problem using a technical solution." Some panels of the Federal Circuit have correctly held that both prongs of this definition must be satisfied for a patent to qualify as a "technological invention." Others, however—including the panel below—have ignored the first prong of the definition entirely and

focused only on whether the patent purportedly "solves a technical problem using a technical solution."

The latter approach is profoundly improper. It is a basic principle of administrative law that an agency regulation enacted pursuant to express statutory authority carries the force of law. That means that courts must follow such regulations, absent a finding that they are arbitrary, capricious, or manifestly contrary to the statute. The Federal Circuit has no more power to ignore the first prong of § 42.301(b) than it has to ignore a duly enacted provision of the United States Code.

What is more, the panel's approach conflates the distinct questions of *CBM eligibility* and *patent eligibility*. The panel reached its conclusion on CBM eligibility by relying on a prior Federal Circuit decision ("*CQG*") that, on a different record, found two of the four patents at issue here eligible for patenting under Section 101 because they claimed "a specific improvement to the way computers operate." Pet. App. 8a (quoting *Trading Techs. Int'l, Inc. v. CQG, Inc.*, 675 F. App'x 1001, 1006 (Fed. Cir. 2017)). Because of that prior decision, the panel here concluded that the four patents necessarily are "technological inventions" for CBM-eligibility purposes. But treating the CBM- and patent-eligibility questions as effectively coextensive makes no sense. That approach, taken to the extreme, could mean that the Board *cannot find a claim patent-eligible in a CBM review*—if the Board were to reach that conclusion, it would have to dismiss the

proceeding for lack of jurisdiction instead of deciding the case on the merits. That is an absurd result that Congress could not have intended.

Patentees, patent challengers, and the public alike are ill-served by this confused and confusing legal regime. The uncertainty engendered by the Federal Circuit's conflicting decisions needs to be laid to rest.

This Court should grant certiorari and reverse the judgment below.

STATEMENT

A. Statutory Framework

An inventor who wants a patent on his or her invention must apply to the Patent Office and demonstrate to a patent examiner's satisfaction that the claimed invention "meets the applicable patent law requirements" found in 35 U.S.C. §§ 101, 102, 103, and 112. *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2136–37 (2016). If the examiner concludes that the requirements are met, the PTO grants the inventor a patent. *See id.*

Since 1980, the Patent & Trademark Office "has also possessed the authority to reexamine—and perhaps cancel—a patent claim that it had previously allowed" if the PTO determines that the claim did not, after all, satisfy the statutory requirements for patentability. *Id.* at 2137. Such "post-grant review" can play a critical role in

identifying patents that should never have issued; "in light of the USPTO's constrained resources and the absence of material outside input during the initial examination, it is inevitable that there are patents granted in error." *Regents of the Univ. of Minn. v. LSI Corp.*, 926 F.3d 1327, 1332 (Fed. Cir. 2019).

In 2011, Congress passed the Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284, which created three new types of post-grant adjudicatory proceedings: *inter partes* review, post-grant review, and covered business method patent ("CBM") review. *See* AIA §§ 6, 18; *Return Mail, Inc. v. U.S. Postal Serv.*, 139 S. Ct. 1853, 1860 (2019). A patent challenger can initiate one of these proceedings by filing a petition that explains why, in the petitioner's view, the challenged patent should not have been allowed by the PTO. This case arises from four CBM reviews on four related patents that were initiated by IBG.

AIA § 18, which governs CBM reviews, was considered "one of the AIA's most important reforms" because it would "crack[ ]down on low-quality business method patents" that had proliferated in the years leading up to the law's passage. *Intellectual Ventures II LLC v. JPMorgan Chase & Co.*, 781 F.3d 1372, 1380 (Fed. Cir. 2015) (Hughes, J., dissenting); *see also* H.R. Rep. No. 112-98, 54 (2011) ("A number of patent observers believe the issuance of poor business-method patents during the late 1990's through the early 2000's led to the patent 'troll' lawsuits that compelled the Committee to

launch the patent reform project 6 years ago."). The CBM program is currently scheduled to sunset in 2020 (meaning no petitions will be accepted after that date). *See* AIA § 18(a)(3). Congress, however, has considered making the program permanent in light of its success in "carr[ying] out its mandate of offering a cheaper and more efficient process . . . to filter out the poor quality patents." *Assessing the Effectiveness of the Transitional Program for Covered Business Method Patents: Hearing Before the Subcomm. on* Courts, Intellectual Property, and the Internet of the H. Comm. on the Judiciary, 115th Cong. 5 (2018), https://www.govinfo.gov/content/pkg/CHRG-115hhrg32789/pdf/CHRG-115hhrg32789.pdf; *see also* Malathi Nayak, *House Panel Probes Covered Business Method Patent Challenges*, Bloomberg Law (Mar. 20, 2018), https://www.bna.com/house-panel-probes-n57982090116/.

Section 18 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, *except that the term does not include patents for technological inventions*." *Id.* § 18(d)(1) (emphasis added). The statute further directs the PTO to "issue regulations for determining whether a patent is for a technological invention." *Id.* § 18(d)(2). Pursuant to that authority, the PTO has enacted 37 C.F.R. § 42.301(b), which provides as follows:

> (b) Technological invention. In determining whether a patent is for a technological invention solely for purposes of the Transitional Program for Covered Business Methods . . . , the following will be considered on a case-by-case basis: whether the claimed subject matter as a whole recites a technological feature that is novel and unobvious over the prior art; and solves a technical problem using a technical solution.

Parties who initiate CBM reviews may challenge the patent claims on any statutory basis of invalidity, including 35 U.S.C. § 101 (eligibility and utility), § 102 (novelty), § 103 (non-obviousness), or § 112 (enablement, written description, and definiteness). *See* AIA § 18(a)(1); 35 U.S.C. § 321(b).

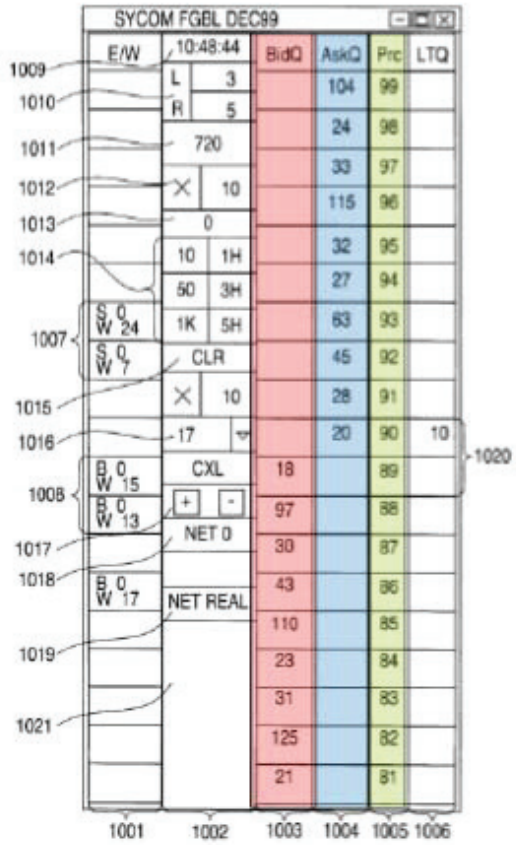
Eligibility challenges under § 101 figure prominently in many CBM reviews, because many such patents are directed to "abstract ideas" that are ineligible for patenting under this Court's § 101 jurisprudence. *See, e.g.*, *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208 (2014); *cf. In re Bilski*, 545 F.3d 943, 962 (Fed. Cir. 2008) ("[S]ome so-called business methods . . . involve the manipulation of . . . abstract constructs such as legal obligations, organizational relationships, and business risks."), *aff'd*, 561 U.S. 593. The *Alice* Court reiterated that "abstract ideas are not patentable" under § 101 and set forth a two-step analysis to "distinguish[] patents that claim . . . abstract ideas from those that claim patent-eligible

applications" of such ideas. *Id.* at 216–17. First, the court must "determine whether the claims at issue are directed to" an abstract idea. *Id.* at 217. If so, the second step asks whether the claims, either individually or "as an ordered combination," contain an "inventive concept." *Id.* at 217–18.

B. The Patents At Issue

At issue in this case is the validity of four patents owned by TT: U.S. Patent Nos. 6,766,304, 6,772,132, 7,6767,411, and 7,813,996. The patents share a specification and, generally speaking, claim methods of electronic trading using a GUI that displays "bid quantities" and "offer quantities" along a price axis. This display allows the trader easily to observe the "inside market"—i.e., the highest bid and the lowest offer—which is where most trades take place. The GUI is depicted in Figure 3 of the '304 patent:

FIG. 3



E.g., Pet. App. 24a (annotated). In this figure, 1020 represents the inside market, because it shows the highest bids (18 bids at a price of 89) and the lowest asks (20 asks at a price of 90). The trader can place orders by, for example, clicking on an "order entry region" that corresponds to a desired trade.

The claims of the four patents at issue are largely similar, with one important exception: the '304, '132,

and '996 patent claims require the price axis to remain "static," whereas the '411 patent claims do not. *See Trading Techs. Int'l, Inc. v. Open E Cry, LLC*, 728 F.3d 1309, 1315–18 (Fed. Cir. 2013) (emphasizing this distinction).

The panel here, in characterizing the patents, identified the static price axis as the critical feature of the invention. The court reasoned that, in prior-art GUIs that displayed the inside market in a stationary location on the screen, "[t]here was a risk . . . that a trader would miss her intended price as a result of prices changing from under her pointer at the time she clicked on the price cell on the GUI." Pet. App. 7a (quoting *Trading Techs. Int'l, Inc. v. CQG, Inc.*, 2015 WL 774655, at * 4 (N.D. Ill. 2015)); *see also* Pet. App. 8a–9a ("A trader might intend to click on a particular price but, between the time he decides to do so and the time he actually clicks (which may be only hundredths of a second), the price may change. He may not be able to stop the downward motion of his finger and the order would be sent to market at an incorrect or undesired price.") (citation omitted). TT's invention, however (the panel said), "keeps the prices static in position" and thus "solves this problem." Pet. App. 7a–9a (citation omitted).[1]

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[1] This analysis, even assuming it is correct on its own terms, does not apply to the '411 patent because that patent does not claim a static price axis. The panel apparently overlooked this fact.

The panel's analysis in this respect relied heavily on the Federal Circuit's non-precedential 2017 opinion in *Trading Technologies International, Inc. v. CQG, Inc.*, 675 F. App'x 1001 (Fed. Cir. 2017), which had rejected a § 101 challenge to the '304 and '132 patents. The *CQG* decision had concluded that the patents passed muster under *Alice* Step One because they "require[d] a specific, structured [GUI] paired with a prescribed functionality directly related to the [GUI]'s structure that is addressed to and resolves a specifically identified problem." *Id.* at 1004. Alternatively, the *CQG* court concluded that the claims survived *Alice* Step Two because "the static price index [w]as an inventive concept that allows traders to more efficiently and accurately place trades using this electronic trading system." *Id.*

C. The Underlying CBM Reviews

IBG petitioned for CBM review of the four patents, arguing that various claims were directed to a patent-ineligible abstract idea under 35 U.S.C. § 101 and/or were obvious under 35 U.S.C. § 103. TT defended the patents' validity on the merits and also argued that the patents were for "technological inventions" and thus ineligible for CBM review in the first place. Briefly summarized, the Board's conclusions were as follows:

First, the Board held that all the challenged patents were eligible for CBM review. The Board found that the '132, '411, and '996 patent claims did not recite a novel and non-obvious technological

feature and thus did not meet the first requirement for a "technological invention" set forth in 37 C.F.R. § 42.301(b). Pet. App. 61a; *id.* 153a; *id.* 251a. The Board also found that the '304, '411, and '996 patent claims did not solve a technical problem using a technical solution and thus did not meet the second requirement for a "technological invention" set forth in the regulation. No. 17-1732, C.A.J.A. 512; Pet. App. 156a; *id.* 254a. The problem of a trader not being able to execute trades quickly enough, the Board reasoned, was "a financial issue or a business problem, not a technical problem." No. 17-1732, C.A.J.A. 512; Pet. App. 156a; *id.* 253a.

Second, the Board held that the claims of the '411 patent and all but three dependent claims of the '132 patent were invalid as obvious under § 103. *See* Pet. App. 214a; *id.* 104a–105a.

Third, the Board held that the claims of the '996 and '411 patents were ineligible for patenting under § 101. The Board concluded that the challenged claims were "directed to the abstract, fundamental economic practice of trading based on displayed market information and user input." Pet. App. 258a; *see also id.* 164a. Moreover, the patents did not "disclose an unconventional or improved method of mapping the bid quantities, ask quantities, and price axis to the display"; instead, they simply described implementing the claimed arrangement of market information on a generic GUI. Pet. App. 259a–263a; *see also id.* 165a–167a. The claims thus lacked the "inventive concept" required to render them eligible under § 101. *See* Pet. App. 269a ("[T]he claim simply

recites the use of a generic GUI with routine and conventional functions."); *id.* 174a (same).

Finally, the Board held that the claims of the '304 and '132 patents were *not* ineligible for patenting under § 101 (even though those claims are substantively identical to the '996 patent claims that the Board held *were* ineligible). As to those patents, the Board viewed itself as bound by the Federal Circuit's non-precedential *CQG* decision, which, as noted above, held that the '304 and '132 claims were not directed to patent-ineligible subject matter. *See* Pet. App 15a; *id.* 65a.

IBG and TT filed appeals and cross-appeals of the four decisions, and the various appeals were briefed and then separately argued on the same day to a single panel of the Federal Circuit.

D. The Federal Circuit's Decision Below

The Federal Circuit vacated all four Board decisions on the ground that the patents at issue were not eligible for CBM review. The court first described its earlier decision in *CQG*, noting *CQG*'s holding that the claims of the '304 and '132 patents were "directed to solving a problem that existed with prior art GUIs . . . . that a trader would miss her intended price as a result of prices changing from under her pointer" and effected "a specific improvement to the way computers operate." Pet. App. 8a.

The court then concluded that, "if the claimed subject matter is directed to a specific improvement in the way computers operate, as [it] held in *CQG*, . . . the patents are also for a 'technological invention' under any reasonable meaning of that term." *Id.* 9a (quotation marks and citations omitted). The panel did not address whether the patents "recite[] a technological feature that is novel and unobvious over the prior art," 37 C.F.R. § 42.301(b), nor did the panel mention the Board's uncontroverted findings that the '132, '411, and '996 patents do not in fact recite a novel and non-obvious technological feature.

Finally, the court stated that it saw "no meaningful difference between the claimed subject matter of the '132 and '304 patents and that of the '411 and '996 patents for purposes of the technological invention question," and accordingly held that "the same conclusion applies in those cases as well." *Id.* 9a.

IBG petitioned for panel rehearing and rehearing en banc, arguing that the panel had erred by (i) ignoring the Board's uncontroverted findings that the '132, '411, and '996 patent claims did not satisfy the first prong of 37 C.F.R. § 42.301(b) because they did not recite a novel and non-obvious technological feature; (ii) failing to recognize that the '411 patent did not solve the purported "technological problem" identified by the panel because the '411 patent does not require a static price axis; and (iii) effectively equating *patent eligibility* under § 101 with *CBM ineligibility* under AIA § 18(d).

The Federal Circuit denied IBG's petition for rehearing, and this petition for certiorari followed.

REASONS FOR GRANTING THE PETITION

I. THE FEDERAL CIRCUIT HAS DIVIDED OVER WHETHER TO APPLY THE FULL DEFINITION OF A "TECHNOLOGICAL INVENTION" SET FORTH IN 37 C.F.R. § 42.301(b).

In deciding the CBM-eligibility question, the panel in this case effectively discarded the first prong of the PTO's definition of a "technological invention." In three of the four CBMs under review, the Board expressly found that the patent claims do not recite a novel and non-obvious technological feature. *See* Pet. App. 61a; *id.* 153a; *id.* 251a. With respect to the '132 and '411 patents, the Board premised this finding in part on its extensive invalidity analysis under § 103. *See* Pet. App. 61a; *id.* 153a–154a. The panel, however, ignored those findings.

The panel's disregard of the first prong of § 42.301(b) (and of the Board's uncontroverted factual findings that the patents did not satisfy that prong) is illustrative of a deep tension in the Federal Circuit's caselaw. In *Versata Development Group, Inc. v. SAP America, Inc.*, 793 F.3d 1306 (Fed. Cir. 2015), the first Federal Circuit case to address § 42.301(b), the court criticized the regulation at length. The court opined that the first prong of the "technological invention" definition "could be said to

be rather obvious, and not novel," because it went to "ultimate questions" of patentability, while the second prong unhelpfully "[d]efin[ed] a term in terms of itself." *Id.* at 1326. The court then "[p]ut[] [the first] part of the regulation's definition aside" and focused only on whether the patent at issue solved a technical problem using a technical solution. *See id.* at 1326–27.

The next case to address the regulation was *SightSound Technologies, LLC v. Apple Inc.*, 809 F.3d 1307 (Fed. Cir. 2015). *SightSound* concluded that the patents in question did not claim a "technological invention" because they did not satisfy the first prong of § 42.301(b). *See* 809 F.3d at 1316 (affirming Board's finding that "the combination of steps recited in the . . . patents did not amount to a technological feature that is novel and non-obvious over the prior art"). While the *SightSound* court relied on *Versata* extensively elsewhere in its opinion, the court did not mention *Versata*'s "setting aside" of the first prong of the regulation.

Finally, in *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229 (Fed. Cir. 2016), the Federal Circuit considered both prongs of § 42.301(b) and ultimately affirmed the Board's finding of CBM eligibility based on the second prong. *See id.* at 1240. *Ameranth* noted *Versata*'s criticism of the PTO's definition of a technological invention, *see id.* at 1239, but did not suggest that the first prong was no longer legally operative.

In short, two panels of the Federal Circuit—the *Versata* panel and the panel below—have disregarded the first prong of the "technological invention" definition entirely, while two other panels—the *SightSound* panel and the *Ameranth* panel—have applied the regulation as the PTO wrote it. Two other panels have noted the confusion regarding whether the first prong still applies but declined to reach the issue. *See Trading Techs. Int'l, Inc. v. IBG LLC*, 921 F.3d 1378, 1382–83 (Fed. Cir. 2019) ["*IBG III*"]; *Trading Techs. Int'l, Inc. v. IBG LLC*, 921 F.3d 1084, 1089 (Fed. Cir. 2019) ["*IBG II*"]. And, to make matters worse, just two months ago, the Federal Circuit heard an appeal from CBM reviews of another group of TT's patents—including the '768 patent, whose claims are, *by TT's own admission*, "indistinguishable" from the claims at issue here—and correctly found that the patents *were* CBM eligible. *Trading Techs. Int'l, Inc. v. IBG, LLC*, 767 F. App'x 1006 (Fed. Cir. 2019) ["*IBG IV*"]; *see* TT Suppl. Br., *Trading Techs. Int'l, Inc. v. IBG LLC*, No. 18-1489, Dkt. 84 at 9 (Fed. Cir. May 30, 2019) ("The '768 claims and those in *CQG*/*IBG I* are indistinguishable for purposes of CBM and § 101.").

It is impossible to justify the conflicting results reached in these cases. The Federal Circuit has failed to provide a coherent framework for analyzing the PTO's "technological invention" definition, which has made it impossible for patentees, patent challengers, and the public to know with any level certainty which patents are eligible for CBM review and which are not. The confusion will only continue

unless this Court intervenes and clarifies the proper contours of the analysis.

II. THE DECISION BELOW IS INCORRECT.

The panel's apparent belief that it could simply ignore the first prong of 37 C.F.R. § 42.301(b) was fundamentally misguided.

Where Congress has expressly delegated to an agency "authority . . . to elucidate a specific provision of [a] statute by regulation," regulations promulgated pursuant to that delegated authority "are given controlling weight unless they are arbitrary, capricious, or manifestly contrary to the statute." *Chevron, U.S.A., Inc. v. Natural Res. Def. Council*, 467 U.S. 837, 844 (1984); *see also* 5 U.S.C. § 706(2)(A) (court must set aside agency action that is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law"). Here, Congress expressly delegated to the PTO the power to define a "technological invention" for purposes of CBM review. *See* AIA § 18(d)(2). Pursuant to that authority, the PTO enacted 37 C.F.R. § 42.301(b). The Federal Circuit is required to follow that regulation absent a finding that the regulation is arbitrary, capricious, or inconsistent with AIA § 18.

No panel of the Federal Circuit has ever made such a finding, nor is there any basis for one. To be sure, the Federal Circuit has criticized the regulation, and it is fair to say that at least some members of the court find the PTO's definition of "technological invention" unhelpful. *See, e.g.*,

Versata, 793 F.3d at 1326. But federal courts do not have freewheeling authority to strike down (or ignore) agency regulations simply because they deem them unhelpful. Agency regulations, just like congressional statutes, bear the force of law. *See Kisor v. Wilkie*, 139 S. Ct. 2400, 2415 (2019) (a "court must give [a valid agency regulation] effect, just as the court would any law"); *accord Perez v. Mortg. Bankers Ass'n*, 135 S. Ct. 1199, 1203 (2015). Any suggestion otherwise runs contrary to bedrock principles of administrative law and the constitutional separation of powers.

The panel in this case disregarded those principles. In the CBM proceedings below, the Board expressly found that three of the four patents did not satisfy the first prong of § 42.301(b) because they did not recite a novel and non-obvious technological feature.[2] The panel improperly ignored these findings; indeed, it ignored the first prong of the definition altogether.

The panel's analysis is particularly concerning because it conflated the standard for *CBM ineligibility* under AIA § 18 with the standard for *patent eligibility* under 35 U.S.C. § 101. The panel premised its decision on *CQG*'s holding that the '132 and '304 patents improve the functioning of a

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[2] With respect to the '304 patent, the Board did not reach this issue because it found that the '304 patent did not "solve a technical problem using a technical solution." No. 17-1732, C.A.J.A 510.

computer. If that was true, the panel reasoned, "the patents are also for a 'technological invention' under any reasonable meaning of that term." Pet. App. 9a. But *CQG*, of course, did not consider *CBM* eligibility; it addressed only *patent* eligibility. *CQG* was an appeal from a district-court decision in which CBM eligibility was not (and could not have been) an issue. The panel's decision is already being cited for the proposition that a patent eligible for patenting under § 101 is categorically ineligible for CBM review under AIA § 18.[3]

That is fundamentally wrong. The threshold question whether a patent is eligible for CBM review is not the same as the merits question whether a patent passes muster under § 101. Indeed, the AIA explicitly recognizes that the standards are different. *See* AIA § 18(e) ("Nothing in this section shall be construed as amending or interpreting categories of patent-eligible subject matter set forth under section 101 . . . .").

Moreover, equating the standards—and thus making the jurisdictional question congruent with

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[3] *See* Christopher W. Adams, *The Federal Circuit Continues to Narrow the Eligibility Standards for CBM Review of Patents Under the AIA*, Lexology (Feb. 19, 2019) ("This decision suggests that patents deemed eligible under 35 USC §101 are not eligible for a CBM review."); *Wells Fargo Bank, N.A. v. United Servs. Auto. Ass'n*, Patent Owner Preliminary Response, 2019 WL 1028854 (P.T.A.B. Mar. 4, 2019); *Apple Inc. v. Universal Secure Registry*, Patent Owner's Response, 2019 WL 982836 (P.T.A.B. Feb. 28, 2019).

the merits—makes no sense. *Cf. United States v. American Trucking Ass'ns*, 310 U.S. 534, 543 (1940) (courts should avoid statutory constructions that produce an absurdity). The logical result of this rule would be that the Board *cannot validly find a patent eligible under § 101*: if the Board reached such a conclusion, it would have to immediately dismiss the proceeding for lack of jurisdiction. That disposition, in turn, would effectively wipe out any other challenges (for example, based on § 103) asserted by the petitioner—regardless of their merit—thus making § 101 the be-all-end-all of CBM review.[4] That runs contrary to the basic rule that "patent-eligible does not mean patent*able* under, e.g., 35 U.S.C. §§ 102 and 103." *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1259 n.6 (Fed. Cir. 2014). And it cannot have been what Congress intended in enacting the AIA.

III. THE QUESTION PRESENTED IS IMPORTANT AND RECURRING.

As demonstrated by the numerous Federal Circuit cases discussed above that have addressed the scope of the "technological invention" exception to CBM eligibility, the questions presented here arise frequently. And these questions will continue to arise—and continue to be answered in

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[4] Indeed, that is exactly what happened here with respect to the '411 patent: IBG's successful showing that the challenged claims were obvious under § 103 was overturned because of *CQG*'s finding that related patents were eligible under § 101.

dramatically divergent ways by different panels, thereby introducing confusion and uncertainty into the law—unless and until this Court intervenes.

It is true that the CBM program is scheduled to expire in 2020, but the Court's review is nonetheless warranted, for at least three reasons. *First*, as discussed above, in light of the program's significant success in eliminating low-quality patents, Congress has considered extending it indefinitely. *See* Dennis Crouch, *AIA Trials and the Sunsetting of Covered-Business-Method Review*, https://patentlyo.com/patent/2018/03/sunsetting-covered-business.html (Mar. 21, 2018). Accordingly, the sunset may well never take place—in which case this Court's decision would govern CBM reviews for years to come.

Second, even if the program sunsets on schedule, the Court's ruling on the CBM-eligibility issues presented in this petition would still affect a large number of cases—all those pending now, as well as all that are filed over the next two years.

Third, the question whether federal courts are entitled to disregard agency regulations promulgated pursuant to express statutory authority has implications that reach well beyond the factual context here. The Federal Circuit's apparent view that it can ignore regulations merely because it finds them unhelpful represents an affront to bedrock separation-of-powers principles that underlie our system of government. This case presents an excellent opportunity for this Court to clarify the

proper allocation of power among Congress, administrative agencies, and courts.

IV. THIS CASE PRESENTS A SUPERIOR VEHICLE FOR RESOLVING THE QUESTION PRESENTED.

This case presents the CBM-eligibility issue in particularly stark relief. Different panels of the Federal Circuit have now, in a matter of months, reached different conclusions on this question in cases involving materially indistinguishable patents. This Court, moreover, has the benefit of several opinions' worth of analysis of the PTO's "technological invention" definition. Finally, the questions presented are dispositive of the dispute between the parties, and they have been raised and extensively briefed at every level of the proceedings. This case thus presents a superior candidate for certiorari.

CONCLUSION

For these reasons, IBG respectfully requests that the Court grant the petition for certiorari.

Respectfully submitted,

ROBERT E. SOKOHL
Counsel of Record
BYRON L. PICKARD
RICHARD M. BEMBEN
WILLIAM H. MILLIKEN
Sterne, Kessler, Goldstein & Fox, PLLC
1100 New York Avenue, N.W.
Washington, D.C. 20005
(202) 371-2600
rsokohl@sternekessler.com

Counsel for Petitioners

APPENDICES

APPENDIX A

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

IBG LLC, INTERACTIVE BROKERS, LLC,
Appellants

v.

TRADING TECHNOLOGIES INTERNATIONAL, INC.,
Cross-Appellant

UNITED STATES,
Intervenor

2017-1732, 2017-1766, 2017-1769

Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. CBM2015-00161, CBM2016-00035.

IBG LLC, INTERACTIVE BROKERS, LLC,
Appellants

v.

TRADING TECHNOLOGIES INTERNATIONAL, INC.,
Cross-Appellant

UNITED STATES,
Intervenor

2017-2052, 2017-2053

Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. CBM2015-00182.

TRADING TECHNOLOGIES INTERNATIONAL, INC.,
Appellant

v.

IBG LLC, INTERACTIVE BROKERS, LLC,
Appellees

UNITED STATES,
Intervenor

2017-2054

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. CBM2015-00181.

TRADING TECHNOLOGIES INTERNATIONAL, INC.,
Appellant

v.

IBG LLC, INTERACTIVE BROKERS, LLC,
Appellees

UNITED STATES,
Intervenor

2017-2565

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. CBM2016-00031.

Decided: February 13, 2019

BYRON LEROY PICKARD, Sterne Kessler Goldstein & Fox, PLLC, Washington, DC, argued for appellants in 2017-1732, 2017-2052 and for appellees in 2017-2054, 2017-2565. Also represented

by RICHARD M. BEMBEN, ROBERT EVAN SOKOHL, JON WRIGHT; MICHAEL T. ROSATO, Wilson, Sonsini, Goodrich & Rosati, PC, Seattle, WA.

MICHAEL DAVID GANNON, Baker & Hostetler LLP, Chicago, IL, argued for cross-appellant in 2017-1732, 2017-2052 and appellant in 2017-2054, 2017-2565. Also represented by LEIF R. SIGMOND, JR., JENNIFER KURCZ; ALAINA J. LAKAWICZ, Philadelphia, PA; COLE BRADLEY RICHTER, McDonnell, Boehnen, Hulbert & Berghoff, LLP, Chicago, IL; STEVEN BORSAND, JAY QUENTIN KNOBLOCH, Trading Technologies International, Inc., Chicago, IL.

KATHERINE TWOMEY ALLEN, Appellate Staff, Civil Division, United States Department of Justice, Washington, DC, argued for intervenor. Also represented by MARK R. FREEMAN, SCOTT R. MCINTOSH, JOSEPH H. HUNT; THOMAS W. KRAUSE, JOSEPH MATAL, FARHEENA YASMEEN RASHEED, Office of the Solicitor, United States Patent and Trademark Office, Alexandria, VA.

Before LOURIE, MOORE, and REYNA, *Circuit Judges*.

PER CURIAM.

Trading Technologies International, Inc., ("TT") is the owner of U.S. Patent Nos. 6,766,304, 6,772,132, 7,676,411, and 7,813,996. All four patents share a specification and describe a graphical user

interface ("GUI") for a trading system that "display[s] the market depth of a commodity traded in a market, including a dynamic display for a plurality of bids and for a plurality of asks in the market for the commodity and a static display of prices corresponding to the plurality of bids and asks." '132 patent at 3:11–16.[1] IBG LLC and Interactive Brokers LLC (collectively, "Petitioners") petitioned for covered business method ("CBM") review of each patent.[2]

The Board instituted CBM review of each patent and issued separate final written decisions. In the proceedings involving the '304 and '132 patents, the Board upheld the patent eligibility of the claims based on our reasoning in *Trading Technologies International, Inc. v. CQG, Inc.*, 675 F. App'x 1001 (Fed. Cir. 2017). In the proceedings involving the '411 and '996 patents, the Board held that the claims were ineligible. In the proceedings involving the '132 and '411 patents, the Board also held that all claims except claims 29, 39, and 49 of the '132 patent would have been obvious.

TT appeals, among other issues, the Board's determinations regarding whether the patents are directed to a technological invention. Petitioners

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[1] Because all four patents share a specification, we cite only to the '132 patent throughout.

[2] CBM2015-00161 involved the '304 patent; CBM2015-00182 involved the '132 patent; CBM2015-00181 involved the '411 patent; and CBM2016-00031 involved the '996 patent.

appeal the Board's determinations that the claims of the '304 and '132 patents are patent eligible and that claims 29, 39, and 49 of the '132 patent would not have been obvious. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A). We vacate the decision of the Board in each case because the patents at issue are for technological inventions and thus were not properly subject to CBM review.

DISCUSSION

The proceedings on appeal stem from the Transitional Program for Covered Business Method Patents ("CBM review"), which expires next year. Leahy-Smith Am. Invents Act, Pub. L. 112-29, § 18(a) ("AIA"). Pursuant to the statute, the Board may only institute CBM review for a patent that is a CBM patent. *Id.* § 18(a)(1)(E). A CBM 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*." *Id.* § 18(d)(1) (emphasis added). Neither party disputes here that the patents at issue meet the first part of the test. The only issue is whether the patents are for technological inventions. Pursuant to its authority under § 18(d)(2), the Patent and Trademark Office ("PTO") promulgated 37 C.F.R. § 42.301(b), which requires the Board to consider the following on a case-by-case basis in determining whether a patent is for a technological invention: "whether the claimed subject matter as a whole recites a technological

feature that is novel and unobvious over the prior art" and whether it "solves a technical problem using a technical solution." We review the Board's reasoning "under the arbitrary and capricious standard and its factual determinations under the substantial evidence standard." *SightSound Techs., LLC v. Apple Inc.*, 809 F.3d 1307, 1315 (Fed. Cir. 2015).

We previously upheld the eligibility under § 101 of the '132 and '304 patents in *CQG*, 675 F. App'x at 1006. In the CBM review proceedings with regard to those patents, the Board adopted as persuasive that reasoning and conclusion. The discussion of those patents in the context of eligibility is instructive to the technological invention question. In *CQG*, the district court held that the claims were not directed to an abstract idea, stating:

> the claims are directed to solving a problem that existed with prior art GUIs, namely, that the best bid and best ask prices would change based on updates received from the market. There was a risk with the prior art GUIs that a trader would miss her intended price as a result of prices changing from under her pointer at the time she clicked on the price cell on the GUI. The patents-in-suit provide a system and method whereby traders may place orders at a particular, identified price level, not necessarily the highest bid or the lowest ask price because the invention keeps the prices static in position, and allows the quantities at each price to change.

Trading Techs. Int'l, Inc. v. CQG, 2015 WL 774655, at *4 (N.D. Ill. 2015). The district court determined that "[t]his issue did not arise in the open outcry systems, i.e. the pre-electronic trading analog of the '304 and '132 patents' claims." *Id.* We agreed "for all of the reasons articulated by the district court." *CQG*, 675 F. App'x at 1004. We concluded that "the claimed subject matter is directed to a specific improvement to the way computers operate, for the claimed [GUI] method imparts a specific functionality to a trading system directed to a specific implementation of a solution to a problem in the software arts." *Id.* at 1006 (internal citations and quotation marks omitted).

This characterization is consistent with the description of the invention in the specification. The specification states that markets with a high volume of trading result in "rapid changes in the price and quantity fields within the market grid" on a trading screen, which can cause a trader to miss his intended price. '132 patent at 2:51–60. The technical problem with prior GUIs in which the inside market remains stationary, like the one in Figure 2 of the '132 patent, is most clearly laid out in U.S. Patent App. Ser. No. 09/589,751, which is incorporated by reference in the '132 patent and issued as U.S. Patent No. 6,938,011:

> [A] trader might intend to click on a particular price but, between the time he decides to do so and the time he actually clicks (which may be only hundredths of a second), the price may change. He may not be

> able to stop the downward motion of his finger and the order would be sent to market at an incorrect or undesired price.

'011 patent at 9:35–41. The claimed invention in the patents at issue solves this problem "by displaying market depth on a vertical or horizontal plane, which fluctuates logically up or down, left or right across the plane as the market fluctuates." '132 patent at 6:65–7:2.

In the CBM proceedings involving the '132 and '304 patents, the Board agreed with *CQG* and found the claims of both patents eligible. At the same time, the Board held that the patents are not for technological inventions. If "the claimed *1008 subject matter is directed to a specific improvement to the way computers operate," as we held in *CQG*, 675 F. App'x at 1006, the patents are also for a "technological invention" under any reasonable meaning of that term. We conclude that the Board's reasoning with regard to the '132 and '304 patents is internally inconsistent and therefore arbitrary and capricious. And because we see no meaningful difference between the claimed subject matter of the '132 and '304 patents and that of the '411 and '996 patents for the purposes of the technological invention question, the same conclusion applies in those cases as well.

CONCLUSION

Based on our decision in *CQG* and the Board's adoption thereof, the Board's reasoning in

determining that the '132, '304, '411, and '996 patents are eligible for CBM review was arbitrary and capricious. We hold that these patents are "for technological inventions" under AIA, § 18(d)(1) and are therefore not subject to CBM review. Because the Board may only institute CBM review for CBM patents, we vacate.

VACATED

COSTS

No costs.

APPENDIX B

Trials@uspto.gov Paper No. 129
571.272.7822 Entered: February 17, 2017

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

v.

TRADING TECHNOLOGIES INTERNATIONAL, INC.,
Patent Owner.

Case CBM2015-00161[1]
Patent No. 6,766,304 B2

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

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[1] CBM2016-00035 has been joined with this proceeding.

Opinion for the Board filed by *Administrative Patent Judge* PLENZLER.

Opinion dissenting filed by *Administrative Patent Judge* PETRAVICK.

PLENZLER, *Administrative Patent Judge*.

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

I. INTRODUCTION

TradeStation Group, Inc. and TradeStation Securities, Inc. (collectively, "Petitioner") filed a Petition (Paper 2, "Pet.") on July 20, 2015, requesting review under the transitional program for covered business method patents of the AIA[2] of U.S. Patent No. 6,766,304 B2 (Ex. 1001, "the '304 patent"). Pursuant to 35 U.S.C. § 324, we instituted a covered business method patent review as to claims 1–40 on the ground of claims 1–40 being unpatentable under 35 U.S.C. § 101. Trading Technologies, Inc. ("Patent Owner") filed a Corrected Patent Owner Response on July 5, 2016. Paper 69 ("PO Resp."). Petitioner filed a Reply. Paper 98 ("Pet.

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

Reply"). An oral hearing in this proceeding was held on October 19, 2016. A transcript of the hearing is included in the record. Paper 123 ("Tr.").

After oral hearing, the Federal Circuit issued a decision in *Trading Technologies International, Inc. v. CQG, Inc.*, No. 2016-1616, 2017 WL 192716 (Fed. Cir. Jan. 18, 2017), determining that the claimed subject matter of the '304 patent is patent eligible under § 101. Petitioner and Patent Owner, with authorization (Paper 125), each filed supplemental briefing addressing the impact of that decision on this proceeding. Paper 128 ("Pet. Br."); Paper 126 ("PO Br.").

Petitioner filed a Motion to Exclude Evidence (Paper 103), and Patent Owner also filed a Motion to Exclude Evidence (Paper 104).

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 claims 1–40 of the '304 patent have not been shown to be unpatentable under 35 U.S.C. § 101.

II. DISCUSSION

Petitioner challenges claims 1–40 as directed to patent-ineligible subject matter under 35 U.S.C. § 101. Pet. 23–52; Pet. Reply 8–24. Patent Owner disagrees. PO Resp. 14–65. Our reviewing court also disagrees. *Trading Techs.*, 2017 WL 192716 at *4.

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). There is no dispute that 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 and brackets 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 has already decided that the claims at issue before us are not directed to an abstract idea. *Trading Techs.*, 2017 WL 192716 at *4. Petitioner provides no persuasive reason for us to ignore that guidance, particularly with respect to whether the claims are directed to an abstract idea. *See, e.g.*, Pet. Br. 3–5. For example, Petitioner offers no persuasive explanation as to why its characterization of the alleged abstract idea would affect the Federal Circuit's determination that the claims are not directed to an abstract idea. *See id.* at 5. We are also not apprised of a persuasive reason to arrive at a different outcome with respect to whether the claims are directed to an abstract idea based on the differences between the record before us and that before the Federal Circuit alleged by Petitioner. *See id.* at 3–5.

Accordingly, we follow the Federal Circuit's guidance and, in accordance with that guidance, determine the claims before us to be patent eligible. The sole issue before us is the eligibility of the challenged claims. Based on the facts of this

proceeding, we determine that it is not necessary to revisit whether the challenged patent is a covered business method patent as Patent Owner urges.

III. MOTIONS TO EXCLUDE EVIDENCE

Petitioner moves to exclude Exhibits 2029, 2211, 2220, 2222, 2224, 2225, 2228, 2232, 2247, 2251, 2274–2276, 2286–2288, and 2292–2296 (collectively, "the *eSpeed/CQG* Transcripts"); Exhibit 2223 ("the Electronic Trader Declarants Exhibits"); Exhibits 2240–2246, 2250, 2252–2273, and 2277 ("the Third Party Emails"); Exhibits 2212, 2213, and 2214 ("Brumfield Sketch and Animations"); Exhibits 2030, 2032, 2278 ("*eSpeed/CQG* Jury Verdict Forms & Docket Entry; Exhibit 2169B, ¶¶ 75, 83–86, 89–92, 94–97, 102–104, 106–111, 126–128, 131, 133–34, 136– 138, 140, 141, 151–153, 172 ("Confidential Declaration of Christopher Thomas"). Paper 103. Patent Owner moves to exclude Exhibit 1016 (TSE), Exhibit 1017 (TSE Translation, and Exhibit 1025, 57:18–58:19 (Testimony of Dan Olsen). Paper 104.

The Petitioner's Motion to Exclude Evidence and Patent Owner's Motion to Exclude Evidence are dismissed because we do not rely on the Exhibits or portions of the Exhibits in reaching our Decision.

IV. CONCLUSION

We conclude Petitioner has failed to show that claims 1–40 are unpatentable under 35 U.S.C. § 101. Patent Owner's Motion to Exclude Evidence is

dismissed. Petitioner's Motion to Exclude Evidence is dismissed.

V. ORDER

Accordingly, it is hereby:

ORDERED that claims 1–40 of U.S. Patent No. 6,384,850 B1 have not been shown to be *unpatentable*;

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 of the Board under 35 U.S.C. § 328(a), parties to the proceeding seeking judicial review of this decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

Trials@uspto.gov
571.272.7822

Paper No. 129
Entered: February 17, 2017

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

v.

TRADING TECHNOLOGIES INTERNATIONAL, INC.,
Patent Owner.

Case CBM2015-00161[3]
Patent No. 6,766,304 B2

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

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[3] CBM2016-00035 has been joined with this proceeding.

PETRAVICK, *Administrative Patent Judge*, dissenting.

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

Petitioner was not a party in the suit involved in *Trading Technologies International, Inc. v. CQG, Inc.*, No. 2016-1616, 2017 WL 192716 (Fed. Cir. Jan. 18, 2017) ("*CQG*"). Accordingly, the Federal Circuit was not placed in a position to determine the merits of the Petitioner's challenge to the patent eligibility of claims 1–40 under 35 U.S.C. § 101. Petitioner's challenge to the patent eligibility of claims 1–40 under 35 U.S.C. § 101 is based on a construction of the claims and evidence submitted in this proceeding, such as different evidence of what was routine and conventional. *See* Pet. Br. 1–5 (discussing the differences between the records in *CQG* and here). The determination of whether claims 1–40 are patent eligible under 35 U.S.C. § 101 should focus on the record here. The patent-eligibility determination reached in *CQG* was based on the different record before the District Court.

Treating *CQG* as controlling of the patent-eligibility of claims 1–40, notwithstanding a different outcome based on the record developed in this proceeding involving a different party and relying on different evidence, in effect, treats *CQG* as precedential to the patent-eligibility question in this

proceeding. Because the Federal Circuit did not in fact designate *CQG* as precedential, the possibility remains that the Federal Circuit would consider the merits of a different outcome based on a different record.

The presumption that *CQG* controls patent-eligibility of claims 1–40, notwithstanding a possible different outcome based on a different set of facts and evidence, necessarily follows from the view that the question of patent-eligibility is a pure question of law. However, if the question of patent-eligibility is question of law based on underlying facts, then underlying facts have the potential of controlling the ultimate determination. Likewise, a determination of obviousness under 35 U.S.C § 103 may depend on which prior art is applied against the claims. The Federal Circuit has not yet decided whether the question of patent-eligibility is a pure question of law or a question of law based on underlying facts.

I respectfully dissent and based on the record before us determine that the claims of the '304 patent are not directed to patent eligible subject matter under 35 U.S.C. § 101.

Background

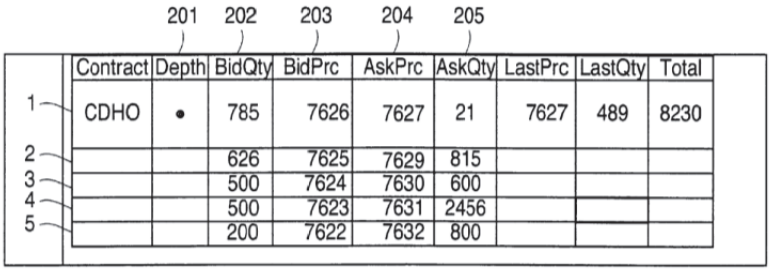
The '304 patent "is directed to the electronic trading of commodities." Ex. 1001, 1:17–18. According to the '304 patent, 80% of the total time to place an order is attributable to the time it takes for a trader to read the prices displayed and to enter a trade order, by manually entering parameters, such

as commodity symbol, the desired price, the quantity and whether a buy or sell order is desired. *Id.* at 2:28–51. "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." *Id.* at 2:51–54. The '304 patent discloses a method of trading that reduces the time it takes for a trader to place an order and, thus, increases the likelihood that the order will be filled at desirable prices and quantities. *Id.* at Abstract and 3:2–7. The method uses a graphical user interface ("GUI"), named the Mercury display. *Id.* at Abstract, 3:9–10.

Before turning to a discussion of how the Mercury display is used to enter an order on an electronic exchange, a discussion of conventional methods of trading is helpful. Figure 2 of the '304 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* Paper 22, 7 (describing the Fig. 2 GUI as "conventional") and PO Resp. 2 (describing Fig. 2 GUI as "ubiquitous by the time of the invention" of the '304 patent).

Figure 2 of the '304 patent is reproduced below.

FIG. 2



The Fig. 2 GUI displays market information in columns. *See id.* at 5:23–28, 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 5:23–28 and 6:4–12. 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 5:19–21. Rows 2–5 display the market depth, a list of next-best bids and asks. *Id.* at 5:22–26.

Prices and quantities change dynamically based on real time information from the market. *Id.* at 5:29–31. The inside market, however, is always displayed in row 1, a fixed location. PO Resp. 2–3. According to Patent Owner, "[t]his made perfect sense and was perceived by those skilled in the art at the time as a significant advantage because it emphasized focus on the primary target for the trader: the inside market" and "since the location of the inside market is always known, the trader may easily spot the target, regardless of changes in the

market." PO Resp. 5. 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 ¶ 57; *see also* Ex. 1016, 107 (depicting a trading screen having a central order price column and corresponding ask and bid quantities in adjacent columns).

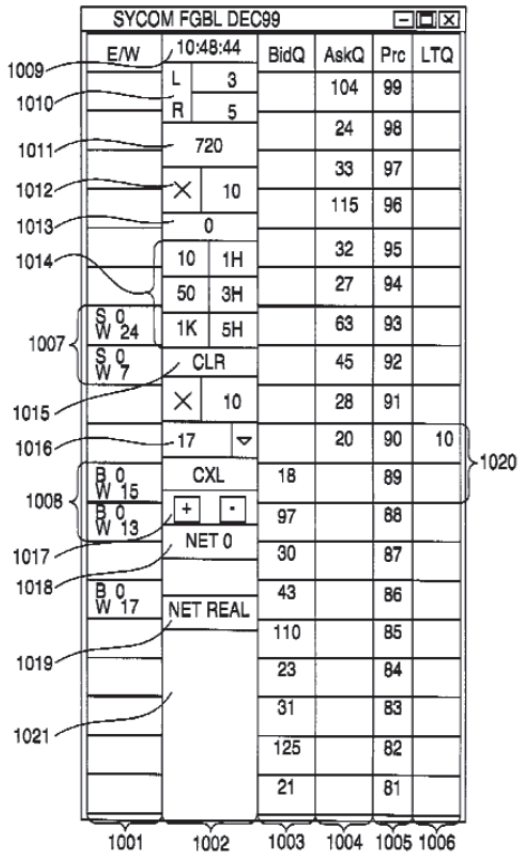
In the Fig. 2 GUI, "the user could place an order by clicking on a location (e.g., a cell) in one of the price or quantity columns." Ex. 2169 ¶ 53; *see* PO Resp. 6–7. According to Patent Owner, "these types of tools permitted 'single action' order entry that consisted of a trader presetting a default 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. 1006, 7.

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 "usually in the form of a window, with areas for a trader to fill out order parameters (e.g., price, quantity, an identification of the item being traded, buy or sell)." *Id.* at 1–2; *see also* Ex. 1001, 2:42–54 (describing a trader manually entering trade order parameters); Ex. 2169 ¶ 45.

Turning now to a discussion of how the Mercury display is used to enter an order on an electronic

exchange, the Mercury display is depicted in Figure 3 of the '304 patent. *Id.* at 3:45–46. Figure 3 is reproduced below.

FIG. 3



As can be seen in Fig. 3 above, like the Fig. 2 GUI, the Mercury display displays market information in columns. *Id.* BidQ column 1003 displays bid quantities, and AskQ column 1004 displays bid ask quantities. *See id.* at 7:54–55. The

bid and ask quantities are displayed along corresponding price levels in Prc column 1005, which is a common price axis. The inside market is displayed at 1020. *Id.*

Unlike the Fig. 2 GUI, the Mercury display values in the price column "are static; that is, they do not normally change positions unless a re-centering command is received." Ex. 1001, 7:65–67. 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 7:67–8:18. According to Patent Owner, some traders focused on trading at particular prices, not the inside market prices. PO Resp. 6–7. Like the 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. 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 9:39–11:34; Fig. 6, steps 1306–1315. In the example shown in Figure 3, a left click on "20" in column 1004 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 10:39–41.

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.").

Claim 1 of the '304 patent is representative and is reproduced below.

> 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 indictor 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.

In a covered business method patent review, claim terms in an unexpired patent are given the broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.300(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use

of the broadest reasonable interpretation standard). In the Institution Decision, we determined that the broadest reasonable interpretation of common static price axis is "a reference line or column of price levels that is common to the bid and ask display regions where the price levels do not change positions unless a re-centering command is received." Paper 29, 19–20. In its Response, Patent Owner provided an alternate interpretation. *See* PO Resp. 13. This interpretation requires that the common static price axis have plural price levels. The plain language of other limitations of claim 1 also requires the common static price axis to have plural price levels. *See* Ex. 1004, 12:56 ("fixed price levels"). The price levels must correspond to the location in the bid display region where a first indicator representing an order at the highest bid price is displayed and correspond to the location in the ask display region where a second indicator representing an order to the lowest ask price is displayed. *See id.* at 12:51–54. Claim 1, thus, encompasses a common static price axis that only displays two price levels, one corresponding to the highest bid price and one corresponding to the lowest ask price (i.e., the inside market). For example, a price column that only includes the "90" and "89" price levels of inside market 1020 of the Mercury display depicted in Fig. 3 of the '304 patent, without any of the other depicted price levels in column 1005, would be a common static price axis as required by claim 1. *See* Ex. 1001, Fig. 3.

Patent Owner implies that the claim requires displaying a greater range of price levels or price levels that have no corresponding orders. *See* PO Resp. 4 (arguing that columns 203 and 204 of the Fig. 2 GUI are not a price axis because it does not display price levels that have no orders). Neither the broadest reasonable interpretation of common static price axis nor the plain language of any other claim limitation require such or preclude an axis that does not display price levels that have no corresponding order information. The '304 patent discloses that in some situations only the inside market is displayed: "How far into the market depth the present invention can display depends on how much of the market depth the exchanged provide. Some exchanges . . . provide no market depth." Ex. 1001, 5:7–11.

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*, 134 S. Ct. at

2354; *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).

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 displayed market information, as well as updating market information," which is a "'fundamental economic practice long prevalent in our system of commerce.'" Pet. 35 (quoting *Alice*, 134 S. Ct. at 235); Pet. Reply 16. This is consistent with claim 1 of the '304 patent.

Claim 1 of the '304 patent recites "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." Ex. 1001, 12:35–38. Claim 1 recites two steps of displaying market information, bid and ask quantities, in regions along a common static price axis. *Id.* at 12:41–54. 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 12:55–61. 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 12:41–13:3. As can be seen from its steps, the focus of claim 1 is placing trade orders based on displayed market information (i.e., the inside market), as well as updating the market information. This focus is consistent with the '304 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 1:7–23. The focus of claim 1 is also consistent with the problem disclosed by the '304 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 2:41–67.

Claim 1 does not recite any limitations 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 common static price axis and ask quantities are displayed in an ask region at locations that correspond to prices along the common static price axis. *Id.* at 12:41–55. Claim 1 does not specify how the computer maps the bid quantities, ask quantities, and price axis to the display. The '304 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 5:3–7.

The '304 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 1:27–2:67. Similarly, Patent Owner's declarant Christopher H. 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 the inside market price. Ex. 2169 ¶¶ 31, 57, and 58; Ex.

1015. 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 prices that improves the best bid/offer." Ex. 2169 ¶ 31. Given this, placing an order based on displayed market information, such as the inside market, as well as updating the market information is a fundamental economic and conventional business practice.

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 '304 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 '304 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. 5–8. 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 6–8. Patent Owner contends that the '304 patent solves this problem by having a common static price axis, where the prices do not normally move. *Id.* at 8–12. The problem of a price changing just as a trader clicks on the price is not disclosed in the '304 patent. Patent Owner relies upon the

testimony of Mr. Thomas to show that such a problem existed with the Fig. 2 GUI. *See* PO Resp. 6–8 (citing Ex. 2169 ¶¶ 79–80). The testimony of Mr. Thomas, however, indicates that displaying the inside market at a fixed location, while the displayed prices change as the market changes, is only a problem if the trader is focused on trading at a particular price, not on the inside market price. *Cf.* Ex. 2169 ¶ 58 ("focus on the primary target for the traders: the inside market") and ¶ 80 ("focused on particular prices than market prices as many other traders were"). For traders focused on trading at the inside market price, the Fig. 2 GUI is advantageous over the Mercury Display—"[s]ince the location of the inside market is always known, the trader may easily spot the target, regardless of changes in the market." Ex. 2169 ¶ 58. For traders focused on trading at the inside market price, the Mercury Display may be problematic because the inside market is not fixed, the location of the inside market may move up and down the price axis as the market changes, and the inside market could move as the trader clicked on the inside market. *See* Tr. 64:18–66:2; PO Resp. 35 (stating that the Mercury Display "required the trader to 'chase' the inside market due to its movement relative to the axis"). Thus, the trader could miss their intended price (i.e., the inside market price). In both Fig. 2 GUI and the Mercury Display, the inside market and prices move relative to each other. The difference between the Fig. 2 GUI and the Mercury Display is whether the inside market or price remains static. That difference is based upon the focus of the trader, and is not a

problem with the technology. The fact that some traders focus on price and some traders focus on the inside market is not a problem necessarily rooted in computer technology that overcomes a problem specifically arising in the realm of computer networks; it is a difference in the preferences of a trader. *See* Pet. Reply 3–7.

Further, claim 1 of the '304 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 135. Here, the claims merely organize existing market information. As discussed above, the claims merely reorganize market information so that the focus of a trader does not normally move.

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." *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.

First, claim 1 of the '304 patent recites "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." Ex. 1001, 12:35– 39. The '304 patent discloses that its system can be implemented "on any existing or future terminal or device" (*id.* at 4:9–15), 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.[4] "Limiting the field of use of the abstract idea to a particular existing technological environment does not render any claims less abstract." *Affinity Labs*, 838 F.3d at 1258 (citing *Alice*, 134 St. Ct. at 2358; *Mayo*, 132 S. Ct. at 1294).

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[4] The '304 patent was also the subject of CBM2014-00136. In CBM2014- 00136, 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. 1006, 25.

Second, claim 1 recites steps of displaying indicators representing a quantity associated with an order to buy the commodity or an order to sell the commodity in a bid display region or ask display region, respectively. Ex. 1001, 12:41–56. Locations in the bid or ask display region correspond to a price level along a common static 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. 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, 5:24–29. 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. 2016 ¶ 57; *see also* Ex. 1016, 107, Ex. 1019, 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 '304 patent states:

> the 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.

Id. at 4:66–5:7.

Claim 1 requires that the price levels are static (i.e., they do not change positions unless a re-centering command is received). The '304 patent discloses that re-centering is desirable when the inside market goes above or below the displayed price column because the trader will want to be able to see the inside market. *Id.* at 9:14–17. Fixing the location of the target or focus of the trader was known in the prior method of trading using a GUI. *See* Ex. 2169 ¶ 58, PO Resp. 6–7. 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. *Id.* at 12:62–13:3. 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. 6–7 and Ex. 1006, 12. The additional elements must

be more that "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, I would have determined that 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 '304 patent includes a similar combination of elements.

For the reasons discussed above, I respectfully dissent and determine that the claims of the '304 patent are not directed to patent eligible subject matter under 35 U.S.C. § 101.

PETITIONER:
John C. Phillips
Kevin Su
Robert Sokohl
Michael Rosato
Matthew Argenti
phillips@fr.com
CBM14919-0005CP1@fr.com
Rsokhol-ptab@skgf.com
mrosato@wsgr.com
margenti@wsgr.com

PATENT OWNER:

Erika H. Arner
Rachel Emsley
Joshua Goldberg
Kevin Rodkey
Michael Gannon
Leif Sigmond
Steven Borsand
Cory Bell
Jennifer Kurcz
Jay Knobloch
Erika.arner@finnegan.com
Rachel.emsley@finnegan.com
Joshua.goldberg@finnegan.com
Kevin.rodkey@finnegan.com
gannon@mhbh.com
sigmond@mbhb.com
steve.borsand@tradingtechnologies.com
cory.bell@finnegan.com
kurcz@mbhb.com
jay.knobloch@tradingtechnologies.com

APPENDIX C

Trials@uspto.gov Paper No. 129
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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 CBM2015-00182
Patent No. 6,772,132 B1

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

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

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

PLENZLER, *Administrative Patent Judge.*

FINAL WRITTEN DECISION
Covered Business Method Patent Review
37 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 1–56 (the "challenged claims") of U.S. Patent No. 6,772,132 B1 (Ex. 1001, "the '132 patent"). Paper 7 ("Pet."). Trading Technologies International, Inc. ("Patent Owner") filed a Preliminary Response. Paper 15 ("Prelim. Resp."). On March 3, 2016, we instituted a covered business method patent review (Paper 19, "Institution Decision" or "Inst. Dec.") based upon Petitioner's assertion that claims 1–56 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. 39.

Subsequent to institution, Patent Owner filed a Patent Owner Response (Paper 67, "PO Resp.") and Petitioner filed a Reply (Paper 96, "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 122 ("Tr.").

After oral hearing, the Federal Circuit issued a decision in *Trading Technologies International, Inc., v. CQG, Inc.*, No. 2016-1616, 2017 WL 192716 (Fed. Cir. Jan. 18, 2017), determining that the claimed subject matter of the '132 patent is patent eligible under § 101. Petitioner and Patent Owner, with authorization (Paper 125), each filed supplemental briefing addressing the impact of that decision on this proceeding. Paper 128 ("Pet. Br."); Paper 126 ("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, 30–38, 40–48, and 50–56 of the '132 patent are unpatentable under 35 U.S.C. § 103. Petitioner has failed to show claims 29, 39, and 49 are unpatentable under § 103 and that claims 1–56 are directed to patent ineligible subject matter under 35 U.S.C. § 101.

B. Related Proceedings

The parties indicate that the '132 patent is the subject of numerous related U.S. district court proceedings, as well as the Federal Circuit Decision noted above. Pet. 2; Paper 10, 2–6; Paper 124, 1.

The '132 patent was the subject of petitions for covered business method patent review in *TD Ameritrade Holding Corp. v. Trading Technologies International, Inc.*, CBM2014-00135 (PTAB) and *CQG, Inc. v. Trading Technologies International, Inc.*, CBM2015-00058 (PTAB). Trial was instituted, but later terminated, for CBM2014-00135. Institution was denied for CBM2015-00058.

Numerous patents are related to the '132 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	1-56
TSE[1] and Belden[2]	§103	1–3, 7–10, 14–16, 20–28, 30–38, 40–48, and 50–56
TSE, Belden, and May[3]	§103	4, 11, and 17
TSE, Belden, and Gutterman[4]	§103	5, 6, 12, 13, 18, 19, 29, 39, and 49

Petitioner provides testimony from David Rho (Ex. 1006; "the Rho Declaration) and Kendyl A. Román (Ex. 1007; "the Román Declaration") to support its challenges. Patent Owner provides testimony from Christopher H. Thomas. Ex. 2169 ("the Thomas Declaration").

D. The '132 Patent

The '132 patent is titled "Click Based Trading with Intuitive Grid Display of Market Depth." Ex. 1001, [54]. The '132 patent describes a display,

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[1] Tokyo Stock Exchange Operation System Division, Futures/Option Purchasing System Trading Terminal Operation Guide (1998) (Ex. 1016). Citations to this reference refer to its English translation (Ex. 1017).

[2] PCT Pub. No. WO 90/11571, pub. Oct. 4, 1990 (Ex. 1012, "Belden").

[3] CA 2 305 736 A1, pub. Apr. 22, 1999 (Ex. 1013, "May").

[4] U.S. Pat. No. 5,297,031, iss. Mar. 22, 1994 (Ex. 1011, "Gutterman").

named the "Mercury" display, and method of using the display to trade a commodity. *Id.* at Abstract, 3:5–10. The '132 patent explains that the Mercury display is a graphic user interface ("GUI") that dynamically displays the market depth of a commodity traded in a market and allows a trader to place an order efficiently. *Id.* at 3:11–24. The Mercury display is depicted in Figure 3, which is reproduced below.

FIG. 3

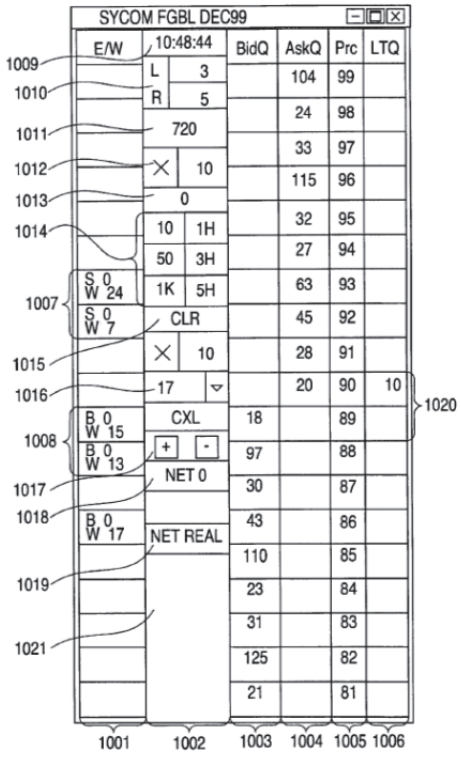

Figure 3 of the '132 patent illustrates an example of the Mercury display with example values for trading a commodity including prices, bid and ask quantities relative to price, and trade quantities.

The Mercury display includes a plurality of columns. Column 1005 is a static price axis, which includes a plurality of price values for the commodity. *See id.* at 7:36–48. The '132 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 7:38–40. Columns 1003 and 1004 are aligned with the static price axis and dynamically display bid and ask quantities, respectively, for the corresponding price values of the static price axis. *See id.* at 7:35–51. The '132 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 4:61–5:1.

Column 1002 contains various parameters and information used to execute trades, such as the default quantity displayed in cell 1016. *See id.* at 8:3–37. A trader executes trades using the Mercury display by first setting the desired commodity and default parameters, such as default quantity. *See id.* at 9:3–17; 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 9:7–10:3; Fig. 6, steps 1306–1315.

E. Illustrative Claim

As noted above, Petitioner challenges claims 1–56. Claims 1, 8, and 14 are independent. Claim 1 is illustrative of the claimed subject matter and is reproduced below:

> 1. A method of placing a trade order for a commodity on an electronic exchange having an inside market with a highest bid price and a lowest ask price, using a graphical user interface and a user input device, said method comprising:
>
> setting a preset parameter for the trade order
>
> displaying market depth of the commodity, through a dynamic display of a plurality of bids and a plurality of asks in the market for the commodity, including at least a portion of the bid and ask quantities of the commodity, the dynamic display being aligned with a static display of prices corresponding thereto, wherein the static display of prices does not move in response to a change in the inside market;
>
> displaying an order entry region aligned with the static display prices comprising a plurality of areas for receiving commands from the user input devices to send trade

orders, each area corresponding to a price of the static display of prices; and

selecting a particular area in the order entry region through single action of the user input device with a pointer of the user input device positioned over the particular area to set a plurality of additional parameters for the trade order and send the trade order to the electronic exchange.

Ex. 1001, 12:2–27.

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 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).

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[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 triers of fact, we do not find such information particularly helpful.

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 '132 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. 27–30; Pet. Reply 9. For purposes of this Decision, we determine that only the "single action" limitations require an express construction in order to conduct properly our analysis discussed below.

Petitioner contends that

> The '132 patent specification defines this term: "Any action by a user within a short period of time, whether comprising one or

> more clicks of a mouse button or other input device, is considered a single action of the user for the purposes of the present invention." ('132 patent, 4:15-20; Román Decl. ¶ 78.)

Pet. 14. Patent Owner does not dispute this construction, which we adopted in our Institution Decision. Inst. Dec. 8. We are apprised of no reason to change that construction.

Each of the independent claims recites the "single action." The relation of the "single action" to the subsequent language in the claims merits discussion. Claim 1 recites "selecting a particular area in the order entry region through single action of the user input device . . . to set a plurality of additional parameters for the trade order and send the trade order to the electronic exchange." Claim 8 similarly recites

> a fourth program code for receiving a command as a result of a selection of a particular area in the order entry region by a single action of the user input device . . . , to set a plurality of additional parameters for the trade order and send the trade order to the electronic exchange.

Claim 14 recites

> a trade order sending component for receiving a command as a result of a selection of the area in the order entry region by a single

> action of the user input device . . . , to set a plurality of additional parameters for the trade order and send the trade order to the electronic exchange.

In our Institution Decision, we made a preliminary determination that the "single action" recited in claims 1, 8, and 14 does not require setting the additional parameters or sending the trade order. Inst. Dec. 10. Rather, we determined that the claims require that the *selection* of the area in the order entry is accomplished by the "single action," and that the "single action" *allows for* additional parameters to be set and the trade order to be sent. *Id.* Petitioner agrees with that construction. Pet. Reply 9. Patent Owner disagrees. PO Resp. 27–28.

Patent Owner responds that

> A trader order is an electronic message that includes the parameters of a desired order. The plain language is understood to mean that the "single action of the user input device" refers to both "set[ting] a plurality of additional parameters" and "send[ing] the trade order to the electronic exchange" (claim 1, similarly claims 8 and 14). Ex.2169, ¶30. The BRI requires that the single user action *both* set the additional parameters for the trade order and *also* send the trade order to an electronic exchange by selecting a particular area of the order entry region. *Id.*

Id. at 28. Patent Owner additionally points out that the claims require that the order entry region is "for receiving commands . . . to send trade orders." PO Resp. 68. Upon further consideration, we agree with Patent Owner and determine that our initial construction was overly broad.

Because the "order entry region" is "for receiving *commands . . . to send* trade orders," it follows that the selection of the area in the order entry via the "single action" does not simply provide an opportunity for a user to set the additional parameters and send the trade order, such as via a subsequent pop-up window. Rather, as plainly recited in the claims, the "order entry region," itself, receives the commands to send trade orders. This is consistent with the only embodiment discussed in the specification of the '132 patent, which includes setting trade parameters and sending a trade order based on a single action. *See* Ex. 1001, 9:61–11:11. Petitioner fails to apprise us of any contrary understanding, consistent with the Specification, where the "order entry region" would "receiv[e] *commands . . . to send* trade orders."

Accordingly, we determine that the "order entry region" recited in claims 1, 8, and 14 receives commands to send trade orders, including commands to "set a plurality of additional parameters for the trade order and send the trade order" as the result of a "single action of the user input device with a pointer of the user input device positioned over the particular area."

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 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 this Petition, Petitioner contends that "while a patent need only one claim directed to a CBM to be eligible for CBM review . . . all the claims qualify," and particularly cites claims 1, 4–8, and 14. 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 a method

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

of placing a trade order for a commodity on an electronic exchange including the steps of displaying market information and sending a trade order, which are financial in nature. *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 . . . a plurality of bids and a plurality of asks in the market for the commodity" and "selecting a particular area in the order entry region . . . to . . . send the trade order to the electronic exchange," which are recited in the claim.

Patent Owner does not dispute that the claims are directed to 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. Patent Owner's contentions are unpersuasive. *See* PO Resp. 22–24.

Claim 1 encompasses processing financial data associated with a commodity for display and processing financial data for sending a trade order for a commodity to an exchange. *See* Ex. 1001, 4:62–66 ("[t]he present invention processes this information and maps it . . . to a screen."); 11:12–14 ("[t]he process for placing trade orders using the Mercury display"), 12:2–27. 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. 23–24 (discussing only whether the '132 patent claims "data processing"). The '132 patent, thus, at least claims "other operations used in the practice, administration, or management of a financial product or financial service" (AIA § 18(d)(1)).

For the reasons stated above, and based on the particular facts of this proceeding, we conclude that the '132 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 a technological feature that is novel and unobvious over the prior art; and 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 (Aug. 14, 2012).

Both prongs must be satisfied in order for the patent to be excluded as a technological invention. *See Versata*, 793 F.3d at 1326–27; *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 determined that the second prong—that the claimed subject matter as a whole does not solve a technical problem using a technical solution—was met).

Patent Owner focuses on whether the claims "solve[] a technical problem using a technical

solution." PO Resp. 24–27. 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. 24. That is incorrect. Petitioner contends that rather than reciting a technical feature that is novel or unobvious over the prior art, the claims of the '132 patent generally recite trading software that is implemented on a conventional computer. Pet. 5–7. That was specifically noted in our Institution Decision. Inst. Dec. 15.

We are persuaded by Petitioner's contentions that at least claim 1 of the '132 patent does not recite a novel and non-obvious technological feature. The specification of the '132 patent treats as well-known all potentially technological aspects of the claims. For example, the '132 patent discloses that its system can be implemented "on any existing or future terminal or device" (Ex. 1001, 4:4–7), each of which is known to include a display, and discloses that the input device can be a mouse (*id.* at 4:9–11), which is a known input device. The '132 patent further discloses that "[t]he scope of the present invention is not limited by the type of terminal or device used." *Id.* at 4:7–9. The '132 patent also describes the programming associated with the GUI as insignificant. *See, e.g.*, Ex. 1001, 4:62–5:1 (explaining that "[t]he 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 '132 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 determine that at least claim 1 does not satisfy the first prong of 37 C.F.R. § 42.301(b).

3. Conclusion

In view of the foregoing, we conclude that the '132 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 1–56 as directed to patent-ineligible subject matter under 35 U.S.C. § 101. Pet. 14–26; Pet. Reply 1–8. Patent Owner disagrees. PO Resp. 5–22. Our reviewing court also disagrees. *Trading Techs.*, 2017 WL 192716 at *4.

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 8–13, 30–39, and 51 are "broad enough to encompass a transitory, propagating signal that is encoded, which is not eligible for patenting." Pet. 18 (citing *In re Nuijten*, 550 F.3d 1346, 1357 (Fed. Cir. 2007)); Pet. Reply 8. Claims 8–13, 30–39, and 51 recite a "computer readable medium having program code recorded thereon." 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. 18. Petitioner explains that the specification neither defines this term nor provides examples. In our Institution Decision, we made an initial determination that the broadest reasonable interpretation of "computer readable medium having program code recorded thereon" 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" to encompass a signal at the time of the invention. PO Resp. 22.

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 it has applied in thousands of matters." Pet. Reply 8 (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. 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 "computer readable medium having program code *recorded* thereon" 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.

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 and brackets 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 has already decided that the claims at issue before us are not directed to an abstract idea. *Trading Techs.*, 2017 WL 192716 at *4. Petitioner provides no persuasive reason for us to ignore that guidance, particularly with respect to whether the claims are directed to an abstract idea. *See, e.g.*, Pet. Br. 3–5. For example, Petitioner offers no persuasive explanation as to why its characterization of the alleged abstract idea would affect the Federal Circuit's determination that the claims are not directed to an abstract idea. *See id.* at

5. We also are not apprised of a persuasive reason to arrive at a different outcome with respect to whether the claims are directed to an abstract idea based on the differences between the record before us and that before the Federal Circuit alleged by Petitioner. *See id.* at 3–5.

Accordingly, we follow the Federal Circuit's guidance and, in accordance with that guidance, determine the claims before us to be patent eligible.

E. TSE Challenges

Petitioner challenges claims 1–3, 7–10, 14–16, 20–28, 30–38, 40–48, and 50–56 as having been obvious over TSE and Belden, claims 4, 11, and 17 as having been obvious over TSE, Belden, and May, and claims 5, 6, 12, 13, 18, 19, 29, 39, and 49 as having been obvious over TSE, Belden, and Gutterman ("the TSE challenges").

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. 1019.

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. 1017, 1.[7] 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. 1019, 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. 7 Ex. 1019, 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. 1019, 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

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[7] References are to pages located at center bottom of the English translation of TSE (Ex. 1017).

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 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.[8] 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. 1019, 12, 14. Based on the evidence before us, the participants were securities companies for banks. The purpose of

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[8] We understand the then "participants" included such companies as Goldman Sachs Securities, Merrill Lynch, and Morgan Stanley. Ex. 2163, 58:5–17; Ex. 2169 ¶ 33.

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. 1019, 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. 1017, 10–25. Chapter 15, entitled "Response To A 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.[9] Thus, the securities companies would

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[9] We made a similar finding in our Decision to Institute (Inst. Dec. 28), thereby putting Patent Owner on notice of such finding in support of our determination that TSE was

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[10]

Patent Owner argues that the evidence fails to prove TSE is prior art. PO Resp. 59–66. We begin by addressing Patent Owner's assertions that Mr. Kawashima's testimony should be given little or no weight because his testimony is not corroborated and he is an interested witness. *Id.* at 64–66. 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 65. Patent Owner further argues that the Tokyo Stock Exchange wanted the Japanese Patent Office to rely on "these documents" to prevent TT from obtaining the Japanese patent. *Id.* (citing Ex. 2163, 39:23–40:20, 42:14– 43:10; Ex. 1019, 110:10–14). Patent Owner concludes that because Kawashima's employer tried to use TSE to prevent TT from obtaining the 6,766,304 patent, Kawashima is not disinterested. *Id.*

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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.

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

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 Petitioners' attorneys prior to his cross-examination is demonstrative of "bias." PO Resp. 66. 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. 64–65. In support of the argument, Patent Owner cites to cases regarding an *interested witness*. *See, e.g.*, *id.* at 64. 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. 1019) are supported by a preponderance of the evidence and are undisputed.[11] 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.

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[11] 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. 1019) 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. 60–63. 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.")).

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.*, *In re Enhanced Sec. Research, LLC*, 739 F.3d 1347, 1354 (Fed. Cir. 2014); *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1569 (Fed. Cir. 1988); *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1348 (Fed. Cir. 2016). Rather, accessibility goes to the issue of whether persons interested 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. 1019, 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. 61–62. 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. 1019, 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 ¶ 33.

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. 61–62. 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. 62–63. We determine above, that the record evidence supports a determination that TSE was publically accessible to persons interested or even 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.

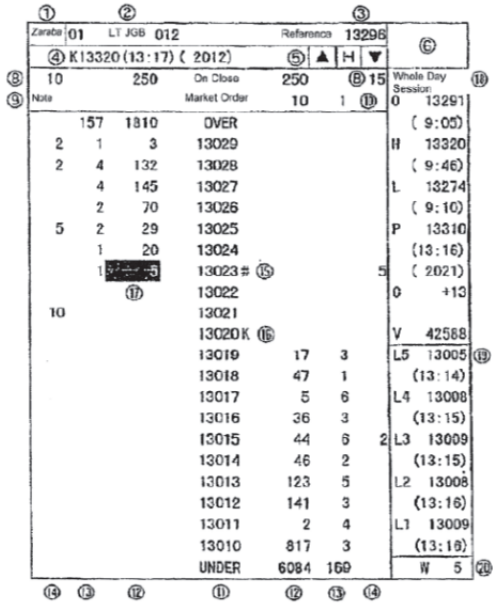
2. TSE and Belden – Claims 1–3, 7–10, 14–16, 20–28, 30–38, 40– 48, and 50–56

a. Claims 1, 8, and 14

With respect to claims 1, 8, and 14, Petitioner cites TSE as teaching the majority of limitations of the claims. Pet. 64–72. Petitioner cites Belden for

the "single action" limitation in the claims, including the "setting" and "sending" via the "single action," and proposes modifying TSE accordingly. *Id.* at 63–64, 69–72.

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. 1017, 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.

"setting a preset parameter for the trade order"

Petitioner contends that TSE teaches "setting a preset parameter for the trade order." Pet. 66 (citing Ex. 1017, 72–75, 91–102; Ex. 1007 ¶¶ 148– 149). We agree with Petitioner's contentions, which are not disputed by Patent Owner. TSE explains, for example, that trade orders can be set up as "Own Company" or "Commissioned" orders (Ex. 1017, 72–

73), and further explains that "[t]he maximum order input volume can be set in advance" (*id.* at 74). Accordingly, we find that TSE teaches "setting a preset parameter for the trade order."

"displaying market depth"

Claims 1, 8, and 14 each recite "displaying market depth of the commodity, through a dynamic display of . . . bids and . . . asks . . . aligned with a static display of prices corresponding thereto," and further specifies that "the static display of prices does not move in response to a change in the inside market." The '132 patent explains that "[a] commodity's market depth is the current bid and ask prices and quantities in the market." Ex. 1001, 3:59–61. It is readily apparent, and there is no dispute, that TSE teaches displaying current bid and ask quantities in the market and their corresponding prices, and that those quantities are dynamically displayed. The bid and ask quantities and their associated process are clearly shown in Petitioner's annotated version of TSE's Board Screen ("Román's FIG. C"), reproduced below.

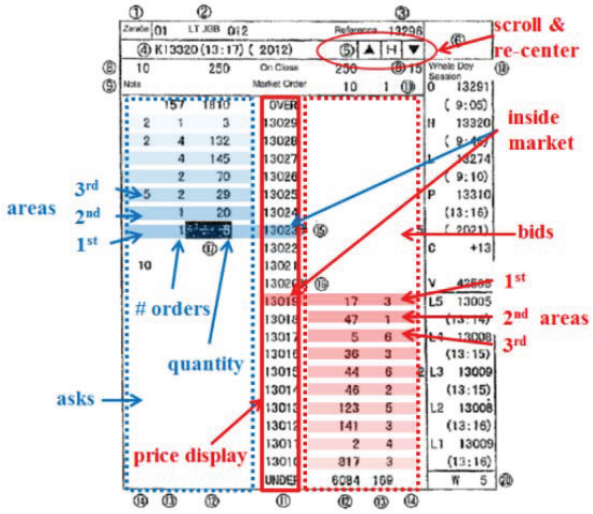


FIGURE C

"Román's FIG. C" is an annotated version of the figure illustrated on page 107 of TSE depicting a Board Screen, and is found at page 76 of the Román Declaration. Mr. Román's annotations indicate the portions of the Board Screen considered to correspond to various claim elements. As for the display of bid and ask quantities being "dynamic," as Petitioner notes (Pet. 67), TSE specifically explains that the "[b]oard and quotation information is automatically updated at three-second intervals" (Ex. 1017, 91).

The dispute with respect to this limitation is whether TSE's price display is a "static display of prices [that] does not move in response to a change in the inside market" as required by the claims. With respect to the display of prices being "static,"

Petitioner cites TSE's discussion of the "Scroll Screen" mode. Pet. 68 (citing Ex. 1017, 91, 115–116). Patent Owner responds that "the [person of ordinary skill in the art] would not have understood TSE's screen to have a price axis with relative movement, as contemplated by Petitioners," without any meaningful explanation to support that conclusion. PO Resp. 67. Patent Owner further contends that "the [person of ordinary skill in the art] would have rejected [TSE's] price axis with relative movement as counter to the conventional wisdom to fix the inside market's location to conserve screen real estate" and "would not understand relative movement of the indicators to be the purpose, but rather—at most—a necessary evil." *Id.* at 66–67.

The portions of TSE cited by Petitioner explicitly state that "in a 'Scrolling Screen,' the price display positions do not change automatically" (Ex. 1017, 115), and that "Board information is automatically updated even if the screen has been scrolled" (*id.* at 116). That is, the display of prices remains static while the corresponding bid and ask quantities change. This understanding of TSE is supported by Mr. Román's testimony. *See* Ex. 1007 ¶¶ 152–154. Patent Owner cites no authority to support its position that we should disregard the express teachings of a reference because those teachings may be something unconventional.

Accordingly, we find that TSE teaches the "displaying market depth" limitation.

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

Claims 1, 8, and 14 each additionally recite an "order entry region" aligned with the "static display of prices." As explained above in our discussion of claim construction, the "order entry region" recited in claims 1, 8, and 14 receives commands to send trade orders as the result of a "single action of the user input device with a pointer of the user input device positioned over the particular area."

Petitioner proposes combining the teachings of Belden with those of TSE when addressing these limitations. Pet. 69–72. Belden "relates to computer-based techniques for replicating a physical market for trading items such as stocks . . . and the like." Ex. 1012, 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. 68 (citing Ex. 1017, 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 'areas for receiving' along a price axis." *Id.* at 68–69 (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 69. 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.* at 69.

The problem with Patent Owner's response is that it does not address the *combined* teachings of TSE and Belden asserted by Petitioner. There is no dispute, and we agree, that Belden teaches the "single action sending" asserted by Petitioner. *See, e.g.*, Ex. 1012, 12, 33. As noted above, Petitioner's challenge proposes modifying TSE to include Belden's "single action" sending. Pet. 69–72. Specifically, under Petitioner's proposed combination, as illustrated in Román's FIG. C, the "three exemplary areas associated with bids and three exemplary areas associated with asks ('1st,' [']2nd,' and '3rd')" are "order entry regions" with "[e]ach of the displayed bids and asks include[ing] an area that can receive commands from the user input device." *Id.* at 69. Patent Owner acknowledges that "selecting an area along [TSE's] price axis . . . opens a separate order entry window" and allows the "user [to] perform additional steps, such as entering an order quantity and clicking 'send,' to send the order." PO Resp. 68 (citing Ex. 1017, 137, 142). We agree that TSE teaches this feature. *See, e.g.*, Ex. 1017, 137. When modified by Belden's teachings, selecting one of TSE's order entry regions (labeled 1st, 2nd, and 3rd areas in areas in Román's FIG. C) sets a trade

parameter and sends a trade order, rather than opening a separate window. Accordingly, under this combination, TSE's order entry region "receiv[es] commands from the user input devices to send trade orders" and meets the "single action" limitations.

Rationale for combination

Petitioner provides persuasive rationale for combining Belden's teachings with those of TSE (Pet. 63–64), which Patent Owner does not dispute (*see* PO Resp. 66–70), and we adopt as our own. That rationale is supported both by Mr. Román's testimony and the express teachings of Belden. For example, Petitioner reasons that "a [person of ordinary skill 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. 64 (citing Ex. 1007 ¶ 141). Petitioner also notes Belden's express teaching that "a trader 'benefits from the speed with which he can take or liquidate positions'." *Id.* (quoting Ex. 1012, 4).

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, 8, and 14 are taught by the combination of TSE and Belden, and that one skilled in the art would have combined those teachings.

b. Claims 2, 3, 9, 10, 15, and 16

Claims 2, 9, and 15 depend from claims 1, 8, and 14, respectively, and further recite that the

> trade order is a buy order if the position of the pointer at the time of said single action is within a bid order entry region and wherein said trade order is a sell order if the position of the pointer at the time of said single action is within an ask order entry region.

Petitioner cites TSE as teaching an order being buy or sell depending on the location clicked. Pet. 72 (citing Ex. 1017, 137). There is no dispute, and we agree, that this limitation is taught by TSE, as can be seen in Román's FIG. C above.

Claims 3, 10, and 16 depend from claims 2, 9, and 15, respectively, and further recite that the "trade order is for a pre-determined fixed quantity and for a price corresponding to the position of the pointer at the time of said single action." Petitioner cites TSE as teaching the "trade order is . . . for a price corresponding to the position of the pointer at the time of said single action," as well as other automatic settings. Pet. 72. Petitioner cites Belden for the "trade order [being] for a pre-determined fixed quantity." *Id.* (citing Ex. 1012, 26, 33–34). Petitioner relies on the same rationale noted above for combining Belden's teachings with those of TSE, such as increasing speed and reducing potential for errors. *See id.* at 63–64.

Patent Owner responds that, in Belden, "[t]he quantity is not 'fixed' because part of the order could be filled by another trader as the user clicks the icon, and the user would therefore trade another quantity," the quantity is not "pre-determined" because the quantity is not defined by the action (clicking) but instead by the underlying icon, which can change," and "the amount of the trade order in Belden is not determined until *after* the icon is clicked." PO Resp. 70. Patent Owner's contentions are not persuasive. With respect to claims 3, 10, and 16, Petitioner cites Belden for simply teaching selecting a trade order for a fixed predetermined quantity.

Belden describes presenting trading information on a display of a user terminal using icons indicating bid and ask quantities at a given price. Ex. 1012, 26. Belden explains that a bid or an ask may be accepted (i.e., a buy or sell order may be placed) by clicking on the appropriate icon and that bid or ask quantity will automatically be for the quantity shown unless the user takes steps to modify the quantity. *Id.* at 33–34. Belden's express disclosure of "mouse: enter amount (if less than what icon is showing), point and click on icon with mouse in the appropriate partition" (Ex. 1012, 33), for example, teaches this feature because without further user intervention (i.e., without the user entering less than what is showing), the order is entered at the "pre-determined fixed quantity" that is shown on the icon.

Patent Owner further contends that "Petitioners do not provide any explanation of how the POSA

would combine Belden's acceptance of a *specific* user's bid/offer with TSE, which displays only aggregated totals of bid/asks, making the Petition deficient." *Id.* at 71. Contrary to Patent Owner's position, it is not necessary that Belden's specific user's bid/offer be physically combinable to render claims 3, 10, and 16 obvious. Patent Owner does not dispute Petitioner's rationale for combining the teachings of Belden with those of TSE, which we find persuasive for the reasons explained above with respect to claims 1, 8, and 14.

c. Claims 24, 34, and 44

Claims 24, 34, and 44 depend from claims 1, 8, and 14, respectively, and further recite that bids and asks are "re-centered" upon receiving a "recentering instruction." Petitioner contends that selection of the "home button [H]" while in the Scroll Screen in TSE teaches this feature. Pet. 74 (citing Ex. 1017, 110). 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. 71. 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. 1017, 110 ("Clicking [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. Patent Owner's declarant, Mr. Thomas testifies, for example, that "TSE fails to suggest that, while in the Board mode, one could select the 'H' button to re[-]center the board mode display, and as a consequence fails to suggest the claimed 're-centering instruction,'" but this, too, is unpersuasive because it is not tied to any requirement in the claims. The claims simply require "re-centering," and are silent as to whether a mode must remain the same.

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 claims 24, 34, and 44.

d. Claims 25, 26, 35, 36, 45, and 46

Claims 25, 35, and 45 depend from claims 1, 8, and 14, respectively, and further recite "dynamically displaying working orders in alignment with the prices corresponding thereto." Claims 26, 36, and 46 also depend from claims 1, 8, and 14, respectively, and further recite "dynamically displaying entered orders in alignment with the prices corresponding thereto, wherein said entered orders indicate a quantity of said commodity for which a trader's orders have been filled at said corresponding prices."

Petitioner contends that Belden teaches these features. Pet. 74–76.

There is no dispute, and we agree, that Belden teaches displaying the information recited in the claims noted above, albeit the information in Belden is not displayed along a price axis. Petitioner, however, proposes modifying TSE to display the information taught by Belden (working orders and entered orders), and that information would be displayed along the price axis in TSE. *Id.* at 75–76. Accordingly, Patent Owner's arguments against the references individually are unpersuasive.

Patent Owner additionally responds that "Petitioners failed to provide any reason why the [person of ordinary skill in the art] would modify TSE to add a new column of information" (i.e., including the dynamic display of working orders from claims 25, 35, and 45 or the entered orders from claims 26, 36, and 46). PO Resp. 72. In the Petition, however, Petitioner reasons that one of ordinary skill in the art would have made the proposed modifications to TSE "so that the trader could easily recognize and track his/her orders at various price levels." Pet. 74–75.

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 suggests.

For the reasons set forth above, we are persuaded that Petitioner has established, by a preponderance of the evidence, that the features of claims 25, 26, 35, 36, 45, and 46 are taught by the combination of TSE and Belden, and that one skilled in the art would have combined those teachings.

e. Additional Dependent Claims

Petitioner additionally challenges claims 7, 20–23, 27, 28, 30–33, 37, 38, 40–43, and 50–56 as being unpatentable over TSE and Belden. Pet. 73, 76–78. We have reviewed Petitioner's challenge 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 and Belden and that one skilled in the art would have combined those teachings.

3. TSE, Belden, and May – Claims 4, 11, and 17

Petitioner challenges claims 4, 11, and 17 as being unpatentable over TSE, Belden, and May. Pet. 78. We have reviewed Petitioner's challenge 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 May and that one skilled in the art would have combined those teachings.

4. TSE, Belden, and Gutterman – Claims 5, 6, 12, 13, 18, 19, 29, 39, and 49

a. Claims 29, 39, and 49

Claims 29, 39, and 49 depend from claims 1, 8, and 14, respectively, and further recite "dynamically displaying a last traded quantity for said commodity in alignment with the price corresponding thereto." Petitioner contends that this is taught by Gutterman and proposes further modifying TSE accordingly. Pet. 80 (citing Ex. 1011, 12:7–12). Specifically, Petitioner contends that "[m]odifying TSE to include features of Gutterman's GUI would only require the simple substitution of known elements or combining familiar elements according to known methods to achieve predictable results, and thus is obvious." *Id.* at 79.

Patent Owner responds that "Petitioners . . . do not explain how Gutterman discloses dynamically displaying the '*last traded quantity*,' as claimed," which "makes the Petition legally deficient." PO Resp. 75. Petitioner does not respond by pointing to any particular disclosure in Gutterman to rebut Patent Owner's contentions. Rather, Petitioner recasts its obviousness challenge as "[d]isplaying quantity . . . be[ing] nothing more than obvious design choice." Pet. Reply 16–17. The Petition,

however, based the challenge on an express teaching of this limitation in Gutterman. *See* Pet. 80 ("This limitation is disclosed in Gutterman."). We do not consider the new argument set forth in Petitioner's Reply. *See* 37 C.F.R. § 42.23(b); *see also Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369–70 (Fed. Cir. 2016).

There now appears to be no dispute that Gutterman does not teach the limitations recited in claims 29, 39, and 49, which was the basis for the challenge to these claims in the Petition. Accordingly, Petitioner has failed to establish, by a preponderance of the evidence, that claims 29, 39, and 49 are unpatentable under § 103.

b. Additional Dependent Claims

Petitioner additionally challenges claims 5, 6, 12, 13, 18, and 19 as being unpatentable over TSE, Belden, and Gutterman. Pet. 79–80. We have reviewed Petitioner's challenge 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 Gutterman and that one skilled in the art would have combined those teachings.

5. 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 nonobviousness 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. *In re GPAC Inc.*, 57 F.3d 1573, 1580 (Fed. Cir. 1995). "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 non-obviousness that proves the claimed invention is not obvious." PO Resp. 37.

a. MD Trader

Patent Owner contends that "MD Trader [is] the commercial embodiment of the invention" (PO Resp. 44), and refers to MD Trader throughout its discussion of secondary considerations of non-obviousness (*id.* at 39–59). As Petitioner notes, however, "the [Patent Owner Response] fails to explain how MD Trader embodies the '132 claims and doesn't even identify which claims (if any) MD Trader embodies." Pet. 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. 44. 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, 3, and 7 noted in Exhibit 2233).

b. Unrecognized Problems

Patent Owner contends that "[t]he inventive GUI tool solved problems in conventional GUIs," which "exhibited problems with speed and accuracy." PO Resp. 38. Patent Owner, however, offers no persuasive authority for the proposition that "unrecognized problems" is a secondary consideration of non-obviousness. *See id.* at 39 (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 nonobviousness. *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 1–56 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. 39 (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,

> [t]he basic principle behind [unexpected results supporting nonobviousness] 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 widely appreciated by others." PO Resp. 39. Patent Owner further contends that "the invention provided several other *unexpected* benefits as well." *Id.* 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 '132 patent describes the programming associated with the GUI as insignificant. *See, e.g.*, Ex. 1001, 4:62–5:1 (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. 41 (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. 43. 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 43 (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. 45. 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.'").

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. 47. 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. 1048, 35–36). Exhibit 1048 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. In support of this contention, Petitioner cites Patent Owner's own testimony from traders in the industry (Ex. 2223[12]), noting, for example, that "Grisafi identifies one-click canceling and one-click re-centering as key features," "McElveen identifies speed, precision, and one-click re-centering as a 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 (citing Ex. 2223, 2–4, 40). Patent Owner

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

acknowledges that, "in this industry . . . *anything* that is even remotely appreciated as providing an edge is tried and spreads quickly if successful." *Id.* at 45 (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, 1–5, 7, 9, 12. The sales information for MD Trader discussed in the Patent Owner Response is from the period from 1996–2006. PO Resp. 46. 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, 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. 48–53. "[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. 48–52. 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 was directed to the 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. 54. 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 '132 patent explains that there is nothing special about the programming required. Ex. 1001, 4:62–5:1.

Rather, Patent Owner's contentions are directed to the allegation that the claimed invention did not exist before arrived at by Patent Owner. *Id.* 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 ("Before 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 '132 patent as evidence of non-obviousness. PO Resp. 58. Patent Owner

concludes that the party's "actions show that experts in the field recognized that prior art, including the TSE, was insufficient to render the invention obvious." *Id.* We are apprised of no persuasive reason as to why those contentions establish non-obviousness in this proceeding.

6. 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 Belden itself provides motivation for that proposed modification to TSE.

Accordingly, we are persuaded that Petitioner has established, by a preponderance of the evidence, that claims 1–28, 30–38, 40–48, and 50–56 are unpatentable under 35 U.S.C. § 103.[13] As noted

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[13] 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 addresses only portions of various claims. PO Resp. 77–78. Patent Owner offers no explanation however, as to how any of the alleged deficiencies in testimony affects any specific challenge to any specific claim. *See id.* (including only general allegations).

above, however, Petitioner has failed to establish that claims 29, 39, and 49 are unpatentable under 35 U.S.C. § 103.

F. Due Process

Patent Owner alleges due process issues in connection with alleged evidence of non-obviousness. PO Resp. 78–85. Specifically, Patent Owner references documents from the related district court proceeding. *See, e.g.*, *id.* at 78–79. Patent Owner references our order (Paper 58, "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 58, 9–10. 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 1016 (TSE), the transcript of Mr. Kawashima's deposition (Ex. 1019), and portions of Exhibits 1051 and 1052.

Paper 100 ("PO MTE"). Exhibit 1016 is the Japanese version of the TSE document. *See, e.g.*, Paper 119, 2. Patent Owner seeks to exclude Exhibit 1016 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. 1019) 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 1016) and the transcript of Mr. Kawashima's deposition (Exhibit 1019) 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 1016 and 1019. *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 1019 or Exhibit 1016 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. 1019) 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 1019 or 1016 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). 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 1016 and 1019, 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 102 ("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, 30–38, 40–48, and 50–56 of the '132 patent are unpatentable under 35 U.S.C. § 103. Petitioner has failed to show, by a preponderance of the evidence, that claims 29, 39, and 49 are unpatentable under § 103 or that claims 1–56 are patent-ineligible under 35 U.S.C. § 101.

ORDER

For the reasons given, it is:

ORDERED that claims 1–28, 30–38, 40–48, and 50–56 of the '132 patent are unpatentable;

FURTHER ORDERED that Patent Owner's Motion to Exclude Evidence is *denied* with respect to Exhibits 1016 and 1019 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.

Trials@uspto.gov
Tel: 571-272-7822

Paper No. 129
Entered: February 28, 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 CBM2015-00182
Patent No. 6,772,132 B1

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

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

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

I respectfully dissent from the majority opinion determining that the claims of the '132 patent are directed to patent eligible subject matter under 35 U.S.C. § 101. I join the majority opinion in all other respects.

Petitioner was not a party in the suit involved in *Trading Technologies International, Inc. v. CQG, Inc.*, No. 2016-1616, 2017 WL 192716 (Fed. Cir. Jan. 18, 2017) ("*CQG*"). Accordingly, the Federal Circuit was not placed in a position to determine the merits of the Petitioner's challenge to the patent eligibility of claims 1–56 under 35 U.S.C. § 101. Petitioner's challenge to the patent eligibility of claims 1–56 under 35 U.S.C. § 101 is based on different arguments and evidence submitted in this proceeding, such as different evidence of what was routine and conventional. *See* Pet. Br. 1–5 (discussing the differences between the records in *CQG* and here). The determination of whether claims 1–56 are patent eligible under 35 U.S.C. § 101 should focus on the record here. The patent-eligibility determination reached in *CQG* was based on the different record before the District Court.

Treating *CQG* as controlling of the patent-eligibility of claims 1–56, notwithstanding a different outcome based on the record developed in this proceeding involving a different party and relying on different evidence, in effect, treats *CQG* as

precedential to the patent-eligibility question in this proceeding. Because the Federal Circuit did not in fact designate *CQG* as precedential, the possibility remains that the Federal Circuit would consider the merits of a different outcome based on a different record.

The presumption that *CQG* controls patent-eligibility of claims 1–56, notwithstanding a possible different outcome based on a different set of facts and evidence, necessarily follows from the view that the question of patent-eligibility is a pure question of law. However, if the question of patent-eligibility is a question of law based on underlying facts, then underlying facts have the potential of controlling the ultimate determination. Likewise, a determination of obviousness under 35 U.S.C § 103 may depend on which prior art is applied against the claims. The Federal Circuit has not yet decided whether the question of patent-eligibility is a pure question of law or a question of law based on underlying facts.

I respectfully dissent and based on the record before us determine that the claims of the '132 patent are not directed to patent eligible subject matter under 35 U.S.C. § 101.

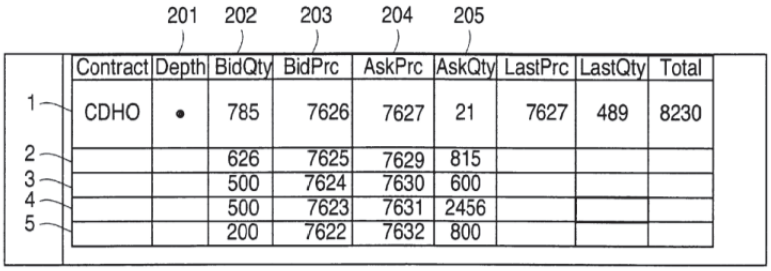
Background

The '132 patent discloses a method of trading that reduces the time it takes for a trader to place an order and, thus, increases the likelihood that the order will be filled at desirable prices and quantities. *Id.* at Abstract and 3:1–6. The method uses a

graphical user interface ("GUI") named the Mercury display. *Id.* at Abstract, 3:5. Before turning to the issue of subject matter eligibility under 35 U.S.C. § 101, a discussion of the differences in the methods of trading using the Mercury Display and a prior art GUI is helpful.

Figure 2 of the '132 patent depicts a prior art GUI. Ex. 1001, Fig. 2 ("the Fig. 2 GUI"). "GUI tools like the example shown in Figure 2 were ubiquitous by the time of the invention." Ex. 2169 ¶ 60; *see also* PO Resp. 1 ("widely used and accepted"). Figure 2 of the '132 patent is reproduced below.

FIG. 2



The Fig. 2 GUI displays market information in columns. *See id.* at 5:15–25, 5:36–42. 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 5:23–24 and 5:38–42. 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 5:18–21. Rows 2–5 display the market

depth, a list of next-best bids and asks. *Id.* at 5:21–25.

Prices and quantities change dynamically based on real time information from the market. *Id.* at 5:25–28. The inside market, however, is always displayed in row 1, a fixed location. PO Resp. 1–2. "This made perfect sense because it emphasized focus on the primary target for the trader: the inside market," and "[s]ince the location of the inside market is always known, the trader may easily spot the target, regardless of changes in the market." Ex. 2169 ¶ 62. Patent Owner's declarant 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)." *Id.* ¶ 61.

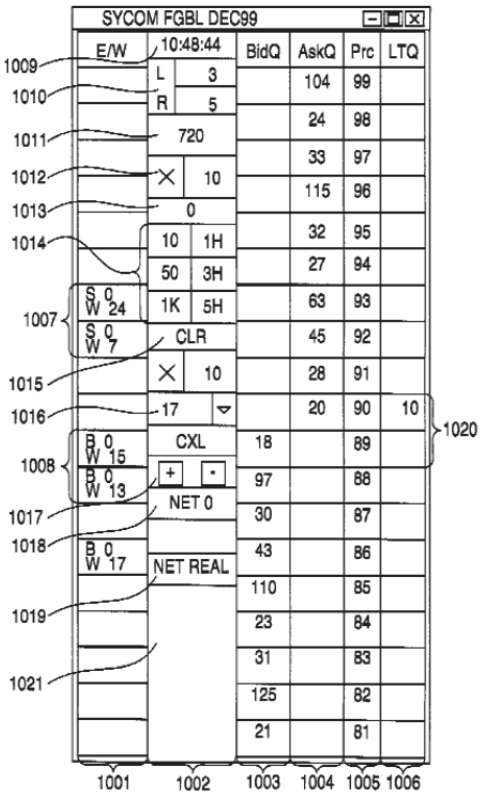
In the Fig. 2 GUI, "the user could place an order by clicking on a location (e.g., a cell) in one of the price or quantity columns." Ex. 2169 ¶ 57; *see id.* ¶ 58; PO Resp. 2–3. According to Patent Owner, "these types of tools permitted 'single action' order entry that consisted of a trader presetting 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. 1031, 7.

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 usually in the form of a window, with areas for a trader to fill out order parameters (*e.g.*, price, quantity, an identification of the item being traded, buy or sell). Ex. 2169 ¶ 48; *see also* Ex. 1001, 2:42–46 (describing a trader manually entering trade order parameters).

Turning now to a discussion of how the Mercury display is used to enter an order on an electronic exchange, the Mercury display is depicted in Figure 3 of the '132 patent. *Id.* at 3:41–42. Figure 3 is reproduced below.

FIG. 3



As can be seen in Fig. 3 above, like the Fig. 2 GUI, the Mercury display displays market information in columns. BidQ column 1003 displays bid quantities, and AskQ column 1004 displays bid ask quantities. *See id.* at 7:35–36. The bid and ask quantities are displayed along corresponding price levels in Prc column 1005, which is a common price axis. The inside market is displayed at 1020. *Id.* at 7:36–38.

Unlike the Fig. 2 GUI, the Mercury display values in the price column "are static; that is, they do not normally change positions unless a re-centering command is received." Ex. 1001, 7:46–48. 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 7:48–51. According to Patent Owner, some traders focused on trading at particular prices, not the inside market prices. *See* PO Resp. 2; Ex. 2169 ¶ 84.

Like the Fig. 2 GUI, a trader executes trades using the Mercury display by first setting the desired commodity and default parameters, such as default quantity. Ex. 1001, 9:5–7, 9:51–52, 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 9:53–10:63; Fig. 6, steps 1306–1315. In the example shown in Figure 3, a left click on "20" in column 1004 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 10:1–3.

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*, 134 S. Ct. at 2354; *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).

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). "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.").

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 (citing *Alice*, 134 S. Ct. at 2356). Patent Owner disagrees. *See* PO Resp. 5–13.

Claim 1 of the '132 patent is representative. Claim 1 of the '132 patent recites "a method of placing a trade order for a commodity on an electronic exchange having an inside market with a highest bid price and lowest ask price, using a graphical user interface and a user input device." Ex. 1001, 12:25. Claim 1 recites a step of "setting a

preset parameter for the trade order." *Id.* at 12:7. The specification of the '132 patent discloses that the preset parameter may be a quantity the trader wished to buy or sell. *Id.* at 9:5–7, 9:51–52. Claim 1 also recites a step directed to dynamically "displaying the market depth of a commodity," which requires displaying bid and ask quantities aligned with a static display of prices that do not move in response to a change in the inside market. *Id.* at 12:8–15. Finally, claim 1 recites two steps related to creating a trade order: (1) displaying an order entry region, having a plurality of areas aligned with the static display of prices for receiving commands to send trade orders and (2) selecting an areas of the order entry region through a single action to set a plurality of parameters for a trade order and to send the trader order to an electronic exchange. *Id.* at 12:16–27.

As can be seen from its steps, the focus of claim 1 is placing an order based on observed (plotted) market information, as well as updating market information. This focus is consistent with the disclosure of the '132 patent, which states 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 1:12–16. The focus of claim 1 is also consistent with the problem disclosed by the '132 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 2:23–41.

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 '132 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 4:66–5:3.

The '132 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 1:21–2:10. Similarly, Mr. Thomas indicates that traders in prior trading systems, including pre-electronic open outcry systems, which have been used for over one hundred years, make trade orders at an exchange based on market data, such as the inside market prices or "a price that improves the best bid/offer." Ex. 2169 ¶¶ 35, 61, and 62. 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 prices that improves the

best bid/offer." Ex. 2169 ¶ 35. The '132 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, 5:4–10. Further, Exhibit 1020 discloses that long before the '132 patent traders maintained books that plotted bids and asks (e.g., the market depth) along a price axis. *See* Ex. 1020, 44–46. Figure 4-2 of Exhibit 1020 is reproduced below.

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

BUY		SELL
BKR R - 100	22	
BKR L - 300 BKR A - 500	1/8	
BKR D - 200 BKR E - 300	1/4	
	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 prices axis. For example, Figure 4–2 shows the best bid at 22¼ and the best ask at 22⅝. *Id.* at 44.

Given this, I 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. I am 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. 1020, 44–46; Ex. 1007 ¶¶ 73–75).

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 '132 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 '132 patent solves an alleged problem of a Fig. 2 GUI, displaying the inside market at a fixed location, while the displayed prices change as the market changes. *See* PO Resp. 2–5, 9–10. 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 2–4. Patent Owner contends that the '132 patent solves this problem by having static prices that do not normally move. *Id.* at 4–5. The problem of a price changing just as a trader clicks on the price is not disclosed in the '132 patent. Patent Owner relies upon the testimony of Mr. Thomas to show that such a problem existed with the Fig. 2 GUI. *See* PO Resp. 4–5 (citing Ex. 2169 ¶¶ 72–32,

83–84). The testimony of Mr. Thomas, however, indicates that displaying the inside market at a fixed location, while the displayed prices change as the market changes, is only a problem if the trader is focused on trading at a particular price, not on the inside market price. *Cf.* Ex. 2169 ¶ 62 (focus on the primary target for the traders: the inside market") and ¶ 80 ("focused on particular prices than market prices as many other traders were"). For traders focused on trading at the inside market price, the Fig. 2 GUI is advantageous over the Mercury Display—"[s]ince the location of the inside market is always known, the trader may easily spot the target, regardless of changes in the market." Ex. 2169 ¶ 82. For traders focused on trading at the inside market price, the Mercury Display may be problematic because the inside market is not fixed, the location of the inside market may move up and down the price axis as the market changes, and the inside market could move as the trader clicked on the inside market. *See* Tr. 64:18–66:2; Ex. 2169 ¶ 73. Thus, the trader could miss their intended price (i.e., the inside market price). In both Fig. 2 GUI and the Mercury Display, the inside market and prices move relative to each other. The difference between the Fig. 2 GUI and the Mercury Display is whether the inside market or price remains static. That difference is based upon the focus of the trader, and is not a problem with the technology. The fact that some traders focus on price and some traders focus on the inside market is not a problem necessarily rooted in computer technology that overcomes a problem specifically arising in the realm of computer

networks; it is a difference in the preferences of a trader. *See* Pet. Reply 3–7.

Further, claim 1 of the '132 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 135. Here, the claims merely organize existing market information. As discussed above, the claims merely reorganize market information so that the focus of a trader does not normally move.

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." *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. 18–22; Pet. Reply 6–8. Patent Owner disagrees. PO Resp. 17–21.

Claim 1 of the '132 patent recites "a method of placing a trade order for a commodity on an electronic exchange having an inside market with a highest bid price and a lowest ask price, using a graphical user interface and a user input device." Ex. 1001, 12:2–5. The '132 patent discloses that its system can be implemented "on any existing or future terminal or device" (Ex. 1001, 4:4–7), each of which is known to include a display, and discloses that the input device can be a mouse (*id.* at 4:9–11), which is a known input device. The '132 patent further discloses that "[t]he scope of the present invention is not limited by the type of terminal or device used." *Id.* at 4:7–9. 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.[14] "Limiting the field of use of the abstract idea to a particular existing technological environment does not render any claims less abstract." *Affinity Labs*, 838 F.3d at

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[14] The '132 patent was also the subject of CBM2014-00135. In CBM2014- 00135, Patent Owner stated, "[t]he claimed tool is implemented as a GUI merely because of the state of technology today—a comparable tool could have been implemented mechanically." Ex. 1031, 30.

1258 (citing *Alice*, 134 St. Ct. at 2358; *Mayo*, 132 S. Ct. at 1294).

Claim 1 recites a first step of "setting a preset parameter for the trade order." Ex. 1001, 12:7. The '132 patent discloses that it is known in existing systems for a trader to set parameters, such as desired quantity, for a trade order. *Id.* at 2:43–47.

Claim 1 recites a second step of displaying the market depth by dynamically displaying the quantities of bids and asks aligned with a static display of prices. Ex. 1001, 12:8–13. The static display of prices does not move in response to a change in the inside market. *Id.* at 12:13–15. Essentially, this limitation requires plotting the inside market along a price axis. Plotting information along an axis is a well-understood, routine, conventional, activity. As can be seen from Fig. 4–2 of Exhibit 1020, reproduced above, it was known to plot orders to buy or sell a commodity along a prices axis. Ex. 1020, 44–46. Further, 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, 5:14–25. 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. 2016 ¶ 61. Displaying the best ask price above a best bid price would be displaying a common column of price levels.

The '132 patent describes the programming associated with the GUI as insignificant. *See, e.g.*, Ex. 1001, 4:62–5:1 (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").

Claim 1 requires that the price levels are static (i.e., they do not change positions unless a re-centering command is received). Fixing the location of the target or focus of the trader was known in the prior method of trading using a GUI. *See* Ex. 2169 ¶ 62. This step of claim 1 requires 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, 12:16–27. 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* Ex. 2169 ¶¶ 57–58; Ex. 1031, 7. The additional elements must be more that "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, I determined that 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 discloses in the '132 patent includes a similar combination of elements.

For the reasons discussed above, I respectfully dissent and determine that the claims of the '132 patent are not directed to patent eligible subject matter under 35 U.S.C. § 101.

PETITIONER:

Robert E. Sokohl
Lori A. Gordon
Richard M. Bemben
Sterne, Kessler, Goldstein & Fox P.L.L.C.
PTAB@skgf.com
rsokohl-ptab@skgf.com
lgordon-PTAB@skgf.com
rbemben-PTAB@skgf.com

John Phillips
Fish & Richardson P.C.
CBM41919-0006CP1@fr.com

PATENT OWNER:

Erika H. Arner
Joshua L. Goldberg
Kevin Rodkey
Rachel L. Emsley
Cory Bell
Finnegan, Henderson, Farabow, Garrett & Dunner, LLP
erika.arner@finnegan.com
joshua.goldberg@finnegan.com
kevin.rodkey@finnegan.com
rachel.emsley@finnegan.com
cody.bell@finnegan.com

Michael D. Gannon
Leif R. Sigmond, Jr.
Jennifer Kurcz

McDonnell Boehnen Hulbert & Berghoff LLP
gannon@mbhb.com
sigmond@mbhb.com
kurcz@mbhb.com

Steven F. Borsand
Jay Knobloch
Trading Technologies International, INC.
tt-patent-cbm@tradingtechnologies.com
jay.knobloch@tradingtechnologies.com

APPENDIX D

Trials@uspto.gov
571.272.7822

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, 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.

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[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.

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
TSE,[2] Belden,[3] and Togher[4]	§ 103	1–28

[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).

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

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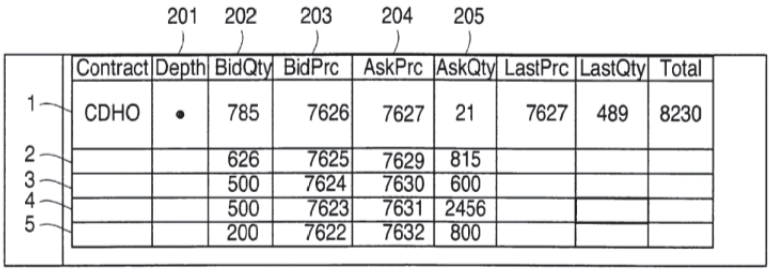
[3] PCT Pub. No. WO 90/11571, pub. Oct. 4, 1990 (Ex. 1009, "Belden"). The page numbers referenced herein are those at the bottom of each page.

[4] U.S. Pat. No. 5,375,055, iss. Dec. 20, 1994 (Ex. 1005, "Togher").

GUI"). According to Patent Owner, the Fig. 2 GUI illustrates the "widely accepted conventional wisdom regarding" electronic trading. PO Resp. 1; *see also* 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

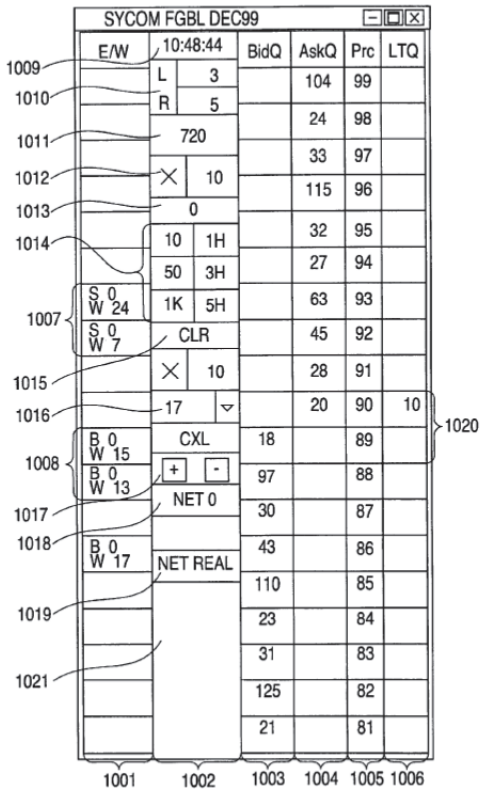


Figure 3 of the '411 patent illustrates an example of the Mercury display with example values for trading a commodity including prices, bid and ask quantities relative to price, and trade quantities.

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] 5 we find that the level of ordinary skill in the art is reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57

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

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 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

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

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.

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.

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[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.

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.*

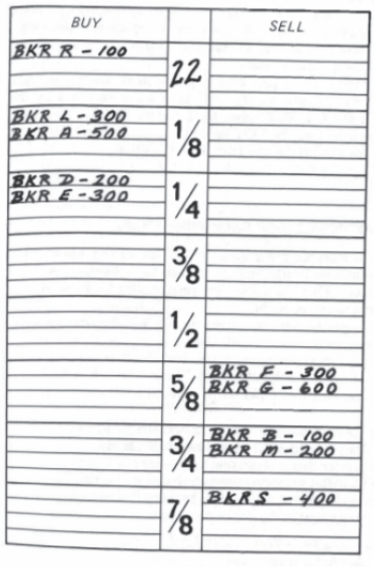

Figure 4-2 depicts a page of a book of a trader. *Id.* at 44–45. Orders to buy or sell a commodity are plotted along a prices axis. For example, Figure 4-2 shows the best bid at 22¼ and the best ask at 22⅝. *Id.* at 44.

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 (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

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[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.

highest order to buy the commodity or lowest order to sell the commodity in a bid display region or ask display region, 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

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[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).

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 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

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[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.

connect to the Tokyo Stock Exchange. Ex. 1007, 10–25. Chapter 15, entitled "Response To A 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.

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[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.

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 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

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

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. 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

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[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).

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.

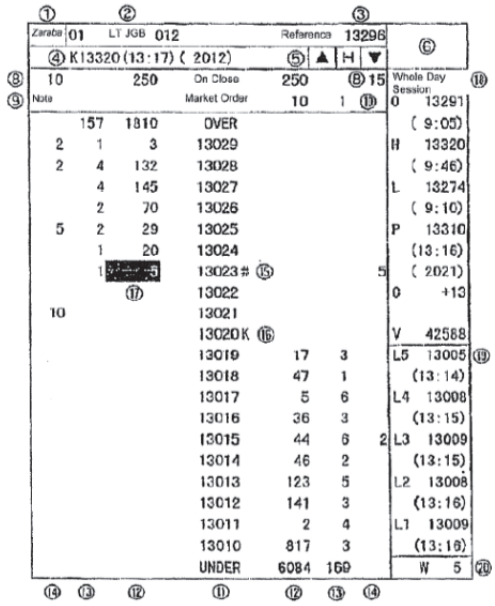
For all of the above reasons, we determine that TSE qualifies as prior art.

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").



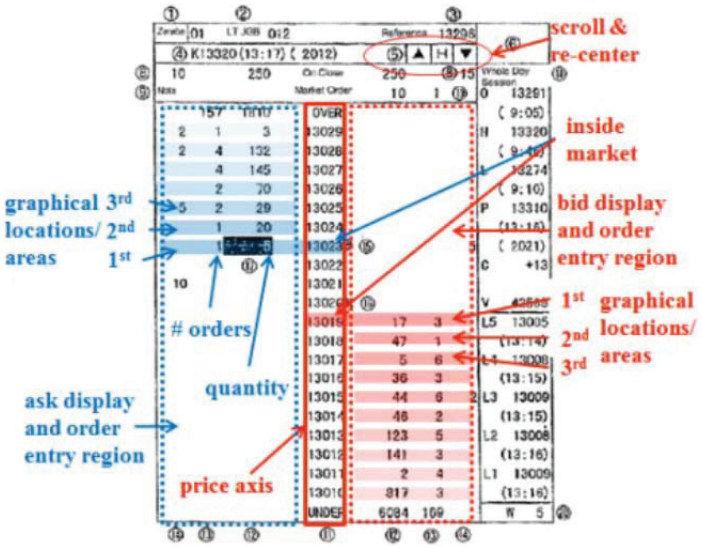
The figure reproduced above is illustrated on page 107 of TSE and depicts TSE's Board Screen. The Board Screen includes a central order price at column 11—a price display. *Id.* at 111. The Board Screen can be placed in a "Scrolling Screen" mode where "the price display positions do not change automatically." *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. 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 nonobviousness 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 nonobviousness. *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 nonobviousness] 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.

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

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, 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. 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

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[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).

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.

Trials@uspto.gov
571.272.7822

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 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:

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

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]

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[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.

PETITIONERS:

Robert Sokohl
Lori Gordon
Richard Bemben
STERN, KESSLER, GOLDSTEIN & FOX
Rsokohl-ptab@skgf.com
Lgordon-ptab@skgf.com
Rbemben-ptab@skgf.com

John Phillips
FISH & RICHARDSON P.C.
CBM41919-0008CP1@fr.com

PATENT OWNER:

Erika H. Arner
Joshua L. Goldberg
Kevin D. Rodkey
Rachel L. Emsley
Cory Bell
FINNEGAN, HENDERSON, FARABOW, GARRET & DUNNER, LLP
erika.arner@finnegan.com
joshua.goldberg@finnegan.com
kevin.rodkey@finnegan.com
rachel.emsley@finnegan.com
cory.bell@finnegan.com

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.

Michael D. Gannon
Leif R. Sigmond, Jr.
Jennifer Kurcz
MCDONNELL BOEHNEN HULBERT &
BERGHOFF LLP
gannon@mbhb.com
sigmond@mbhb.com
kurcz@mbhb.com

Steven F. Borsand
Jay Knobloch
TRADING TECHNOLOGIES INTERNATIONAL,
INC.
tt-patent-cbm@tradingtechnologies.com
jay.knobloch@tradingtechnologies.com

APPENDIX E

Trials@uspto.gov
571.272.7822

Paper No. 47
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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., and TRADESTATION SECURITIES, INC.,
Petitioner,

v.

TRADING TECHNOLOGIES INTERNATIONAL, INC.,
Patent Owner.

Case CBM2016-00031
Patent No. 7,813,996 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 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., and TradeStation Securities, Inc. (collectively, "Petitioner") filed a Petition requesting covered business method patent review of claims 1–20 (the "challenged claims") of U.S. Patent No. 7,813,996 B2 (Ex. 1001, "the '996 patent"). Paper 2 ("Pet."). Trading Technologies International, Inc. ("Patent Owner") filed a Preliminary Response. Paper 11 ("Prelim. Resp."). On August 8, 2016, we instituted a covered business method patent review (Paper 15, "Institution Decision" or "Inst. Dec.") based upon Petitioner's assertion that claims 1–20 are directed to patent ineligible subject matter under 35 U.S.C. § 101. Inst. Dec. 24. Subsequent to institution, Patent Owner filed a Patent Owner Response (Paper 24, "PO Resp.") and Petitioner filed a Reply (Paper 29, "Pet. Reply") to Patent Owner's Response. Pursuant to our authorization, Patent Owner filed an additional submission addressing the Federal Circuit's holding in *Technologies*

International, Inc., v. CQG, Inc., No. 2016-1616, 2017 WL 192716 (Fed. Cir. Jan. 18, 2017) ("*CQG*") (Paper 35) and Petitioner filed a reply to that submission (Paper 36). Petitioner filed a Motion to Exclude Evidence (Paper 37, "MTE").

We held a joint hearing of this case and several other related cases on May 3, 2017. Paper 46 ("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 sufficiently that claims 1–20 of the '996 patent are directed to patent ineligible subject matter under 35 U.S.C. § 101.

B. Related Proceedings

The parties indicate numerous related U.S. district court proceedings, including at least one proceeding specifically directed to the '996 patent. Pet. 2–3; Paper 7, 1–5.

Numerous patents are related to the '996 patent and the related patents are or were the subject of numerous petitions for covered business method patent review and reexamination proceedings. As noted above, the Federal Circuit has issued a non-precedential decision, *CQG*, which addresses whether claims of U.S. Patent Nos. 6,766,304 ("the '304 patent") and 6,772,132 ("the '132 patent") are patent eligible under § 101. The '996 patent at issue

in this case is related to the '132 and '304 patents via continuation and divisional filings.

C. Asserted Grounds

Petitioner contends that the challenged claims are unpatentable under 35 U.S.C. § 101. Pet. 23–79.

D. The '996 Patent

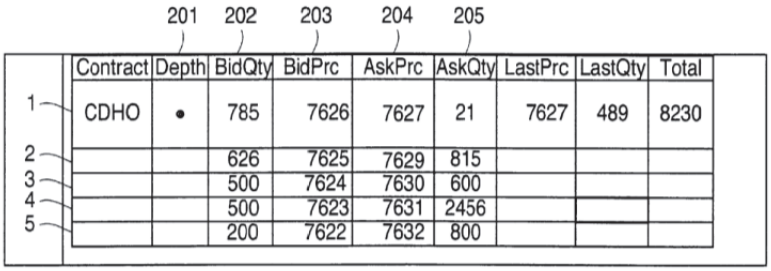
The '996 patent is titled "Click Based Trading with Intuitive Grid Display of Market Depth." Ex. 1001, [54]. The invention of the '996 patent "is directed to the electronic trading of commodities." *Id.* at 1:14–15. The invention of the '996 patent is a graphical user interface ("GUI"), named the Mercury display, and a method of using the Mercury display to trade a commodity. *Id.* at Abstract, 3:3–8.

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 '996 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. 10; *see also* Ex. 2169 ¶ 55 ("GUI tools like the example shown in Figure 2 were ubiquitous by the time of the invention.").

Figure 2 of the '996 patent is reproduced below.

FIG. 2



The Fig. 2 GUI displays market information in columns. *See id.* at 5:15–42. BidQty column 202 displays bid quantity, and BidPrc column 203 displays corresponding bid price levels. *Id.* at 5:34–36. AskQty column 205 displays ask quantities, and AskPrc column 204 displays corresponding ask price levels. *Id.* at 5:36–38. 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 5:13–15. Rows 2–5 display the market depth, a list of next-best bids and asks. *Id.* at 5:18–19.

Prices and quantities change dynamically based on real time information from the market. *Id.* at 5:22–24. The inside market, however, is always displayed in row 1, a fixed location. PO Resp. 11. 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 ¶ 56.

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 ¶ 52; *see* CBM2014-00133, Paper 18, 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.

CBM2014-00133, Paper 18, 8.

Other types of conventional trading GUIs used order entry tickets to send trade orders to an electronic exchange. PO Resp. 10. 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 ¶ 44; *see also* Ex. 1001, 2:35–45 (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

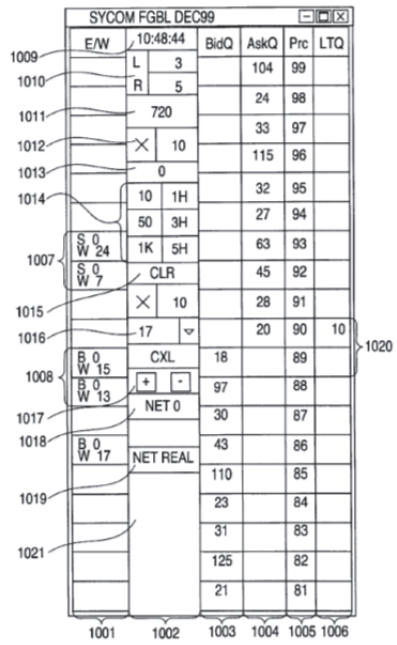


Figure 3 of the '996 patent illustrates an example of the Mercury display with example values for trading a commodity including prices, bid and ask quantities relative to price, and trade quantities.

The Mercury display is like the Fig. 2 GUI in that both display market information in columns. Column 1005 is a static price axis, which includes a plurality of price values for the commodity. *See* Ex. 1001 at 7:33–35. The '996 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 7:35–36. Columns 1003 and 1004 are aligned with the static price axis and dynamically display bid and ask

quantities, respectively, for the corresponding price values of the static price axis. *See id.* at 7:33–47. The '996 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 4:56–64.

The '966 patent states that:

> How far into the market depth the present invention can display depends on how much of the market depth the exchanges provides. Some exchanges supply an infinite market depth, while others provide no market depth or only a few orders away from the inside market. The user of the present invention can also chose how far into the market depth to display on his screen.

Id. 4:66–5:5.

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 7:42–44. 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 7:44–46.

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 8:64–9:11 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 7:65– 8:32. A trader executes trades using the Mercury display by first setting the desired commodity and default parameters, such as default quantity. *See id.* at 8:64–9:11; 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 9:46–11:36; 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 9:52–54.

E. Illustrative Claim

As noted above, Petitioner challenges claims 1–20. Claim 1 is the sole independent claim, and is reproduced below:

> 1. A computer readable medium having program code recorded thereon for execution on a computer having a graphical user interface and a user input device, the program code causing a machine to perform the following method steps:
>
> receiving 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;

receiving an input from a user that designates a default quantity to be used for a plurality of trade orders;

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 static price axis, the first indicator representing quantity associated with at least one order to buy the commodity at the current highest bid price;

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 static price axis, the second indicator representing quantity associated with at least one order to sell the commodity at the current lowest ask price;

displaying the bid and ask display regions in relation to a plurality of price levels arranged along the static price axis such that when the inside market changes, the price levels along the static price axis do not change positions and at least one of the first and second indicators moves in the bid or ask

display regions relative to the static price axis;

displaying an order entry region aligned with the static price axis comprising a plurality of areas for receiving commands from the user input device to send trade orders, each area corresponding to a price level of the static price axis; and

receiving a plurality of commands from a user, each command sending a trade order to the electronic exchange, each trade order having an order quantity based on the default quantity without the user designating the default quantity between commands, wherein each command results from selecting a particular area in the order entry region corresponding to a desired price level as part of a single action of the user input device with a pointer of the user input device positioned over the particular area to both set an order price parameter for the trade order based on the desired price level and send the trade order to the electronic exchange.

Ex. 1001, 11:45–12:24.

ANALYSIS

A. 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 '996 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 proposes constructions for two claim limitations. Pet. 21–22. Patent Owner does not propose any explicit claim construction. For purposes of this Decision, we determine that no particular term requires explicit construction.

B. Covered Business Method Patent

Section 18 of the AIA[1] 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

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

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 '996 patent. Pet. 12.

Based on the record before us, we are apprised of no reason to change the determination in our Institution Decision that at least claim 1 of the '996 patent is directed to a covered business method. Inst. Dec. 9–14.

1. *"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 '996 patent claims ***expressly require*** the performance of a financial transaction, e.g., by 'receiving market information for a commodity,' and 'sending a trade order to the electronic exchange.'" Pet. 14 (citing claim 1 of the '996 patent).

Patent Owner does not dispute that the claims are directed to a financial product or service and, instead, contends that the '996 patent is not a covered business method patent because the claims are not directed to a method for performing business operations. *See* PO Resp. 57–66; id. at 59 n. 3 ("CBMs include only claims to certain method for performing business operations"). Patent Owner

contends that the claims of the '996 patent are directed to a device and not a data process or business method claim. *Id.* at 61.

A covered business method patent is not limited to only patents that claim a method, as opposed to a device. Covered business method patents include a patent that claims "a method or corresponding apparatus." AIA § 18(d)(1); *see* 37 C.F.R. § 42.301(a). Claim 1 recites: "A computer readable medium having program code recorded thereon for execution on a computer having a graphical user interface and a user input device, the program code causing a machine to perform the following method steps." Ex. 1001, 11:45–49. As Petitioner's point out, claim 1 recites that the machine performs method steps, such as receiving market information, displaying indicators of the market information, and sending a trade order to the electronic exchange. Pet. 14. The specification of the '966 patent discloses performing the method steps by processing information (i.e., data). *See* Ex. 1001, 4:58–62 ("[t]he present invention processes this information and maps it . . . to a screen."); 10:58–60 ("[t]he process for placing trade orders using the Mercury display").

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. A computer readable

medium having program code that causes a machine to perform such a method is a corresponding apparatus.

Patent Owner disputes that '996 patent claims data processing. PO Resp. 61–66. 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. *Id.* 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* at 62. 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 '996 patent, itself, discloses processing market information received from an electronic exchange. Ex. 1001, 4:58–62, 10:58–60. We, thus, are not persuaded that the '966 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. Patent Owner's arguments imply that "other operations" must be "business operations." *See e.g.*, PO Resp. 59, n. 3. The statute states that the "other operations" are those that are "used in the practice, administration, or management of a financial product or financial service." AIA § 18(d)(1). There appears to be no disagreement that the claimed method steps are operations used in the practice, administration, or management of a commodity or trading a commodity on an electronic exchange, e.g., a financial service. *See* PO Resp. 61–66. The '996 patent, therefore, at least claims "other operations used in the practice, administration, or management of a financial product or financial service" (AIA § 18(d)(1)).

Patent Owner additionally contends that the Legislative History confirms that the claimed invention is not a covered business method. PO Resp. 70–72. We are not persuaded by Patent Owner's argument. 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).

For the reasons stated above, and based on the particular facts of this proceeding, we conclude that the '996 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

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 (Aug. 14, 2012).

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; *Apple Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1240 (Fed. Cir. 2016).

Petitioner first contends that rather than reciting a technical feature that is novel or unobvious over the prior art, the claims of the '996 patent generally recite trading software that is implemented on a conventional computer. Pet. 17–19. Petitioner additionally asserts that the claims of the '996 patent do not fall within § 18(d)(1)'s exclusion for "technological inventions" because the '996 patent does not solve a technical problem using a technical solution. *Id.* at 19–21. Patent Owner disagrees (PO Resp. 66– 69), but fails to explain sufficiently how the claimed subject matter recites a technological feature that is novel and unobvious over the prior art or solves a technical problem using a technical solution.

We are persuaded by Petitioner's contentions that at least claim 1 of the '996 patent does not recite a novel and non-obvious technological feature. The specification of the '996 patent treats as well-known all potentially technological aspects of the claims. For example, the '996 patent discloses that its system can be implemented "on any existing or future terminal or device" (Ex. 1001, 4:2–5), each of which is known to include a display, and discloses that the input device can be a mouse (*id.* at 4:6–9), which is a known input device. The '996 patent further discloses that "[t]he scope of the present invention is not limited by the type of terminal or

device used." *Id.* at 4:5–6. The '996 patent explains that the programming associated with the GUI is insignificant. *See, e.g.*, Ex. 1001, 4:58–65 (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"); *see also* PO Resp. 65 ("the claimed invention is agnostic to what specific algorithm is used for processing or mapping the data.").

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 '996 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 '996 patent does not solve a technical problem with a technical solution.

Petitioner notes that the '996 patent "purports to minimize the risk of the market price changing before the trade is executed, such that the trader 'misses the price.'" Pet. 19 (citing Ex. 1001, 2:55–57; 2:64–67). Petitioner argues that "contending with

price fluctuations in a market is not a technological problem." *Id.* at 19–20. Petitioner contends that "the '996 patent does not offer a technical solution" because "[i]t does not claim a more accurate mouse or a computer that responds faster." *Id.* at 20.

Patent Owner contends that the '996 patent solves the problem of a user missing an intended price because a price level changed as the user tried to click to send an order at an intended price level in a GUI tool. *See* PO Resp. 12 (citing Ex. 2169, 2195, 2212–2214, 2233, 2411, 2412, 2413).

Patent Owner's argument is not persuasive. The problem of missing an intended price because the price changes just as a trader clicks on the price is not disclosed in the '996 patent. The '996 patent discloses that exchanges are volatile and move rapidly and that to profit a trader must react quickly. Ex. 1001, 2:1–2.

> 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 his own or his 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 2:2–10. According to the '996 patent, approximately 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.

Id. at 2:26–38. "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" because "[t]he market is fluid as many traders are sending orders to the market simultaneously." *Id.* at 2:45–49. "If a trader intends to enter an order at a particular price, but misses the price because the market moved before he could enter the order, he may lose hundreds, thousands, even millions of dollars." *Id.* at 2:55–58; *see also id.* at 3:1–5. "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 2:64–67.

As can be seen from the above, the problem disclosed in the '996 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. As Petitioner points out, this is a financial issue or a business problem, not a technical problem.

Pet. 19–20. 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 are persuaded by Petitioner that the '996 patent does not solve a technical problem.

Further, as discussed above, claim 1 requires the use of only known technology, and we are persuaded by Petitioner that the '996 patent does not provide a technical solution. Given this, we determine that at least claim 1 does not solve a technical problem using a technical solution and at least claim 1 does not satisfy the second prong of 37 C.F.R. § 42.301(b).

3. Conclusion

In view of the foregoing, we conclude that the '996 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.

C. Section 101 Patent-Eligible Subject Matter

Petitioner challenges claims 1–20 as directed to patent-ineligible subject matter under 35 U.S.C. § 101. Pet. 23–36. Patent Owner disagrees. PO Resp. 9–57.

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 1–20 of the '996 patent are invalid because they encompass subject matter that does not fall into any of the four statutory classes of § 101." Pet. 35. Claims 1–20 recite a "computer readable medium having program code recorded thereon." Petitioner contends that "the BRI of 'medium,' as used in claims 1–20 of the '996 patent . . . is broad enough to cover substances 'such as wires, air, or a vacuum' through which transitory electrical signals can propagate." *Id.* (citing *In re Nuijten*, 550 F.3d 1346, 1352 (Fed. Cir. 2007)); Pet. Reply 22– 25. In our Institution Decision, we noted that our construction was preliminary and specifically indicated that "[t]he broadest reasonable interpretation, in light of the specification, of 'recorded' is an issue that requires further development of the record." Inst. Dec. 9.

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" to encompass a signal at the time of the invention. PO Resp. 56–57. Petitioner responds to Patent Owner's contentions by simply asserting that "the Board correctly found that under the BRI a 'computer readable medium' encompasses transitory media," and that "[o]ther computer science definitions of the term confirm that 'record' does not imply storing on a physical device and, contrary to TT's expert's

statements, is interchangeable with 'encode.'" Pet. Reply 22–24.

Petitioner's response is unhelpful. Petitioner cites to a single dictionary definition for a definition of just the term "record." Ex. 1043, 3. Petitioner, however, fails to offer evidence or persuasive argument as to how one skilled in the art would have understood the phrase "computer readable medium having program code recorded thereon." At oral hearing, when asked why no evidence was provided in this regard, Petitioner had no explanation other than "it would be difficult . . . because this is a term of art in the patent field" and "you can[not] go to an IEEE dictionary and find necessarily a dictionary definition that would be helpful here." Tr. 71:4–10.

Accordingly, on this record, we are not persuaded by Petitioner that at the time of the invention one skilled in the art would have understood "computer readable medium having program code recorded thereon" as encompassing transitory, propagating signals.

Even if claims 1–20 fit within one of the categories of patent-eligibility, we are persuaded that claims 1–20 do not recite patent-eligible subject matter for the reasons that follow.

1. 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).

2. 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). "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.").

According to Petitioner, the challenged claims "are directed to the abstract, fundamental economic practice of trading based on displayed market information and user input." Pet. 24. This is consistent with claim 1 of the '996 patent. Claim 1 of the '996 patent recites a "computer readable medium having program code recorded thereon for execution on a computer having a graphical user interface and a user input device" to perform various method steps involving market information. Ex. 1001, 11:45–49. Claim 1 recites two steps of displaying market information, bid and ask quantities, in regions along a static price axis. *Id.* at 11:56–67. 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 does not require displaying any indicators other than those at the inside market or that the price axis display price levels other than those corresponding to the inside market. *See id.* at 4:64–5:5 (explaining the number of price levels displayed depends on the information provided and that some exchanges provide no market depth information). Claim 1 then recites a step of moving the market information along the price axis as the market changes. *Id.* at 12:1–7. Claim 1 finally recites a step of displaying an order entry region and a step of receiving user commands to set parameters for a trade order and send the trade order to an exchange. *Id.* at 12:8–24.

As can be seen from its steps, the focus of claim 1 is placing trade orders based on displayed market information (i.e., the inside market), as well as updating the market information. This focus is consistent with the '996 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 1:14–20. The focus of claim 1 is also consistent with the problem disclosed by the '996 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 2:41–60.

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 static price axis and ask quantities are displayed in an ask region at locations that correspond to prices along the static price axis. *Id.* at 11:56–67. Claim 1 does not specify how the computer maps the bid quantities, ask quantities, and price axis to the display. The '996 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 display." *Id.* at 4:62–65; *see also* PO Resp. 65 ("the claimed invention is agnostic to what specific algorithm is used for processing or mapping the data.").

The '996 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 1:24–2:60. 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 ¶¶ 30, 56, and 57. 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 ¶ 30. The '996 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, 4:66–5:5. Further, Exhibit 1020 discloses that long before the '996 patent, traders maintained books that plotted bids and asks (e.g., the market depth) along a price axis. *See* Ex. 1020, 44–46. Figure 4-2 of Exhibit 1020 is reproduced below.

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

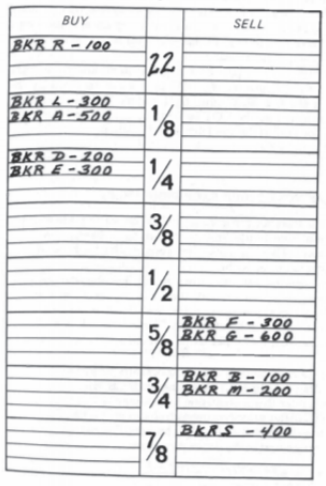

Figure 4-2 depicts a page of a book of a trader. *Id.* at 44–45. Orders to buy or sell a commodity are plotted along a prices axis. For example, Figure 4-2 shows the best bid at 22¼ and the best ask at 22⅝. *Id.* at 44.

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.

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 '996 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.

Further, claim 1 of the '996 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 135. Here, the claims merely organize existing market information. As discussed above, the claims merely reorganize market information so that the focus of a trader does not normally move.

We are persuaded by Petitioner that the Federal Circuit's non-precedential decision in *CQG* is not controlling precedent in this proceeding. *See* Pet. Reply 2–9; Paper 35, 1–5; Paper 36, 1–3. Petitioner was not a party in the suit involved in *CQG*, and *CQG* involved related but different patents. The Federal Circuit was not placed in a position to determine the merits of the Petitioner's challenge to the patent eligibility of the claims under 35 U.S.C. § 101. Petitioner's challenge to the patent eligibility of the claims is based on a construction of the claims and evidence submitted in this proceeding, such as different evidence of what was routine and conventional. *See* Pet. Reply 2–9 (discussing the differences between the records in *CQG* and here). The determination of whether the claims are patent eligible under 35 U.S.C. § 101 should focus on the record here. The patent-eligibility determination reached in *CQG* was based on the different record before the District Court.

Treating *CQG* as controlling of the patent-eligibility of claims 1–20, notwithstanding a different outcome based on the record developed in this proceeding involving a different party and relying on different evidence, in effect, treats *CQG* as precedential to the patent-eligibility question in this proceeding. The Federal Circuit did not in fact designate *CQG* as precedential. The presumption that *CQG* controls patent-eligibility of the claims, notwithstanding a possible different outcome based on a different set of facts and evidence, necessarily follows from the view that the question of patent-eligibility is a pure question of law. However, if the question of patent-eligibility is a question of law based on underlying facts, then underlying facts have the potential of controlling the ultimate determination. Likewise, a determination of obviousness under 35 U.S.C § 103 may depend on which prior art is applied against the claims. *See Novartis AG, LTS v. Noven Pharmaceuticals Inc.*, 853 F.3d 1289, 1293–94 (Fed. Cir. 2017) ("It is unsurprising that different records may lead to different findings and conclusions.").

3. 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. 27–31; Pet. Reply 10–17. Patent Owner disagrees. PO Resp. 31–35.

First, claim 1 of the '996 patent recites a "computer readable medium having program code recorded thereon for execution on a computer having a graphical user interface and a user input device" to perform various method steps involving market information. Ex. 1001, 11:45–49. The '996 patent discloses that its system can be implemented "on any existing or future terminal or device" (*id.* at 4:2–5), which are known to include displays, and discloses that the input device can be a mouse (*id.* at 4:6–9), 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 14– 17. A recitation of a generic GUI merely limits the use of the abstract idea to a particular technological environment. "[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, respectively and moving the indictors upon receipt of market information. Ex. 1001, 11:56–12:7. 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. 1020, 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, 5:17–22. 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 ¶ 59; *see also* 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 '996 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, 4:62–65. 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, 12:8–24. 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* Ex. 2169 ¶¶ 45, 52, 53. 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 '996 patent includes a similar combination of elements.

For the reasons discussed above, claim 1 of the '996 patent are not directed to patent eligible subject matter under 35 U.S.C. § 101. We also have considered the other claims of the '996 patent and, for similar reasons, the claims 2–20 are not directed to patent eligible subject matter.

D. Petitioner's Motion to Exclude

Petitioner moves to exclude various ones of Patent Owner's Exhibits. MTE 2–10. 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 1–20 of the '996 patent are patent-ineligible under 35 U.S.C. § 101.

ORDER

For the reasons given, it is:

ORDERED that claims 1–20 of the '996 patent are patent-ineligible under 35 U.S.C. § 101;

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.

Trials@uspto.gov
571.272.7822

Paper No. 47
Entered: August 7, 2017

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

v.

TRADING TECHNOLOGIES INTERNATIONAL, INC.,
Patent Owner.

Case CBM2016-00031
Patent No. 7,813,996 B2

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

PLENZLER, *Administrative Patent Judge*, dissenting.

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

Although I agree that the '996 patent is directed to a covered business method, 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 '996 patent to be a covered business method patent, as we are persuaded that at least claim 1 of the '996 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 1–20 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). I agree with the majority that Petitioner has failed to establish sufficiently that at the time of the invention one skilled in the art would have understood "computer readable medium having program code recorded thereon" as encompassing transitory, propagating signals. Thus, the claims fit within one of the four statutorily provided categories of patent-eligibility.

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) ("*CQG*"). 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. 7,813,996 (Ex. 1001, "the '996 patent") is ultimately a continuation of the application resulting in the '132 and '304 patents (Application No. 09/590,692).[2]

In a related Board proceeding addressing the '304 and '132 patents, we followed the guidance from the Federal Circuit decision noted above and 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 '996 patent and those in the '304 patent. Claim 1 from the '304 patent and claim 1 from the '996 patent are reproduced below, with highlighting to illustrate the similarities.

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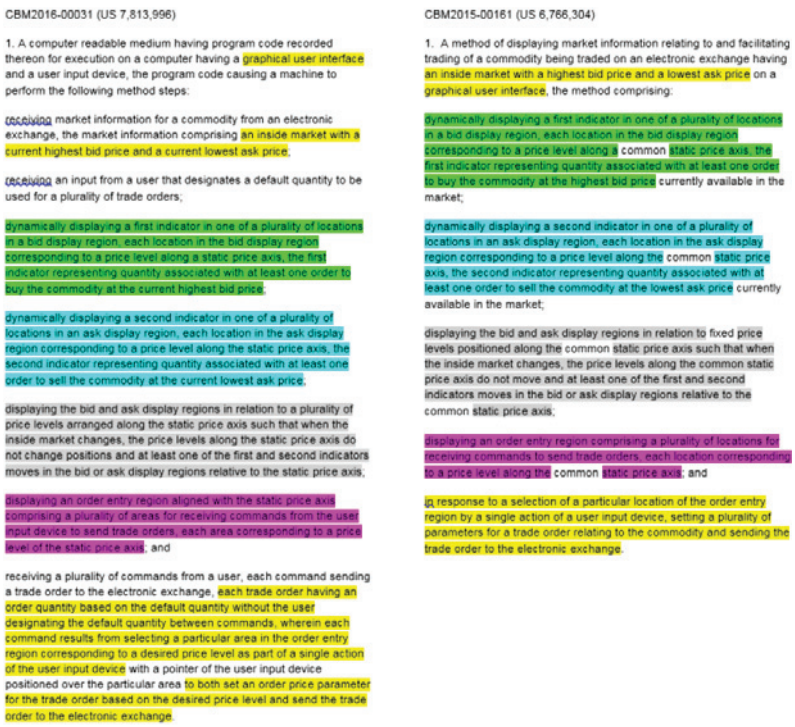
[2] The '304 patent resulted from a divisional filing of that application.



CBM2016-00031 (US 7,813,996)

1. A computer readable medium having program code recorded thereon for execution on a computer having a graphical user interface and a user input device, the program code causing a machine to perform the following method steps:

receiving 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;

receiving an input from a user that designates a default quantity to be used for a plurality of trade orders;

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 static price axis, the first indicator representing quantity associated with at least one order to buy the commodity at the current highest bid price;

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 static price axis, the second indicator representing quantity associated with at least one order to sell the commodity at the current lowest ask price;

displaying the bid and ask display regions in relation to a plurality of price levels arranged along the static price axis such that when the inside market changes, the price levels along the static price axis do not change positions and at least one of the first and second indicators moves in the bid or ask display regions relative to the static price axis;

displaying an order entry region aligned with the static price axis comprising a plurality of areas for receiving commands from the user input device to send trade orders, each area corresponding to a price level of the static price axis; and

receiving a plurality of commands from a user, each command sending a trade order to the electronic exchange, each trade order having an order quantity based on the default quantity without the user designating the default quantity between commands, wherein each command results from selecting a particular area in the order entry region corresponding to a desired price level as part of a single action of the user input device with a pointer of the user input device positioned over the particular area to both set an order price parameter for the trade order based on the desired price level and send the trade order to the electronic exchange.

CBM2015-00161 (US 6,766,304)

1. A method of displaying market information relating to and facilitating trading of a commodity being traded on 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.

The illustration above clearly shows that claim 1 from the '996 patent is virtually identical to claim 1 of the '304 patent. At oral hearing, when asked what limitations are missing from claim 1 of the '996 patent, counsel for Petitioner could not identify even one. Tr. 10:11–22. 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 would follow the Federal Circuit's guidance from *CQG*, as we did in CBM2015-00161,

because claim 1 of the '996 patent is of the same, or narrower scope, as claim 1 of the '304 patent.

Accordingly, I would determine that claims 1–20 of the '996 patent are eligible under § 101 because they are not directed to an abstract idea.

PETITIONER:

John Phillips
Kevin Su
FISH & RICHARSON P.C.
BM41919-0004CP1@fr.com
PTABInbound@fr.com

Michael Rosato
WILSON SONSINI GOODRICH & ROSATI
mrosato@wsgr.com

PATENT OWNER:

Leif Sigmond
Cole Richter
MCDONNELL BOEHNEN HULBERT &
BERGHOFF LLP
sigmond@mbhb.com
richter@mbhb.com

APPENDIX F

NOTE: This order is nonprecedential.

United States Court of Appeals
for the Federal Circuit

IBG LLC, INTERACTIVE BROKERS, LLC,
Appellants

v.

TRADING TECHNOLOGIES INTERNATIONAL, INC.,
Cross-Appellant

UNITED STATES,
Intervenor

2017-1732, 2017-1766, 2017-1769

Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. CBM2015-00161, CBM2016-00035.

ON PETITION FOR PANEL REHEARING AND REHEARING EN BANC

Before PROST, *Chief Judge*, NEWMAN, LOURIE, DYK, MOORE, O'MALLEY, REYNA, WALLACH, CHEN, and HUGHES, *Circuit Judges*[*].

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[*] Circuit Judges Taranto and Stoll did not participate.

PER CURIAM.

O R D E R

Appellants IBG LLC and Interactive Brokers, LLC filed a combined petition for panel rehearing and rehearing en banc. A response to the petition was invited by the court and filed by Cross-Appellant Trading Technologies International, Inc. The petition was referred to the panel that heard the appeal, and thereafter the petition for rehearing en banc was referred to the circuit judges who are in regular active service.

Upon consideration thereof,

IT IS ORDERED THAT:

The petition for panel rehearing is denied.

The petition for rehearing en banc is denied.

The mandate of the court will issue on May 7, 2019.

FOR THE COURT

April 30, 2019
Date

/s/ Peter R. Marksteiner
Peter R. Marksteiner
Clerk of Court

APPENDIX G

NOTE: This order is nonprecedential.

United States Court of Appeals
for the Federal Circuit

IBG LLC, INTERACTIVE BROKERS LLC,
Appellants

v.

TRADING TECHNOLOGIES INTERNATIONAL, INC.,
Cross-Appellant

UNITED STATES,
Intervenor

2017-2052, 2017-2053

Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. CBM2015-00182.

ON PETITION FOR PANEL REHEARING AND REHEARING EN BANC

Before PROST, *Chief Judge*, NEWMAN, LOURIE, DYK, MOORE, O'MALLEY, REYNA, WALLACH, CHEN, and HUGHES, *Circuit Judges*[*].

---

[*] Circuit Judges Taranto and Stoll did not participate.

PER CURIAM.

O R D E R

Appellants IBG LLC and Interactive Brokers LLC filed a combined petition for panel rehearing and rehearing en banc. A response to the petition was invited by the court and filed by Cross-Appellant Trading Technologies International, Inc. The petition was referred to the panel that heard the appeal, and thereafter the petition for rehearing en banc was referred to the circuit judges who are in regular active service.

Upon consideration thereof,

IT IS ORDERED THAT:

The petition for panel rehearing is denied.

The petition for rehearing en banc is denied.

The mandate of the court will issue on May 7, 2019.

FOR THE COURT

April 30, 2019
Date

/s/ Peter R. Marksteiner
Peter R. Marksteiner
Clerk of Court

APPENDIX H

NOTE: This order is nonprecedential.

United States Court of Appeals
for the Federal Circuit

TRADING TECHNOLOGIES INTERNATIONAL, INC.,
Appellant

v.

IBG LLC, INTERACTIVE BROKERS LLC,
Appellees

UNITED STATES,
Intervenor

2017-2054

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. CBM2015-00181.

ON PETITION FOR PANEL REHEARING AND REHEARING EN BANC

Before PROST, *Chief Judge*, NEWMAN, LOURIE, DYK, MOORE, O'MALLEY, REYNA, WALLACH, CHEN, and HUGHES, *Circuit Judges*[*].

---

[*] Circuit Judges Taranto and Stoll did not participate.

PER CURIAM.

O R D E R

Appellees IBG LLC and Interactive Brokers LLC filed a combined petition for panel rehearing and rehearing en banc. A response to the petition was invited by the court and filed by Appellant Trading Technologies International, Inc. The petition was referred to the panel that heard the appeal, and thereafter the petition for rehearing en banc was referred to the circuit judges who are in regular active service.

Upon consideration thereof,

IT IS ORDERED THAT:

The petition for panel rehearing is denied.

The petition for rehearing en banc is denied.

The mandate of the court will issue on May 7, 2019.

FOR THE COURT

April 30, 2019
Date

/s/ Peter R. Marksteiner
Peter R. Marksteiner
Clerk of Court

APPENDIX I

NOTE: This order is nonprecedential.

United States Court of Appeals
for the Federal Circuit

TRADING TECHNOLOGIES INTERNATIONAL, INC.,
Appellant

v.

IBG LLC, INTERACTIVE BROKERS LLC,
Appellees

UNITED STATES,
Intervenor

2017-2565

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. CBM2016-00031.

ON PETITION FOR PANEL REHEARING AND REHEARING EN BANC

Before PROST, *Chief Judge*, NEWMAN, LOURIE, DYK, MOORE, O'MALLEY, REYNA, WALLACH, CHEN, and HUGHES, *Circuit Judges*[*].

---

[*] Circuit Judges Taranto and Stoll did not participate.

PER CURIAM.

O R D E R

Appellees IBG LLC and Interactive Brokers LLC filed a combined petition for panel rehearing and rehearing en banc. A response to the petition was invited by the court and filed by Appellant Trading Technologies International, Inc. The petition was referred to the panel that heard the appeal, and thereafter the petition for rehearing en banc was referred to the circuit judges who are in regular active service.

Upon consideration thereof,

IT IS ORDERED THAT:

The petition for panel rehearing is denied.

The petition for rehearing en banc is denied.

The mandate of the court will issue on May 7, 2019.

FOR THE COURT

April 30, 2019
Date

/s/ Peter R. Marksteiner
Peter R. Marksteiner
Clerk of Court

APPENDIX J

Trials@uspto.gov
Tel: 571-272-7822

Paper No. 143
Entered: April 26, 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.

CBM2015-00181 (Patent 7,676,411 B2)
CBM2015-00182 (Patent 6,772,132 B2)

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

PLENZLER, *Administrative Patent Judge*.

DECISION
Denying Patent Owner's Request for Rehearing
37 C.F.R. § 42.71

INTRODUCTION

On February 28, 2017, we entered a final written decision in CBM2015-00182, determining that claims 1–28, 30–38, 40–48, and 50–56 of U.S. Patent No. 6,772,132 B1 are unpatentable (CBM2015-00182, Paper 129), and on March 3, 2017, we entered a final written decision in CBM2015-00181, determining claims 1–28 (the "challenged claims") of U.S. Patent No. 7,676,411 B2 are unpatentable (CBM2015-00181, Paper 138 ("Final Dec."). Patent Owner seeks rehearing of those decisions, but only with respect to whether the TSE reference ("TSE")[1] qualifies as a printed publication. CBM2015-00181, Paper 142 ("Request" or "Reh'g Req."); CBM2015-00182, Paper 134.[2]

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[1] Tokyo Stock Exchange Operation System Division, Futures/Option Purchasing System Trading Terminal Operation Guide (1998) (Ex. 1006; Ex. 1007 is the English translation). Exhibits numbers are from the CBM2015-00181 record. The same reference is at issue in CBM2015- 00182.

[2] Citations to the record hereinafter are with reference to CBM2015-00181, unless otherwise noted.

STANDARD OF REVIEW

In covered business method review, the petitioner has the burden of showing unpatentability by a preponderance of the evidence. 35 U.S.C. § 326(e). The standard of review for rehearing requests is set forth in 37 C.F.R. § 42.71(d), which states:

> The burden of showing a decision should be modified lies with the party challenging the decision. The request must specifically identify all matters the party believes the Board misapprehended or overlooked, and the place where each matter was previously addressed in a motion, an opposition, or a reply.

ANALYSIS

Patent Owner's Request is based on disagreement with our determination that the TSE reference is a printed publication. Request 1–7. Petitioner presents two main groups of arguments: those directed to our alleged misunderstanding of Federal Circuit decisions (*id.* at 2–5), and those directed to alleged inconsistencies between our decision and those of other panels at the Board (*id.* at 5–7).

With respect to its discussion of Federal Circuit decisions, we note that Patent Owner fails to even once cite to "the place where each matter was previously addressed in a motion, an opposition, or a reply." 37 C.F.R. § 42.71(d). Patent Owner's Request

simply sets forth its disagreement with our Final Decisions. We are aware of the Federal Circuit decisions addressing public accessibility, and we discussed those decisions in our Final Decisions. Final Dec. 34, 40. Disagreement with our determination alone is not sufficient basis for us to modify our Final Decisions.

As for Patent Owner's discussion of other decisions by other Board panels, we note that none of those decisions are precedential and, therefore, are not binding upon us.

Moreover, our Final Decisions also determined that

> 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.

Id. at 42 (citing Ex. 2169 ¶ 32). Accordingly, "[w]e determine[d] . . . that the record evidence supports a determination that TSE was publically accessible to persons interested *and* ordinarily skilled in the subject matter." *Id.* (emphasis added). Petitioner fails to identify, or even allege, error in our finding 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." *Id.* Whether TSE was required to be accessible to GUI designers, therefore, does not change our ultimate determination that TSE qualifies as a printed publication.

For all of these reasons, Patent Owner's Request does not apprise us of sufficient reason to modify our Final Decisions.

Patent Owner additionally suggests an expanded panel to decide the issues noted above. Reh'g Req. 7–9. Discretion to expand a panel rests with the Chief Judge, who, on behalf of the Director, may act to expand a panel on a suggestion from a judge or panel. *AOL Inc. v. Coho Licensing LLC*, IPR2014-00771, slip op. at 2 (PTAB Mar. 24, 2015) (Paper 12) (informative). Patent Owner's suggestion was considered by the Chief Administrative Patent Judge, who declined to expand the panel.

ORDER

Accordingly, it is:

ORDERED that Patent Owner's Request is *denied* in each of CBM2015-00181 and CBM2015-00182.

PETITIONER:

Robert Sokohl
Rsokohl-ptab@skgf.com

Lori Gordon
Lgordon-ptab@skgf.com

Richard Bemben
Rbemben-ptab@skgf.com

John Phillips
Cbm41919-0008cp1@fr.com

PATENT OWNER:

Leif Sigmond
sigmond@mbhb.com

Cole Richter
richter@mbhb.com

Michael Gannon
gannon@mbhb.com

Jennifer Kurcz
kurcz@mbhb.com

Jay Knobloch
Jay.knobloch@tradingtechnologies.com

APPENDIX K

Section 18 of the Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011), provides in relevant part as follows:

(a) TRANSITIONAL PROGRAM. --

(1) ESTABLISHMENT. -- Not later than the date that is 1 year after the date of the enactment of this Act, the Director shall issue regulations establishing and implementing a transitional post-grant review proceeding for review of the validity of covered business method patents.

. . . .

(E) The Director may institute a transitional proceeding only for a patent that is a covered business method patent.

. . . .

(d) DEFINITION. --

(1) IN GENERAL. -- For purposes of this section, the term "covered business method patent" means 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.

(2) REGULATIONS. -- To assist in implementing the transitional proceeding authorized by this subsection, the Director shall issue regulations for determining whether a patent is for a technological invention.

(e) RULE OF CONSTRUCTION. -- Nothing in this section shall be construed as amending or interpreting categories of patent-eligible subject matter set forth under Section 101 of title 35, United States Code.

Title 37 C.F.R. § 42.301(b) provides as follows:

> In determining whether a patent is for a technological invention solely for purposes of the Transitional Program for Covered Business Methods (section 42.301(a)), the following will be considered on a case-by-case basis: whether the claimed subject matter as a whole recites a technological feature that is novel and nonobvious over the prior art; and solves a technical problem using a technical solution.