UNITED STATES PATENT AND TRADEMARK OFFICE

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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Ex parte CLIFFORD J. WEBER and LYNN C. MARTIN[1]

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Appeal 2017-010776
Application 14/542,701
Technology Center 3600

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Before ROBERT E. NAPPI, ERIC S. FRAHM, and MICHAEL T. CYGAN
Administrative Patent Judges.

NAPPI, *Administrative Patent Judge.*

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) of the Final
Rejection of claims 1 through 27.

We AFFIRM.

INVENTION

The invention is a system to facilitate trades priced relative to a
reference benchmark value associated with an underlying index future.
Specification, paragraph 5. Claim 1 is illustrative of the invention and is
reproduced below:

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1.   A system for efficient data retrieval, comprising:

a communication device that receives an indication of a trade when the trade is initiated that is priced relative to a reference benchmark value, the indication including information associated with the trade and the trade having a basis that is determined at least one day prior to a determination of a final price and a quantity of the trade;

a database having an index structured data table storing trade information for a plurality of trades indexed by respective trade indications;

a computer processor executing program instructions; and

a memory, coupled to the computer processor, storing the program instructions that when executed by the computer processor cause the system to:

store the received indication in an indexed format according to a trade indication corresponding to the received indication;

retrieve at least a portion of information associated with the trade by searching the index structured data table for a trade indication associated with the respective received trade, when the final price and the quantity for the trade is determined, the final price determined being based on a reference benchmark value; and

automatically generate and report the trade, based on the retrieved portion of information, the determined final price and the determined quantity.

REJECTIONS AT ISSUE

The Examiner rejected claims 1 through 27 under 35 U.S.C. § 101 for being directed to patent-ineligible subject matter. Final Act. 6–8.[2]

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[2] Throughout this Opinion, we refer to the Appeal Brief, filed April 3, 2017 ("App. Br."), the Reply Brief, filed August 17, 2017 ("Reply Br."), the Examiner's Answer, mailed June 27, 2017 ("Answer"), and the Final Office Action, mailed November 14, 2016 ("Final Act.").

The Examiner rejected claims 1 through 27 on the ground of nonstatutory, obviousness-type, double patenting, for being unpatentable over claims 1 through 27 of copending application 14/212,077. Final Act. 5.

PRINCIPLES OF LAW

Patent-eligible subject matter is defined in 35 U.S.C. § 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 35 U.S.C. § 101: "[l]aws of nature, natural phenomena, and abstract ideas." *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 70 (2012).

In determining whether a claim falls within an excluded category, we are guided by the Supreme Court's two-step framework, described in *Mayo* and *Alice*. *Alice*, 573 U.S. at 217–18 (citing *Mayo*, 566 U.S. 66, 75–77 (2012)). In accordance with that framework, we first determine what concept the claim is "directed to." *See Alice*, 573 U.S. at 219 ("On their face, the claims before us are drawn to the concept of intermediated settlement, *i.e.,* the use of a third party to mitigate settlement risk."); *see also Bilski v. Kappos*, 561 U.S. 593, 611 (2010) ("Claims 1 and 4 in petitioners' application explain the basic concept of hedging, or protecting against risk.").

Concepts determined to be abstract ideas, and thus patent ineligible, include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–20; *Bilski*, 561 U.S. at 611); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as "molding rubber products" (*Diamond v. Diehr*, 450 U.S. 175, 192 (1981)); "tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores" (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S. 252, 267–68 (1854))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

In *Diehr*, the claim at issue recited a mathematical formula, but the Supreme Court held that "[a] claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula." *Diehr*, 450 U.S. at 176; *see also id.* at 192 ("We view respondents' claims as nothing more than a process for molding rubber products and not as an attempt to patent a mathematical formula."). Having said that, the Supreme Court also indicated that a claim "seeking patent protection for that formula in the abstract . . . is not accorded the protection of our patent laws, . . . and this principle cannot be circumvented by attempting to limit the use of the formula to a particular technological environment." *Id.* (citing *Benson* and *Flook*); *see, e.g., id.* at 187 ("It is now commonplace that an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.").

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If the claim is "directed to" an abstract idea, we turn to the second step of the *Alice* and *Mayo* framework, where "we must examine the elements of the claim to determine whether it contains an 'inventive concept' sufficient to 'transform' the claimed abstract idea into a patent-eligible application." *Alice*, 573 U.S. at 221 (internal quotation marks omitted). "A claim that recites an abstract idea must include 'additional features' to ensure 'that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].'" *Id.* (quoting *Mayo*, 566 U.S. at 77). "[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention." *Id.*

The PTO recently published revised guidance on the application of § 101. USPTO's January 7, 2019 Memorandum, *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (Jan. 7, 2019) ("Memorandum"). Under that guidance, we first look to whether the claim is directed to a judicial exception because:

> (1) the claim recites a judicial exception, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activity such as a fundamental economic practice, or mental processes); and

> (2) the claim as a whole fails to recite additional elements that integrate the judicial exception into a practical application (*see* MPEP § 2106.05(a)–(c), (e)–(h)).

Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, do we then look to whether the claim:

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(3) adds a specific limitation beyond the judicial exception that are not
"well-understood, routine, conventional" in the field (*see* MPEP
§ 2106.05(d)); or

(4) simply appends well-understood, routine, conventional activities
previously known to the industry, specified at a high level of
generality, to the judicial exception.

See Memorandum.

ANALYSIS

Abstract Idea

The Examiner finds that the claims are not patent eligible as they are
directed to a judicial exception without reciting significantly more. Final
Act. 4–6. Specifically, the Examiner finds that the claims are directed to
"the abstract idea of 'electronic trading systems and in particular to
facilitating trades priced relative to a reference benchmark value associated
with an underlying index.'" Final Act. 7.

Appellants argue the Examiner's rejection is in error as the Examiner
impermissibly overgeneralized the claimed invention and did not consider
the specific and detailed limitations. App. Br. 5. Appellants argue the
claims yield a mechanism for improved data handling that provides faster
execution. App. Br. 6.

Appellants' arguments have not persuaded us of error in the
Examiner's conclusion that the claims are directed to an abstract idea.
Claim 1 recites limitations setting forth steps relating to managing and
recording commercial transactions between people. Specifically, claim 1
recites . . . "receiving" indication of a trade, "storing" the indication of the

trade in an indexed format, "retrieving" the information associating with a trade when the final price and quantity for the trade, and "generating" a report of the trade based upon the received information.

The Examiner finds that the claims are directed to an abstract idea similar to those held to be abstract by the courts in *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014) (finding an abstract idea where the claims recited a "transaction performance guaranty," and *Diamond v. Diehr*, 450 U.S. 175, 192 (1981) (claim directed to using the Arrhenius equation). We concur with the Examiner that claim 1 is directed to a method of facilitating trades priced relative to a reference benchmark (an abstract idea of a fundamental economic activity). We agree with Appellants' argument that the Examiner's cite to *Diehr*'s claim using the Arrhenius, is inappropriate. Reply Br. 2–3. Nonetheless, we are unpersuaded by Appellants' argument that the abstract concept recited in Appellants' representative claim 1 is unlike the abstract concept at issue in *buySAFE*, which dealt with a transaction performance guaranty, i.e. a fundamental economic practice. We further note that the abstract concept is similar to that at issue in *Smart Sys. Innovations, LLC v. Chicago Transit Auth.*, 873 F.3d 1364, 1371 (Fed. Cir. 2017) which held that claims relating to methods of paying subway fare via bankcard including receiving a record, maintaining a balance in memory, and accounting for a fare by applying a fare to a balance are abstract ideas. Our reviewing court has further stated, "claims directed to the performance of certain financial transactions . . . must be categorized as involving abstract ideas." *Smart Sys. Innovations,* 873 F.3d at 1371. Additionally, we note that our reviewing court has held that use of an index to classify data is also an abstract idea. *See In re TLI*

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Commc'ns LLC Patent Litig., 823 F.3d 607, 613. Accordingly, Appellants' arguments have not persuaded us the Examiner erred in finding the claims recite an abstract idea.

Practical Application/Significantly more than Abstract Idea

The Examiner finds that the claims do not include additional elements that are sufficient to amount to significantly more than the judicial exception, as the additional elements of the claim "are simply a generic recitation of a computer and a computer network performing their generic computer functions." Final Act. 7; App. Br. 8; Answer 3, 4 (citing page 26 of Appellants' Specification). The Examiner finds the claimed invention to provide "no specific improvement to the way computers operate." Ans. 8. The Examiner further disagreed that the claims focused on a specific way of improving another relevant technology. Ans. 4–5. As such the Examiner concludes the claims do not amount to significantly more than the abstract idea. Final Act. 8; Ans. 4.

Appellants argue that the Examiner's rejection is in error as being inconsistent with the controlling case law. App. Br. 6–7. Furthermore, Appellants argue that the Examiner is overlooking the concept of a new and unconventional mechanism for improved data handling that provides improvements to the functioning of the computer itself and focuses on a "specific computer implementation of a solution in the computerized trading field" through "specific rules and perform[ing] specific functions." App. Br. 6–10. Appellants point to the claim as providing an "indexed data table" and "initiating transaction processing . . . before final prices are determined," alleging these features improve the data speed in the computerized trading.

App. Br. 8–10. Appellants allege error in the Examiner's finding that the claims recite using general purpose computers to perform generic, routine, and conventional functions as unduly reliant upon a single paragraph of Appellants' Specification, and that claims may be eligible despite their implementation on otherwise generic computer components. App. Br. 6–7. Appellants argue that when considered in light of the decisions in *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016), *Bascom Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016), and *Amdocs (Isr.) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288 (Fed. Cir. 2016) the claims are patent eligible. App. Br. 6–7.

We are not persuaded of error in the Examiner's finding that the claims are not directed to an improvement in the functioning of the computer or in another technical field. As identified by the Examiner, on page 4 of Answer, Appellants' claims are unlike the claims at issue in *Enfish* that were directed to a solution to a problem in the software arts. The court in *Enfish* held that the claims at issue focused "on an improvement to computer functionality itself, not on economic or other tasks for which a computer is used in its ordinary capacity." *Enfish*, 822 F.3d 1327, 1338. We note that paragraphs 2 through 4 and 7 of Appellants' Specification discuss problems in making trades in markets located in different time zones, and that the "effect of some embodiments of the disclosure is an improved and computerized method of executing trades priced relative to a reference benchmark value associated with an underlying index future." Specification paras. 2–4, 7. Appellant's reference to "initiating processing . . . before final prices are determined" (App. Br. 9) is likewise concerned with the requirement that the trade have a basis that is determined before the final

price determination, which concerns the financial concept rather than any particular technological implementation. In view of Appellants' arguments and Specification, the solution provided by Appellants' claimed device is not to improve the computer, or any other specific device, but rather to facilitate trade.

Further, Appellants' assertion that "[u]nder *Trading Technologies,* these are precisely the types of improvements that render claims *directed to trading platforms* eligible" is not well taken. App. Br. 8. In *Trading Technologies* the court stated:

> the claimed subject matter is "directed to a specific
> improvement to the way computers operate," *id.* for the claimed
> graphical user interface method imparts a specific functionality
> to a trading system "directed to a specific implementation of a
> solution to a problem in the software arts.

Trading Technologies 675 Fed. Appx. 1006 (citing *Bascom*). Here as discussed above, we do not find that the claims recite a solution to a problem in the software arts thus we are unpersuaded by Appellants' analogy to *Trading Technologies.*

Appellants argue that the inclusion of "specific, automated and unique processing functions that yield improvements" provides eligibility according to the decision in *McRO, Inc. v. Bandai Namco Games Am. Inc.,* 837 F.3d 1299 (Fed. Cir. 2016). App. Br. 7, 10. Specifically, Appellants argue that the claims use an indexed data table and a mechanism for initiating transaction processing ahead of time at improve data handling in computer trading related to speed and accuracy. App. Br. 8–9. As such, Appellants argue the claimed invention solves a technological deficiency and improves

a "critical technical problem in the field of computer network architectures in this art" and as such are directed to improving a technological process. App. Br. 9–10.

We are not persuaded of error by these arguments. Our reviewing court has remarked that "specific technologic modifications to solve a problem or improve the functioning of a known system generally produce patent-eligible subject matter," whereas "ineligible claims generally lack steps or limitations specific to" such solutions or improvements. *Trading Technologies Int'l. v. CQG Inc.* 675 Fed. Appx. 1001, 1004–05 (Fed. Cir. 2017) (collecting cases). Appellants have not identified, nor does the Specification describe, any specific technical attributes of the claimed "index structured data table" in the manner characteristic of claims found to directed to a technological improvement rather than to the recited abstract idea.

The data structure of *Enfish* was "not simply directed to *any* form of storing tabular data," but instead, required a very specifically defined means for configuring a logical data table that involved a four-step algorithm to render the table self-referential. *Enfish*, 822 F.3d at 1336. The invention of *McRO* went beyond "merely organizing existing information into a new form," but instead, used "a combined order of specific rules" in which "a relationship between sub-sequences of phonemes, timing, and the weight to which each phoneme is expressed visually at a particular timing." *McRO*, 837 F.3d at 1314–15.

The Federal Circuit again illustrated this distinction in *Data Engine Technologies, LLC v. Google LLC*, 906 F.3d 999 (Fed. Cir. 2018). *In Data Engine Technologies*, the court addressed a set of claims directed to a

specific method of navigating three-dimensional spreadsheets through the use of tabs. *Id.* at 1008–09. The inventive tabs permitted easy access to spreadsheet workspaces that previously required a user to "search through complex menu systems" and "memorize frequently needed commands." *Id.* at 1008. The claim "requires at least one user settable identifying character to label the notebook and describes navigating through the various spreadsheet pages that are identified by their tabs." *Id.* The court found the claims to require a "specific interface and implementation for navigating complex three-dimensional spreadsheets using techniques unique to computers." *Id.* at 1009. The court distinguished the claimed invention from one that would merely recite "a generic method of labeling and organizing" spreadsheet data. *Id.* at 1008-09.

In *Data Engine Technologies*, the court further addressed claims that recited "associating each of the cell matrices with a user-settable page identifier" without "the specific implementation of a notebook tab interface." *Id.* at 1012. The court held that these were claims not limited to the "specific technical solution and improvement in electronic spreadsheet functionality" set forth in the eligible tab claims, and were thus found ineligible. *Id.*

Similarly, in *Core Wireless*, the claimed invention provided a display interface that replaced prior interfaces requiring users to "scroll around and switch views many times to find the right data/functionality." *Core Wireless Licensing SARL v. LG Electronics, Inc.*, 880 F.3d 1356, 1363 (Fed. Cir. 2018). The claimed invention specified particular technological functionality in the form of "an application summary that can be reached directly from [a] menu" such that the summary window "is displayed while

the one or more applications are in an un-launched state." *Id.* at 1362–63. The court in *Data Engine Technologies* characterized the claimed invention in *Core Wireless* as not "merely directed to the abstract idea of indexing information," but instead providing "an improved user interface for electronic devices" such that the claim "was directed to an improvement in the functioning of computers." *Data Engine Techs, LLC v. Google LLC*, 906 F.3d at 1009.

The claims at issue recite an "index structured data table" but do not specify its structure. Claim 1 merely requires that the table store trade information in an indexed format and that the index may be searched for a trade indication. Appellants, in amending the claims to include that limitation, described the "index structured data table" as "an indexing technique (including the claimed trade identifier) and storage in a logical table having logical rows (i.e. the claimed data table)." Appellants' "Response" at 9, August 4, 2016. Appellants further explain that "the claimed database effectively stores information in an organized (indexed) manner." *Id.; see also* App. Br. 8. Appellants merely point to the existence of an indexed table; i.e., an "organized" table, rather than any specific structure or rules of the table that would cause the claimed index structured data table to exhibit technical features improving either the computer or a related technology in any manner analogous to *Enfish, McRO, Data Engine Technologies, Trading Technologies*, or *Core Wireless*.

To the extent that Appellants are arguing that the claimed indexed table provides a unique technological improvement, Appellants have failed to persuasively distinguish the claimed table from the concept of indexing present in any organized data collection (e.g. alphabetizing a phone book,

using the Dewey decimal system to index a library collection, using the patent classification to classify patent application, etc.). *See also In re TLI Commc'ns LLC Patent Litig.*, 823 F.3d 607, 613 and *Intellectual Ventures I LLC v. Erie Indemnity Co.* 805 F.3d 1315 1328 (Fed. Cir. 2017). Following the reasoning set forth in the aforementioned decisions, we do not find error in the Examiner's conclusion that the claimed invention is directed to an abstract idea and not to an improvement in computer or other technology.

Further, Appellants argue the claims do not preempt all procedures for data handling and are thus patent eligible. We are not persuaded of error by these arguments. A lack of complete preemption does not make the claims any less abstract. *See buySAFE, Inc.*, 765 F.3d at 1355; *see also Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015) ("While preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility."); *see also OIP Techs., Inc.*, 788 F.3d at 1362–1363 ("[T]hat the claims do not preempt all price optimization or may be limited to price optimization in the e-commerce setting do not make them any less abstract.").

In summary, Appellants' arguments have not persuaded us of error in the Examiner's determination that the claims recite an abstract idea, that of facilitating trades in priced relative to a reference benchmark value associated with an underlying index. Further, Appellants' arguments have not persuaded us that the Examiner erred in finding that the claims are not integrated into a practical application of that abstract idea, because the claims are not: directed to an improvement in the functioning of the computer or to other technology or other technical field; directed to a particular machine; directed to performing or affecting a transformation of

an article to a different state or thing; directed to using a judicial exception in some meaningful way beyond linking the exception to a particular technological environment such that the claim as a whole is more than a drafting effort to monopolize the judicial exception. Nor have Appellants' arguments persuaded us the Examiner erred in finding the additional limitations of the claims simply append well-understood and conventional activities such that the claim as a whole does not amount to significantly more than the abstract idea itself. Accordingly, we sustain the Examiner's rejection of claims 1 through 27 under 35 U.S.C. § 101 as being directed to patent ineligible subject matter.

Double Patenting Rejection

Appellants argue on page 11 of the Appeal Brief that the Examiner's double patenting rejection is provisional and elects not to address the rejection. We concur that the rejection is provisional and decline to reach the provisional rejection. *See Ex parte Moncla*, 95 USPQ2d 1884, 1885 (BPAI 2010) (precedential).

DECISION

The decision of the Examiner to reject claims 1 through 27 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED