TOPIC: J00   Subject Matter of Applications—Meaning of Art

           J10   Subject Matter of Applications—Computer Programs

SUJET :   J00   Objet des demandes—Signification de la technique

           J10   Objet des demandes—Programmes d'ordinateur

IN THE CANADIAN PATENT OFFICE

DECISION OF THE COMMISSIONER OF PATENTS

Patent application number 2,842,636, having been rejected under subsection 199(1) of the *Patent Rules* (SOR/219–251), has consequently been reviewed in accordance with paragraph 86(7)(c) of the *Patent Rules*. The recommendation of the Patent Appeal Board and the decision of the Commissioner are to refuse the application.

Agent for the Applicant:

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INTRODUCTION

[1]   This recommendation concerns the review of rejected patent application number 2842636, which is entitled "SYSTEM AND METHOD FOR CALCULATING AND DISPLAYING PROFITABILITY AND A MARKET RISK PROFILE FOR A PROPOSED TRADE ORDER" and is owned by Intercontinental Exchange Holdings, Inc. The Patent Appeal Board (the Board) reviewed the rejected application pursuant to paragraph 86(7)(c) of the *Patent Rules* (SOR/219–251).

[2]   As explained below, I recommend that the Commissioner of Patents refuse the application.

BACKGROUND

The application

[3]   The present application has a filing date of February 13, 2014. It was laid open to public inspection on September 13, 2014.

[4]   The claimed subject-matter relates to a method, device and system for receiving live market data, automatically and dynamically re-positioning the locations of the one or more market data indicators relative to the theoretical price indicator, and as the fluctuations in the live market data occur, indicating to the user through a graphical user interface (GUI) a change in profitability or unprofitability of one or more proposed trades caused by said fluctuations.

[5]   The application has 72 claims on file that were received at the Patent Office on November 7, 2019.

Prosecution history

[6]   On July 31, 2020, a Final Action issued pursuant to subsection 86(5) of the *Patent Rules*. The Final Action indicated that the application is defective on the ground that all of the claims 1 to 72 on file at the time of Final Action encompass

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non-patentable subject-matter and do not therefore comply with section 2 of the
Patent Act.

[7]   The responses to the Final Action dated November 23, 2020 and January 13,
2021 disagreed with the non-patentable subject-matter assessment.

[8]   On May 3, 2021 the application was forwarded to the Patent Appeal Board for
review under paragraph 86(7)(c) of the *Patent Rules* along with a Summary of
Reasons explaining that the rejection is maintained as the arguments presented
in response to the Final Action are not persuasive.

[9]   In a letter dated May 21, 2021, the Patent Appeal Board forwarded a copy of the
Summary of Reasons to the Applicant and requested that they confirm their
continued interest in having the application reviewed.

[10]   In a letter dated August 20, 2021, the Applicant confirmed their interest in having
the review proceed.

[11]   The undersigned was assigned to review the instant rejected application under
paragraph 86(7)(c) of the *Patent Rules* and to make a recommendation to the
Commissioner of Patents as to its disposition.

[12]   In a Preliminary Review letter sent February 19, 2024, I set out my preliminary
analysis of the patentable subject-matter issue with respect to the claims on file. I
was of the preliminary view that the claims on file are directed to non-patentable
subject-matter. The Preliminary Review letter also provided the Applicant with an
opportunity to make both written and oral submissions.

[13]   On April 1, 2024 the Applicant provided a written Response to the Preliminary
Review letter and a set of proposed claims (proposed claims set-1).

[14]   A virtual oral hearing was held on April 15, 2024.

[15]   A Post-Hearing Supplemental Response letter and a second proposed claims set
(proposed claims set-2) were received on April 29, 2024.

[16] I have completed a review of the instant application and provide below a final analysis and my recommendation with respect to the disposition of this application.

THE ISSUE

[17] The issue to be addressed by this review is whether claims 1 to 72 of the instant application are defective as lacking patentable subject-matter and are therefore non-compliant with section 2 of the *Patent Act*. As was the case in the Preliminary Review letter, it is my view that this also involves a question of compliance with subsection 27(8) of the *Patent Act*.

[18] After considering the claims on file, I reviewed the latest proposed claims submitted with the Post-Hearing Supplemental Response letter dated April 29, 2024 to determine if they would be considered a necessary amendment under subsection 86(11) of the *Patent Rules*.

PURPOSIVE CONSTRUCTION

Legal Principles and Office Practice

[19] In accordance with *Free World Trust v Électro Santé Inc*, 2000 SCC 66 [*Free World Trust*] and *Whirlpool Corp v Camco Inc*, 2000 SCC 67 [*Whirlpool*], purposive construction is performed from the point of view of the person skilled in the art (POSITA) in light of the relevant common general knowledge (CGK), considering the whole of the disclosure including the specification and drawings. In addition to interpreting the meaning of the terms of a claim, purposive construction distinguishes the essential elements of the claim from the non-essential elements. Whether or not an element is essential depends on the intent expressed in or inferred from the claim, and on whether it would have been obvious to the skilled person that a variant has a material effect upon the way the invention works.

[20] "Patentable Subject-Matter under the *Patent Act*" (CIPO, November 2020) [*PN2020–04*] also discusses the application of these principles, pointing out that all elements set out in a claim are presumed essential unless it is established otherwise or such presumption is contrary to the claim language.

Analysis

[21] In the Preliminary Review letter on pages 4 to 7, I set out a preliminary analysis in respect of the purposive construction of the claims on file, including identification of the POSITA and the relevant CGK:

> Since both interpretation of term meaning and identification of the essential elements are done in light of the relevant CGK, one must first identify the POSITA to determine their CGK.
>
> *The POSITA and the relevant CGK*
>
> The Final Action on page 2 defines the POSITA as a team consisting of "traders of financial instruments in cooperation with Information Technology personnel skilled in computerized systems for trading of financial instruments."
>
> With regard to the CGK, the Final Action states the following on page 2:
>
> > The person skilled in the art would possess the following CGK:
> >
> > - derivatives trading and associated financial instruments (instant application: par. [0002, 0015]);
> >
> > - theoretical models for valuation purposes (instant application: par. [0018, 0027]);
> >
> > - construction of trade orders using order quantities and price (instant application: par. [0026]);
> >
> > - comparison of prices (instant application: par. [0029]);

- live information display (e.g. current market bid/ask of a finance asset) in trading systems (instant application: par. [0002]), and

- computer components, devices, networks, and computer applications, including their design, implementation, operation and maintenance, including, but not limited to:

  - electronic exchange systems;

  - exchange of financial information data;

  - general purpose computers, special purpose computers, computing devices, processors, input and output devices, network interfaces, and user interfaces;

  - computer software and associated programming languages and memory devices and storage mediums;

  - distributed computing systems, including internetwork protocols and information/data transfers between devices and modules; and

  - computer databases and database management protocols.

In the Response to the Final Action dated August 31, 2020, the Applicant did not contest or otherwise comment on the characterization of the POSITA and their CGK as identified above.

The Summary of Reasons on page 2 presented the same identification of the POSITA and their CGK found in the Final Action.

Having reviewed the specification as a whole, it is my preliminary view that the characterization of the POSITA and their CGK as identified in the Final Action and the Summary of Reasons is reasonable and I therefore adopt it for the purposes of this preliminary review.

The claims on file

There are 72 claims on file. The method defined in independent claim 1 is taken as being representative of the independent claims as the computer device defined in independent claim 25 and the system defined in independent claim 46 embody said method. Independent claim 1 reads as follows:

1. A method for dynamically displaying live data fluctuations, the method comprising:

generating, by at least one computing device comprising one or more processors executing computer-readable instructions, a dynamic graphical user interface (GUI) that comprises and graphically displays a theoretical price indicator representative of a theoretical price, one or more market data indicators associated with one or more proposed trades, and one or more data fields prompting data entry;

responsive to said prompting, receiving by the at least one computing device at least one pricing parameter, at least one proposed order quantity and at least one proposed order price via the one or more data fields;

receiving, by the at least one computing device, live market data for at least one type of asset, said live market data being received via one or more constant data streams;

constructing, by the at least one computer device, one or more proposed trades based on the at least one proposed order quantity and the at least one proposed order price;

calculating, by the at least one computer device, a theoretical price based on the received live market data, the at least one pricing parameter, and the proposed order price;

positioning, by the at least one computing device, said theoretical price indicator on said GUI to represent the calculated theoretical price;

positioning, by the at least one computing device, said one or more market data indicators on said GUI, relative to said theoretical price indicator, in an initial relative position to reflect an initial level of profitability or unprofitability of said constructed one or more proposed trades that is determined based on the received live market data;

continuously monitoring, by the at least one computing device, the live market data to identify fluctuations in the live market data; and

in response to identifying the fluctuations in the live market data, automatically and dynamically re-positioning the locations of the one or more market data indicators relative to the theoretical price indicator, as said fluctuations occur, to indicate a change in said profitability or unprofitability caused by said fluctuations.

The dependent claims on file recite more details or additional limitations regarding the nature of the encompassed elements or steps.

[22] The Applicant did not contest or comment on the characterization of the POSITA and their CGK in the Response to the Preliminary Review letter, at the hearing or in the Post-Hearing Supplemental Response letter. I therefore adopt the above characterizations of the POSITA and their CGK for the purpose of my final analysis.

[23] In the Preliminary Review letter, I also expressed the preliminary view that all of the elements in the claims on file are essential. The Applicant did not contest or comment on the essentiality of the claimed elements and I therefore consider all of the elements of the claims to be essential for the purpose of my final analysis.

PATENTABLE SUBJECT-MATTER

[24] In my view, the actual invention defined by the claims on file is not directed to patentable subject-matter, for the reasons that follow.

Legal Principles and Office Practice

[25]   Any patentable invention must fall within the definition set out in section 2 of the *Patent Act*, including falling within one of the categories defined therein:

> **invention** means any new and useful art, process, machine, manufacture or composition of matter, or any new and useful improvement in any art, process, machine, manufacture or composition of matter.

[26]   Subsection 27(8) of the *Patent Act* also prescribes that:

> No patent shall be granted for any mere scientific principle or abstract theorem.

[27]   *PN2020–04* describes the Patent Office's approach to determining if a claim is patentable subject-matter:

> To be both patentable subject-matter and not be prohibited under subsection 27(8) of the *Patent Act*, the subject-matter defined by a claim must be limited to or narrower than an actual invention that either has physical existence or manifests a discernible physical effect or change and that relates to the manual or productive arts, meaning those arts involving or concerned with applied and industrial sciences as distinguished in particular from the fine arts or works of art that are inventive only in an artistic or aesthetic sense.

[28]   The determination of the actual invention is a relevant and necessary question in assessing patentable subject-matter (*Canada (Attorney General) v Amazon.com Inc*, 2011 FCA 328 at para 42 [*Amazon*]). As stated by the Federal Court of Appeal in *Canada (Attorney General) v Benjamin Moore & Co*, 2023 FCA 168 at para 68 [*Benjamin Moore*], this determination is in line with that Court's statement in *Schlumberger Canada Ltd v Commissioner of Patents*, [1982] 1 FC 845 (CA) at 847 [*Schlumberger*] that a patentable subject-matter assessment involves determining what, according to the application, has been discovered. The actual invention is identified in the context of the new discovery or knowledge and must

ultimately satisfy the "physicality requirement" that is implicit in the definition of "invention" (*Amazon* at paras 65 and 66).

[29]   There is a requirement for something with physical existence, or something that manifests a discernible effect or change. Nonetheless, the mere presence of a practical application does not meet this requirement (*Amazon* at paras 66 and 69). As *Amazon* (para 44) tells us, "a patent claim may be expressed in language that is deliberately or inadvertently deceptive" and that what appears on its face to be an "art" or "process" may in fact be a claim to an unpatentable mathematical formula. This was the situation in *Schlumberger*. In that case, the claims "were not saved by the fact that they contemplated the use of a physical tool, a computer, to give the novel mathematical formula a practical application" (*Amazon* at para 69)

[30]   The patentable subject-matter concerns regarding the well-known use of a computer to process an algorithm, illustrated by *Schlumberger*, are expressed in the factors set out in *PN2020–04* that may be considered when reviewing computer-implemented inventions, namely:

- the mere fact that a computer is among the essential elements of the claimed invention does not necessarily mean that the claimed invention is patentable subject-matter;

- an algorithm itself is abstract, unpatentable subject-matter and prohibited by subsection 27(8) of the *Patent Act*;

- a computer programmed to merely process an abstract algorithm in a well-known manner without improving the functionality of the computer will not make it patentable subject-matter; and

- if processing an algorithm improves the functionality of the computer, then the computer and the algorithm would together form a single actual invention that would be patentable.

[31] The above factors and the general concerns around the well-known use of a computer to process new abstract algorithms can be seen to involve considerations of novelty or ingenuity. Canadian law does not prohibit considerations of the novelty or ingenuity of elements of a claim in considering patentable subject-matter and finds support in situations like that of *Schlumberger* where a known tool, a computer, is used to give an abstract mathematical formula a practical application (*Benjamin Moore* at paras 69–70, referring to *Amazon*). These considerations assist in the determination of the discovery or new knowledge, the method of its application and the actual invention (*Benjamin Moore* at para 89) that is ultimately measured against the physicality requirement.

[32] As noted in *Benjamin Moore* at para 94 (and similarly expressed in *Amazon* at para 61), the physicality requirement will not likely be satisfied without something more than only a well-known instrument, such a computer, being used to implement an abstract method. The factors set out above from *PN2020–04* assist in determining whether something more is present.

Analysis

[33] In the Preliminary Review letter on pages 10 to 13, I set out my preliminary analysis of the patentable subject-matter issue:

> The actual invention in this case preliminarily appears to be directed to a set of rules or algorithm for:
>
> - generating a dynamic GUI that comprises and graphically displays a theoretical price indicator representative of a theoretical price, one or more market data indicators associated with one or more proposed trades, and one or more data fields prompting data entry;
>
> - responsive to said prompting, receiving at least one pricing parameter, at least one proposed order quantity and at least one proposed order price via the one or more data fields;

- receiving live market data for at least one type of asset, said live market data being received via one or more constant data streams;

- constructing one or more proposed trades based on the at least one proposed order quantity and the at least one proposed order price;

- calculating a theoretical price based on the received live market data, the at least one pricing parameter, and the proposed order price;

- positioning said theoretical price indicator on said GUI to represent the calculated theoretical price;

- positioning said one or more market data indicators on said GUI, relative to said theoretical price indicator, in an initial relative position to reflect an initial level of profitability or unprofitability of said constructed one or more proposed trades that is determined based on the received live market data;

- continuously monitoring the live market data to identify fluctuations in the live market data; and

- automatically and dynamically re-positioning the locations of the one or more market data indicators relative to the theoretical price indicator in response to the fluctuations in the live market data, as said fluctuations occur, to indicate a change in said profitability or unprofitability caused by said fluctuations.

This set of rules or algorithm is directed to data receiving, retrieval, monitoring, manipulation, identification and/or presentation.

The claims on file recite various computer-related elements, such as a processor configured to execute computer executable instructions (independent claim 1) stored in a non-transitory memory (independent claim 25) and an electronic exchange server comprising at least on[e] processor and at least one non-transitory computer-readable storage medium (independent claim 46).

A computer cannot be used to give an unpatentable abstract idea a practical application satisfying the physicality requirement implicit in the definition of invention in section 2 of the *Patent Act* simply by programming the idea into the computer by means of an algorithm (*Amazon* at paras 61 to 63, 66 and 69; *Benjamin Moore* at paras 69 and 87). This was the situation in *Schlumberger* where the computer was merely acting in a well-known manner.

According to *PN2020–04*, "[i]f a computer is merely used in a well-known manner, the use of the computer will not be sufficient to render the disembodied idea, scientific principle or abstract theorem patentable subject-matter and outside the prohibition under subsection 27(8) of the *Patent Act.*"

In my preliminary view, there is no suggestion in the specification that the claimed computer-related elements represent anything other than generic computer components. Similarly, in my preliminary view, there is no suggestion in the specification that the claimed computer-related steps performed by these elements represent anything other than well-known functions of generic computer components, or that the functioning of the computer is improved by the claimed steps. In my preliminary view, the computer-related elements are merely used in a well-known manner and are therefore not part of the single actual invention of the claims on file.

As identified above, the actual invention of the claims on file is a set of rules or algorithm that uses data receiving, retrieval, monitoring, manipulation, identification and/or presentation for dynamically displaying live data fluctuations, which is a set of abstract steps and rules that does not satisfy the physicality requirement as set out in *Amazon* and *PN2020–04*.

Furthermore, in my preliminary view, the additional limitations recited in the dependent claims do not add any features that would satisfy the physicality requirement and render the claims patentable.

In light of the above, it is my preliminary view that claims 1 to 72 on file are directed to non-patentable subject-matter, falling outside the definition of invention in section 2 of the *Patent Act* and prohibited by subsection 27(8) of the *Patent Act*.

Physicality requirement and production of a discernible effect or change as contemplated by Amazon

[34]   In my view, the subject-matter of the claims on file does not constitute a discernible effect or change or otherwise satisfies the physicality requirement as contemplated by *Amazon* for the following reasons.

[35]   As expressed in the Preliminary Review letter passage above, it is my view that the actual invention recited in the claim 1 on file is a series of abstract rules or algorithm. The set of abstract rules or algorithm is implemented by generic computer elements and generic input/display means that uses received market data and user input data to construct proposed trades and to calculate a theoretical price using a theoretical valuation model in order to dynamically display live data fluctuations that are indicative of a potential change in profitability or unprofitability caused by said fluctuations.

[36]   Likewise, independent claims 25 and 46, which themselves respectively represent a computer device or a system for performing the method steps recited in claim 1, are directed to an actual invention consisting of a series of abstract rules or algorithm.

[37]   In certain embodiments encompassed by dependent claims, the actual invention would also comprise configurations allowing the user to select which of the proposed trades—or only of the profitable proposed trades—to execute.

[38]   The following is a brief summary of Applicant's arguments that were submitted in the Response to the Preliminary Review letter, at the hearing and/or in the Post-Hearing Supplemental Response letter:

- dynamically displaying live market data to process a trade order or processing trade orders using the proposed claimed method and system constitutes a discernible effect or change and relates to the manual and productive arts;

- the proposed claim elements cooperate together to process correct trade orders on a single system that dynamically displays live market data and thus all the claims elements cooperate together to form an actual invention that constitutes patentable subject-matter;

- a physical user interaction through a GUI has physical existence or manifests a discernible effect or change;

- the recited GUI is an improved user interface that addresses technical limitations/shortcomings of prior art electronic trading systems regarding the ability of a trader to make an informed trade decision in the selection of a trade order;

- the GUI changes in real time based on the live market data and physically prevents the user from selecting unprofitable trades; and

- the instant patent application has similarities with patent applications previously reviewed by the Patent Appeal Board and the proposed claims are analogous to claims that were found allowable by the Patent Office.

[39] I will now consider the Applicant submissions within their relevant context.

[40] However, I first note that every application before the Patent Appeal Board is reviewed on its own merits, considering the facts of the particular case, the relevant case law, and the submissions by an Applicant to the assigned panel at that time. Previous reviews or allowances are not determinative of the current application under review.

[41]   Therefore, I make no determination below as to the similarity of the claims in the patent 2246933[1], patent 2874978[2], patent application 2518012[3] and patent 2507310[4] that were found allowable with those claims of the present application or proposed by the Applicant, or to the compliance of the allowable claims in the patent 2246933, patent 2874978, patent application 2518012 and patent 2507310 with *PN2020–04* and/or the legal principles laid out above in the section titled "Legal Principles and Office Practice".

WHETHER DYNAMICALLY DISPLAYING LIVE MARKET DATA TO PROCESS A TRADE ORDER OR PROCESSING TRADE ORDERS USING THE CLAIMED METHOD AND SYSTEM CONSTITUTES A DISCERNIBLE EFFECT OR CHANGE OR OTHERWISE SATISFIES THE PHYSICALITY REQUIREMENT AS CONTEMPLATED BY AMAZON

[42]   Although the Response to the Preliminary Review letter focuses on the proposed claims it also implies on page 2 and 4 that processing a trade order is an aspect of the invention already defined in the claims on file:

>   In the Proposed Claims, the Applicant has provided clarifying amendments about the claimed system and method for processing a trade order.
>
>   …

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[1] The Response to the Preliminary Review letter on pages 5 to 8 submits arguments based on a comparisons between Applicant's proposed claims and the granted claims of Canadian patent 2246933.

[2] The Response to the Preliminary Review letter on pages 8 to 9 submits arguments based on alleged similarities between the instant patent application and patent application 2874978 reviewed by the Board in *Landmark Graphics Corp (Re)*, 2021 CACP 42 wherein claims were found allowable.

[3] The Post-Hearing Supplemental Response letter on pages 4 to 7 submits arguments based on alleged similarities between the instant patent application and then patent application 2518012 reviewed by the Board in *BGC Partners, Inc (Re)*, 2021 CACP 24 as well as on a comparison between Applicant's proposed claims and the claims found allowable.

[4] The Post-Hearing Supplemental Response letter on pages 7 to 9 submits arguments based on alleged similarities between the instant patent application and then patent application 2507310 reviewed by the Board in *British Telecommunications PLC and Accenture Global Services Ltd (Re)*, 2021 CACP 25, wherein proposed claims were found allowable.

> The Applicant submits that a method and system for processing a trade constitutes a "discernible effect or change" stemming from the purchase, sale, and/or exchange of assets via a trade order. This aspect of the claimed invention is clarified in amended claim 1, which recites "A method for **processing a trade order by** dynamically displaying live data fluctuations…" [emphasis in the original]

[43] It is my view that the claims on file do not recite explicitly or implicitly a step wherein a trade order is processed. I also note the absence of any step or means to communicate a request for the processing of a trade order to an electronic exchange server, let alone any step or means for processing a trade order.

[44] This view is aligned with the preambles of the independent claims that state the purpose of the claimed invention and which recite a method (claim 1) and a system (claim 46) "for dynamically displaying live data fluctuations" or a computer device (claim 25) "to generate a graphical user interface (GUI) configured that dynamically displays live data fluctuations". In any case, I will address the argument here.

[45] On page 4 of the Response to the Preliminary Review letter the Applicant submits that:

> As written in *Amazon* and similarly restated in Practice Notice *PN2020–04*, the physicality requirement does not require that patentable subject matter must be something with physical existence, though that is of course one avenue by which the physicality requirement may be satisfied. Indeed, patentable subject matter can be "something that manifests a discernible effect or change", or something that is "concrete and tangible"… [footnotes omitted]

[46] On the basis of the above interpretation of *Amazon*, the Response to the Preliminary Review letter submits on page 4 that a method and system for dynamically displaying live market data to process a trade order or processing trade orders constitutes a discernible effect or change:

The Applicant submits that a method and system for processing a trade constitutes a "discernible effect or change" stemming from the purchase, sale, and/or exchange of assets via a trade order. This aspect of the claimed invention is clarified in amended claim 1, which recites "A method **for processing a trade order** by dynamically displaying live data fluctuations…". The exchange of assets via a trade order is concrete and tangible, and is more than a mere scientific principle or abstract theorem. The exchange of assets via a trade order further manifests in a discernible effect or change in financial markets, i.e., it produces an economic result in relation to trade, commerce, or industry. [emphasis in the original]

[47]   While the Applicant rightly submits on pages 3 to 4 of the Response to the Preliminary Review letter and pages 11 to 12 of the Post-Hearing Supplemental Response letter that *Amazon* refers to a "discernible effect or change", rather than more specifically a "physical" one, this language is used in the context of discussing the broader "physicality requirement" introduced at paragraph 65 of *Amazon*. As such, in my view, the "physical" limitation applies to both the existence and discernable effect or change criteria. This view is also expressed in footnote 11 of *PN2020–04* that reveals the view of the Patent Office on the matter:

> *Canada (Attorney General) v Amazon.com, Inc*, 2011 FCA 328, paragraphs 66 to 69.

> In paragraph 66, the court refers to "something that manifests a discernible effect or change". Given that this reference is made in the context of a discussion about the "physicality requirement", the Office understands this reference to be intended to refer to "something that manifests a discernible physical effect or change".

[48]   In addition to the arguments above, the Applicant at the hearing referred to the
         Computer-implemented Example 1[5] that is attached to *PN2020–04*. It was
         submitted that the claimed subject-matter have physical existence or manifest a
         discernible effect or change because: i) receiving live market data is equivalent to
         seismic measurements that rely upon discernible physical effects to produce their
         data; and/or ii) processing a trade order is equivalent to drilling for oil based on
         the results of the processing of the received data.

[49]   In my opinion, unlike physically performing seismic measurements and physically
         drilling for oil as per the context of the referred published practice example,
         receiving live market data, dynamically processing/displaying data and sending
         information to an electronic exchange server about a trade order request to
         process said trade order are steps defining the transfer, manipulation and
         presentation of abstract financial information or data that do not have physical
         existence or manifest a discernible physical effect or change as contemplated by
         Amazon.

[50]   This view would also apply to a step such as the processing of a trade order
         which amount to abstract data manipulation. A virtual exchange of assets does
         not have physical existence or manifest a discernible physical effect or change
         on the assets *per se*.

[51]   The Post-Hearing Supplemental Response letter on pages 7 to 9 further submits
         arguments based on views expressed by the Patent Appeal Board in *British
         Telecommunications PLC and Accenture Global Services Ltd* (Re), 2021 CACP
         25 [*British Telecommunications*] wherein it was found that the recording of call
         performance data that is generated by a user is not a generic data input step in
         the context of a computer-implemented contact center system. According to the
         Applicant, the claimed subject-matter of the present application is similarly
         directed to more than mere data input and manipulation as the claimed method
         and system of the present application receives the live market data and

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[5] https://ised-isde.canada.ca/site/canadian-intellectual-property-office/en/examples-patentable-subject-matter-analysis

automatically processes the live market data in conjunction with other data sources to provide up-to-date information for the trader to inform their selection of a trade order.

[52] In my view, the claimed subject-matter does not involve data recording means like those in *British Telecommunications*, for recording data generated from user calls and found to be "not just a computer being used in a well known manner" in the context of a computer-implemented contact center system. It is my view that in the context of a system for dynamically displaying live data fluctuations, or more broadly in a system for processing a trade order, the user inputs steps to construct proposed trades or to select which of the one or more proposed trades will be executed are generic data input steps.

[53] In the instant case, the claims on file or the rest of the specification do not suggest that the data receiving means, the data processing means or the data input/display means associated with the recited set of abstract rules are anything more than generic computer elements being used in a well-known manner in the context of a method or system that receives and dynamically displays live market data to a user to inform trade decisions.

[54] In fact, paragraphs [0012] to [0014], [0017] and [0021] of the instant application discuss the computer elements that may be used to implement the recited set of abstract rules. These passages describe the generic nature of the contemplated electronic exchange server, computer, network as well as generic user interface technology for providing user interface screens, including a GUI. The generic GUI may be configured to display different information to the user and to receive input from the user to make a selection (see paragraphs [0036] to [0046] of the instant application).

WHETHER THE GUI OR THE USER'S INTERACTIONS THROUGH THE GUI HAS PHYSICAL EXISTENCE OR MANIFESTS A DISCERNIBLE EFFECT OR CHANGE AS CONTEMPLATED BY AMAZON

[55]   The Post-Hearing Supplemental Response letter submits on page 10 that the GUI impacts the interaction with the user as it enables/disables trades selectable by the user based on profitability:

> The GUI is reactive to user input and synthesizes information from both the user and a physical network of servers to present to the user a selection of possible trades. The GUI presents this information to the user such that the user can quickly and easily ascertain the current market conditions and select, using the GUI, a profitable trade order for processing. The GUI achieves this by indicating to the user which trades are profitable and allowing the selection of profitable trades for processing, and further by restricting the user's ability to select an unprofitable trade for processing. The restriction to select an unprofitable trade may be overridden by an express user interaction with the GUI to enable the proposed unprofitable trades.

[56]   In my view, whether the GUI displays the results obtained from the execution of the recited set of abstract rules through a GUI in the form of profitability or unprofitability of the proposed trades, or displays only a limited number of selectable proposed trades to the user on the basis of profitability, it remains that the information displayed by the GUI, regardless of its meaning or practical significance to a user, represents a data output.

[57]   Further, specific GUI configurations such as one that allows a user to select which of the one or more proposed trades will be executed, one that prevents the user from selecting trades that are not profitable or one that allows the user to override the prevention of selecting trades that are not profitable, all use the well-known functions of a GUI to implement a set of rules regarding what option(s) will be available to the user.

[58] All GUI configurations in the instant application allow the presentation of information about potential trades and only the exact nature of the presented data and options differs across the different configurations. Again, the information and options displayed by the configured GUI, regardless of their meaning or practical significance to a user, is abstract in nature.

[59] The Applicant further submits in the same letter on page 11 that the GUI is responsive to the user physical input:

> In the present application, the GUI repositions market data indicators (i.e., graphical indicators) in response to live market data fluctuations (see e.g., para 55; claims 1, 24, 44, and 70). The user may further adjust inputs such as order quantity and price data using selection arrows on the GUI (see para. [0060]) in response to changes in the market data.

> In addition, the user can further interact with the GUI via zoom buttons to control the distance of the dynamically displayed market indicators relative to one another and/or relative to the theoretical price indicator (see para. [0069]). For clarity, this feature is reflected in independent claim 24 of the Proposed Claims to include "one or more zoom buttons" and "in response to the user's interaction with the one or more zoom buttons, position the one or more market data indicators on the GUI relative to the theoretical price indicator in a second relative position to reflect the initial level of profitability or unprofitability of said constructed one or more proposed trades".

> The presentation of the proposed trade and market data indicators is influenced by the physical interaction of the user with the interface to present the trade information differently to facilitate interpretation for making trade decisions.

[60] In my view, the required interaction between the user and the GUI to adjust inputs such as order quantity and price data using selection arrows on the GUI or the required interaction between the user with one or more of the virtual buttons of the GUI for selecting a trade to be processed is not sufficient to satisfy the

physicality requirement of *Amazon*, as these constitute mere generic input functions of a GUI.

Does the recited set of rules, or the GUI, improve the functionality of the recited computing device so that said set of rules and the computing device would together form a single actual invention?

[61] It is my view, for the following reasons, that the recited set of rules, or the GUI, does not improve the functionality of the recited computing device and/or the functioning of its computer elements.

[62] In consideration of whether something more is present to satisfy the physicality requirement from *Amazon*, in accordance with *PN2020–04* and the illustrative examples attached to it, it is relevant to determine whether the computer elements form part of the actual invention.

[63] In that regard, the Response to the Preliminary Review letter on pages 5 to 9 submits that the proposed claim elements, including the electronic processing system, cooperate together to process correct trade orders on a single system that dynamically displays live market data and thus all the claims elements cooperate together to form an actual invention that constitutes patentable subject-matter. As mentioned above, the Response to the Preliminary Review letter indirectly implies that the arguments also apply to the claims on file. Although I do not share that view I will nonetheless consider the arguments here.

[64] As discussed in *Benjamin Moore* at para 94, the physicality requirement of *Amazon* will not likely be satisfied without more than only a well-known instrument, such as a computer (or in this case a computing device and/or an electronic exchange server), being used to implement an abstract method, a series of abstract rules or an algorithm. The method for dynamically displaying live data fluctuations or the method for processing a trade order by dynamically displaying live data fluctuations is, in my view, itself a set of abstract data manipulation, analysis and presentation steps (see paras [49] to [50] above), the

implementation of which by means of a computer system is not in and of itself sufficient to satisfy the physicality requirement, as was the case in *Schlumberger*.

[65]   As indicated in *PN2020–04* and set out above in the list of factors taken therefrom, if the processing of a set of rules on a computer improves the functioning of the computer, then the computer and the set of rules together form a single actual invention that solves a problem related to the manual or productive arts and the subject-matter defined by the claim is patentable. In the language of *Benjamin Moore*, the new knowledge or discovery would include something that would satisfy the physicality requirement.

WHETHER THE RECITED SET OF RULES IMPROVES THE FUNCTIONALITY OF THE RECITED COMPUTING DEVICE AND/OR THE FUNCTIONING OF ITS COMPUTER ELEMENTS

[66]   There is no evidence in the instant application or in the Applicant's submissions supporting that the particular recited set of abstract rules or algorithm improves the functioning of any computing device. The set of abstract rules or algorithm uses received market data and user input data to construct proposed trades and to calculate a theoretical price using a theoretical valuation model in order to dynamically display live data fluctuations and to propose one or more trades to be executed. This does not improve the functioning of the computing device processing the set of abstract rules or algorithm, of the computing device's elements, or of any related electronic exchange server.

[67]   In the context of the instant claims on file all of the functions and actions taken by the recited computer elements are caused by the execution of the recited particular set of abstract rules, a set of rules that is not generally intended to address technical limitations/shortcomings of the computer elements or to improve the functioning of the computer elements. Rather, the execution of the recited particular set of abstract rules is generally intended to provide a user (i.e. investor) with up-to-date profitability and delta risk information in a format that is easy to comprehend and that would enable the user to make intelligent trading

decisions based on live market data (see notably paragraph [0003] of the instant application).

[68]   This view is aligned with passages contained in the paragraph bridging pages 4 and 5 of the Response to the Preliminary Review letter, in the first full paragraph of page 5 of the Response to the Preliminary Review letter and in the first full paragraph of page 6 of the Response to the Preliminary Review letter. These passages are respectively reproduced below [emphasis added]:

> The Applicant submits that the claimed method and system relate to the manual or productive arts. The claimed method and system are distinct from the fine arts, works of art, and consist of more than a mere aesthetic or artistic result. The dynamically displayed live market data is demonstrably functional **as it permits a user (i.e., an investor) to make an informed decision about a trade** (see e.g., paras. [0001]-[0004]) and, in response to the user's input, execute a trade order via an electronic exchange server (see e.g., paras. [0059]-[0069]).
>
> …
>
> The elements of the claims further cooperate together to achieve the claimed system and method for processing a trade order. **In particular, the elements of the claims cooperate together to inform a trader whether they can process a profitable trade based on live market data** and provides an interface on which a trade order may be purchased/sold (see e.g., paras. [0057]-[0069] of the present application).
>
> …
>
> The claimed method and system are directed to a trade processing system that dynamically displays live market data to a user **to inform trade decisions, namely, whether a particular trade order is profitable based on the real-time market conditions** (see e.g., paras. [0004], [0034], [0039]-[0046]).

[69]   On the basis of the considerations above, it is therefore my view that the generic computing device is processing the rules in a well-known manner with no improvement in the functioning of said computing device processing the set of abstract rules or algorithm, of the computing device's elements, or of any related electronic exchange server.

[70]   Even if I would consider a step of processing a trade order as an aspect of the subject-matter of the claims on file, which I do not for the reasons expressed above at paras [42] to [43], it is my view that processing a trade order does not improve the functioning of the computing device and/or the functioning of its computer elements or of any related electronic exchange server.

[71]   The Response to the Preliminary Review letter further submits that the claimed method and system are structured analogously to the granted claims of Canadian patent 2246933 following remand from *Amazon*, in which the Patent Office found the claim elements to cooperate together to form an actual invention that constitutes patentable subject-matter. On that basis, the Response to the Preliminary Review letter submits that the claims of the present application similarly cooperate together to form the actual invention that defines patentable subject-matter.

[72]   Before offering my observations, it bears repeating that every application before the Board is reviewed on its own merits, considering the facts of the particular case and that previous reviews or allowances are not determinative of the current application.

[73]   Whether or not a given claim is directed to patentable subject-matter or whether the computer elements and a set of rules together form a single actual invention is not determined on the structure of the claim alone and thus the result of any claim structure comparison is not a determinative finding.

[74]   Furthermore, I respectfully disagree with the submission that the Patent Office found the claim elements of the granted claims of Canadian patent 2246933 to cooperate together to form an actual invention as no decision of the Commissioner of Patents or court decision explains why the granted claims of

Canadian patent 2246933 were deemed to be directed to patentable subject-matter. This absence of reasons makes any comparison with the granted claims of Canadian patent 2246933 even less instructive.

[75]   The Response to the Preliminary Review letter on page 8 and 9 also presents arguments based on alleged similarities between the instant patent application and patent application 2874978 reviewed by the Board in *Landmark Graphics Corp (Re)*, 2021 CACP 42 [*Landmark*] wherein claims were found allowable.

[76]   It is my understanding that it was found in *Landmark* that the simulation calculations and the control parameters that they produce cooperate with the hydrocarbon production system to effect physical changes in its operation.

[77]   I expressed my distinguishing views above as to why dynamically displaying live market data to process a trade order, processing trade orders using the claimed method and system, the GUI, or the user's interactions through the GUI does not have physical existence or manifest a discernible physical effect or change as contemplated by *Amazon* (see paras [42] to [60]) and as to why the recited set of abstract rules does not improve the functioning of the recited computing device or any of its computer elements and thus together do not form a single actual invention (see paras [66] to [70]).

WHETHER THE GUI IMPROVES THE FUNCTIONALITY OF THE RECITED COMPUTING DEVICE AND/OR THE FUNCTIONING OF ITS COMPUTER ELEMENTS

[78]   The Applicant further submits in the Post-Hearing Supplemental Response letter on pages 4 to 7 that the Board recognized in *BGC Partners, Inc (Re)*, 2021 CACP 24 [*BGC Partners*] that a user's actions of entering trade commands on an improved user interface to enhance/improve the data entry functionality of the trading computer (e.g., to result in fewer input errors), satisfied the physicality requirement and that the recited GUI is an improved user interface that addresses technical limitations/shortcomings of prior art electronic trading

systems regarding the ability of a trader to make an informed trade decision in the selection of a trade order:

> The Applicant submits that the present application similarly describes an improved user interface to address technical limitations/shortcomings of prior art electronic trading systems, namely, regarding the ability of a trader to make an informed trade decision in the selection of a trade order. See, e.g., paragraph [0002] of the present application:
>
> > [0002]   Recent developments in derivatives trading have introduced a variety of complex trading possibilities for investors. The complexity of the financial instruments currently traded on the modern markets can make it difficult for an investor to make correct trading decisions. Currently, the available trading systems only provide a limited amount of information to the traders, such as the current market bid/ask of a financial asset. However, this information is often insufficient for informed trading decision-making.

[79]   I agree that the information presented through the GUI following the execution of the set of abstract rules by the computing device could arguably improve the ability of a user to make an informed trade decision.

[80]   However, it is also my view that an increased amount of information, the nature of the displayed information or the GUI configuration does not address technical limitations or shortcomings of commonly known GUIs in the art and does not improve data entry functionality as it was found in *BGC Partners*.

[81]   The recited set of abstract rules underlying the encompassed GUI configurations does not enhance or improve the data entry functionality, the display functionality or any other technical functionality of the GUI *per se*. What is arguably improved by the execution of the set of abstract rules is the quality/relevance of the information displayed by the GUI *vis-à-vis* informing the selection of a trade order by the user. As expressed in the Applicant's submissions presented above, the claimed subject-matter, including the encompassed GUI configurations, appears

intended to address the difficulties for an investor to make correct trading decisions. The issue to be addressed is a consequence of the complexity of the trading market and trading rules, not one of technical shortcomings associated with GUIs.

Conclusion on the subject-matter of the claims on file

[82]   The subject-matter of the independent claims on file does not satisfy the physicality requirement as set out in *Amazon* and *PN2020–04* as the actual invention of these claims is a series of abstract rules or algorithm implemented by generic computer elements and generic input/display means that use received market data and user input data to construct proposed trades and to calculate a theoretical price using a theoretical valuation model in order to dynamically display live data fluctuations that are indicative of a potential change in profitability or unprofitability caused by said fluctuations and, in certain embodiments, to propose one or more trades to be executed.

[83]   Relevant to the above conclusion is my view that neither the recited set of abstract rules nor the GUI improves the functioning of the recited computing device or any of its computer elements and thus together do not form a single actual invention.

[84]   Moreover, even if I would consider a step of processing a trade order as an aspect of the subject-matter of the claims on file, which I do not for the reasons expressed above, it is my view that this would be another abstract trading step that does not improve the functioning of the computing device, of the computing device's elements, or of any related electronic exchange server and otherwise does not satisfy the physicality requirement as set out in *Amazon* and *PN2020– 04*.

[85]   Furthermore and with regard to the dependent claims on file, it is my view that the recited additional limitations do not add any features not already addressed with regard to the independent claims or that would satisfy the physicality requirement and render the claims patentable.

[86]   In conclusion, it is my view that claims 1 to 72 on file are directed to non-patentable subject-matter, falling outside the definition of invention in section 2 of the *Patent Act* and prohibited by subsection 27(8) of the *Patent Act*.

Proposed claims

[87]   As mentioned above, the Applicant submitted a set of claims with each of the Response to the Preliminary Review letter (proposed claims set-1) and the Post-Hearing Supplemental Response letter (proposed claims set-2).

[88]   The proposed claims considered here are those of the proposed claims set-2 that contain the cumulative amendments resulting from both sets.

[89]   The following highlights the main amendments of proposed independent claims 1, 24 and 44 in view of the corresponding claims on file as well as the new independent claim 70:

   1.   A method for **processing a trade order by** dynamically displaying live data fluctuations, the method comprising:

        generating, by at least one computing device comprising one or more processors executing computer-readable instructions **and in communication with an electronic exchange server**, a dynamic graphical user interface (GUI) that comprises and graphically displays a theoretical price indicator representative of a theoretical price, one or more market data indicators associated with one or more proposed trades, and one or more data fields prompting data entry;

        responsive to said prompting, receiving by the at least one computing device at least one pricing parameter, at least one proposed order quantity and at least one proposed order price via the one or more data fields;

receiving, by the at least one computing device, live market data for at least one type of asset, said live market data being received via one or more constant data streams;

constructing, by the at least one **computing** device, one or more proposed trades based on the at least one proposed order quantity and the at least one proposed order price;

calculating, by the at least one **computing** device, a theoretical price based on the received live market data, the at least one pricing parameter, and the proposed order price;

positioning, by the at least one computing device, said theoretical price indicator on said GUI to represent the calculated theoretical price;

positioning, by the at least one computing device, said one or more market data indicators on said GUI, relative to said theoretical price indicator, in an initial relative position to reflect an initial level of profitability or unprofitability of said constructed one or more proposed trades that is determined based on the received live market data;

continuously monitoring, by the at least one computing device, the live market data to identify fluctuations in the live market data;

in response to identifying the fluctuations in the live market data, automatically and dynamically re-positioning the locations of the one or more market data indicators relative to the theoretical price indicator, as said fluctuations occur, to indicate a change in said profitability or unprofitability caused by said fluctuations; **and**

  wherein the GUI is configured to allow a user to select which of the one or more proposed trades will be executed, and

in response to the user's selection, sending to the electronic exchange server a trade order request to process the trade order based on the selected proposed trade.

24. A computer device comprising one or more processors, **the computer device in communication with an electronic exchange server to receive live market data, the live market data comprising live data fluctuations, the computer device** configured to execute computer executable instructions stored in a non-transitory memory, the computer executable instructions being configured, when executed, to generate a graphical user interface (GUI) configured **to process a trade order by** dynamically display**ing** the live data fluctuations, said GUI comprising:

    a theoretical price indicator associated with a theoretical price that is calculated based on at least one proposed order price, at least one pricing parameter, and live market data for at least one type of asset, said live market data being received by the computer device via one or more constant data streams;

    one or more market data indicators associated with one or more proposed trades that are constructed, by the computer device, based on at least one proposed order quantity and the at least one proposed order price;

    one or more zoom buttons; and

    one or more data fields prompting data entry,

    said computer device being further configured to:

    receive the live market data via the constant data streams;

    receive, responsive to said prompting, the at least one proposed order price, the at least one pricing parameter, and the at least one proposed order quantity via the one or more data fields of said GUI;

calculate the theoretical price;

construct the proposed trades;

position the theoretical price indicator on the GUI to represent the calculated theoretical price;

position the one or more market data indicators on the GUI, relative to the theoretical price indicator, in an initial relative position to reflect an initial level of profitability or unprofitability of said constructed one or more proposed trades that is determined based on the received live market data;

continuously monitor the live market data to identify fluctuations in the live market data;

automatically and dynamically re-position the locations of the one or more market data indicators relative to the theoretical price indicator to indicate changes to the initial level of profitability or unprofitability, as said changes occur, in response to said fluctuations;

in response to a user's interaction with the one or more zoom buttons, position the one or more market data indicators on the GUI relative to the theoretical price indicator in a second relative position to reflect the initial level of profitability or unprofitability of said constructed one or more proposed trades,

and wherein the GUI is configured to allow the user to select which of the one or more proposed trades will be executed, and

in response to the user's selection, sending to the electronic exchange server a trade order request to process the trade order based on the selected proposed trade.

44. A system for **processing a trade order by** dynamically displaying live data fluctuations, the system comprising:

an electronic exchange server comprising at least one processor and at least one non-transitory computer-readable storage medium having computer-readable program code portions stored therein, wherein the computer-readable program code portions, when executed, cause the electronic exchange server to:

generate a dynamic graphical user interface (GUI) that comprises and graphically displays a theoretical price indicator representative of a theoretical price, one or more market data indicators associated with one or more proposed trades, and one or more data fields prompting data entry;

receive, responsive to said prompting, at least one pricing parameter, at least one proposed order quantity and at least one proposed order price via the one or more data fields of said GUI;

receive live market data for at least one type of asset via one or more constant data streams;

construct one or more proposed trades based on the at least one proposed order quantity and the at least one proposed order price;

calculate a theoretical price based on the received live market data, the at least one pricing parameter, and the proposed order price;

position the theoretical price indicator on said GUI to represent the calculated theoretical price;

position the one or more market data indicators on said GUI, relative to said theoretical price indicator, in an initial relative position to reflect an initial level of profitability or unprofitability of said constructed one or more proposed trades that is determined based on the received live market data;

continuously monitor the live market data to identify fluctuations in the live market data;

in response to identifying the fluctuations in the live market data, automatically and dynamically re-position the locations of the one or more market data indicators relative to the theoretical price indicator, as said fluctuations occur, to indicate a change in said profitability or unprofitability caused by said fluctuations; **and**

wherein the GUI is configured to allow a user to select which of the one or more proposed trades will be executed, and

in response to the user's selection, sending to the electronic exchange server a trade order request to process the trade order based on the selected proposed trade.

70. **A method for processing a trade order, the method comprising:**

displaying by a computing device on a graphical user interface (GUI) live data fluctuations,

wherein the computing device comprises one or more processors executing computer-readable instructions, and the computing device communicates with an electronic exchange server;

receiving by the computing device live market data for at least one type of assets, wherein the live market data is received via one or more constant data streams from the electronic exchange server,

wherein the electronic exchange server receives the live market data from a market data server;

receiving by the computing device at least one pricing parameter, wherein the at least one pricing parameter is received via the one or more constant data streams from the electronic exchange server, and wherein the electronic exchange server receives the pricing parameters from a pricing parameter server;

receiving by the computing device a proposed order quantity from a user as a result of the user inputting the order quantity into the GUI;

receiving by the computing device at least one proposed order price from the user as a result of the user inputting the proposed order price into the GUI;

determining by the computing device one or more proposed trades based on the proposed order quantity and the at least one proposed order price;

determining by the computing device a theoretical price for the one or more proposed trades based on the received live market data, the at least one pricing parameter, and the proposed order price;

in response to live data fluctuations:

presenting the user by the computing device on the GUI the opportunity to submit a trade order request to process the trade order based on the one or more proposed trades by indicating to the user on the GUI whether the one or more proposed trades are profitable, wherein said presenting comprises:

positioning by the computing device one or more market data indicators associated with the live market data on said GUI, relative to a theoretical price indicator that is associated with the theoretical price, to reflect a level of profitability or unprofitability of the one or more proposed trades;

automatically and dynamically by the computing device re-positioning the locations of the one or more market data indicators on said GUI relative to the theoretical price indicator in accordance with fluctuations in the live market data; and

preventing the user by the computing device from submitting the trade order request to process the trade order based on at least one of the one or more proposed trades by disabling a corresponding selection button on the GUI to submit the trade order request when the at least one proposed trade is unprofitable; and

in response to the user's submission of the trade order, sending to the electronic exchange server the trade order request to process the trade order based on a selectable proposed trade among the remaining one or more proposed trades.

[90] Claims 17, 37 and 62 on file are deleted from proposed claims set-2 and the rest of the claims are renumbered accordingly.

[91] In my view, the main differences between the proposed claims and the claims on file is that, unlike the independent claims on file, the preambles of independent claims of proposed claims set-2 state that the purpose of the claimed method, computer device or system is to process a trade order and the independent claims of proposed claims set-2 also explicitly recite a step wherein a request to process a trade order is sent to the electronic exchange server.

[92] Another difference is that the independent claims 24 and 70 of proposed claims set-2 recite additional aspects of the defined GUI such as one or more zoom buttons and one or more data fields prompting data entry (claim 24) and preventing the user from submitting the trade order request by disabling a corresponding selection button on the GUI when the proposed trade is unprofitable (claim 70).

[93] However, I already considered and found above at paras [34] to [60] that processing trade orders, the GUI or the user interactions through the GUI buttons or data fields does not constitute a discernible effect or change or otherwise satisfy the physicality requirement as contemplated by *Amazon*. Further, I already considered and found above at paras [61] to [81], that the recited set of rules, or the GUI, does not improve the functionality of the recited computing

device so that said set of rules, or the GUI, and the computing device would together form a single actual invention. I consider that preventing the user from submitting the trade order request by disabling a corresponding selection button on the GUI is a matter of limiting the options presented by other GUI configurations with well-known function of a GUI which otherwise does not improves the functionality of the recited computing device and/or the functioning of its computer elements.

[94] It is therefore my view that the proposed amendments found in proposed claims set-2 would not affect the analysis of patentable subject-matter set out for the claims on file above as the arguments and submissions relating to the proposed claims were fully considered and the provided reasons would equally apply.

[95] Further, although I considered in my analyses above every argument made on the basis of the presence of a step for processing a trade order, it is my view that none of the proposed claims (or any claim on file) recite such a step for processing a trade as "sending to the electronic exchange server a trade order request to process the trade order based on the selected proposed trade" is not equivalent to and cannot be reasonably construed as processing a trade order *per se*. In any case and as stated above at para [50], it is my view that sending information to an electronic exchange server about a trade order request to process said trade order is a step defining the transfer and manipulation and abstract financial information or data that do not have physical existence or manifest a discernible physical effect or change as contemplated by *Amazon*.

[96] I therefore conclude that the proposed claims are also directed to non-patentable subject-matter and are non-compliant with section 2 and subsection 27(8) of the *Patent Act*.

[97] Since the proposed claims would not overcome the non-patentable subject-matter defect, they are not considered "necessary" amendments for compliance with the *Patent Act* and *Patent Rules* as required by subsection 86(11) of the *Patent Rules*.

CONCLUSIONS

[98] I conclude that the subject-matter of claims 1 to 72 on file is directed to non-patentable subject-matter, is non-compliant with section 2 of the *Patent Act* and, being abstract, is non-compliant with subsection 27(8) of the *Patent Act*.

[99] I also conclude that the claims of proposed claims set-2 submitted with the Post-Hearing Supplemental Response letter would not overcome the non-patentable subject-matter defect and therefore are not considered a "necessary" amendment for compliance with the *Patent Act* and *Patent Rules*, as required by subsection 86(11) of the *Patent Rules*.

RECOMMENDATION OF THE BOARD

[100]   In view of the above, I recommend that the application be refused on the ground that the subject-matter of claims 1 to 72 on file is directed to non-patentable subject-matter, is non-compliant with section 2 of the *Patent Act* and, being abstract, is non-compliant with subsection 27(8) of the *Patent Act*.

Marcel Brisebois

Member

DECISION OF THE COMMISSIONER

[101]   I concur with the conclusions and recommendation of the Board that the application be refused on the ground that the subject-matter of claims 1 to 72 on file is directed to non-patentable subject-matter, is non-compliant with section 2 of the *Patent Act* and, being abstract, is non-compliant with subsection 27(8) of the *Patent Act*.

[102]   Therefore, in accordance with section 40 of the *Patent Act*, I refuse to grant a patent on this application. Under section 41 of the *Patent Act*, the Applicant has six months within which to appeal my decision to the Federal Court of Canada.

Konstantinos Georgaras

Commissioner of Patents
Dated at Gatineau, Quebec
this 15th day of October, 2024.