TOPIC: J00   Meaning of Art

J10   Computer Programs

SUJET: J00   Signification de la technique

J10   Programmes d'ordinateur

Application No. : 2,876,128

IN THE CANADIAN PATENT OFFICE

DECISION OF THE COMMISSIONER OF PATENTS

Patent application number 2,876,128, having been rejected under subsection 30(3) of the *Patent Rules* (SOR/96-423) as they read immediately before October 30, 2019 ("former *Rules*") has consequently been reviewed in accordance with paragraph 199(3)(c) of the *Patent Rules* (SOR/2019-251) ("*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 Canadian patent application number 2,876,128 ("the instant application"), which is entitled "LIMITED MOVEMENT COLLAR ON MARKETABLE ORDER EXECUTION PRICE" and is owned by NYSE GROUP, INC. ("the Applicant"). A review of the rejected application has been conducted by the Patent Appeal Board ("the Board") pursuant to paragraph 199(3)(c) of the *Patent Rules*. As explained in more detail below, the Board's recommendation is that the Commissioner of Patents refuse the application.

BACKGROUND

The Application

[2]   The instant application was filed in Canada on December 23, 2014 and was laid open to public inspection on June 30, 2015. The application claims priority based on United States patent applications filed on December 31, 2013 and December 22, 2014.

[3]   The instant application relates to methods and systems for controlling trading in illiquid financial markets. Large market orders in illiquid markets (where there are large spreads between best bids and offers and low quantities of financial instruments available at the best prices) can trade at unfavorable prices. Part of the order may execute at the National Best Bids and Offers ("NBBO") price, while the remaining portion executes at successively worse prices based on the orders available for purchase/sale. Sudden large price movements are also a concern for those who have placed orders and may end up with unfavorable order executions. The application proposes that trades are subject to a collar price restriction, a price below which order executions are prevented. The collar price may shift over time depending on, e.g., executions of favorable limit orders and expiration of a collar price timer that starts in response to no order price matches at or above the set collar price with order executions being suspended as a result.

Prosecution History

[4]   On June 20, 2018, a Final Action ("FA") was written pursuant to subsection 30(4)

of the former *Rules*. The FA stated that the instant application is defective on the ground that all of the claims 1-33 on file at the time of the FA ("claims on file") encompass subject-matter that lies outside of the definition of "invention" and does not comply with section 2 of the *Patent Act*.

[5]   In responses to the FA ("R-FA-1" and "R-FA-2"), dated September 6, 2018 and October 26, 2018, respectively, the Applicant submitted two proposed claim sets 1-33. The arguments in each submission focussed on the patentability of the proposed claims therein, though the Applicant did note that they wished to incorporate by reference all the arguments made in previous responses to Office Actions.

[6]   As the Examiner considered the application not to comply with the *Patent Act*, pursuant to subsection 30(6) of the *former Rules,* the application was forwarded to the Board for review on March 13, 2019 along with an explanation outlined in a Summary of Reasons ("SOR"). The SOR set out the position that the claims on file were still considered to be defective as being directed to non-patentable subject-matter and therefore non-compliant with section 2 of the *Patent Act*. The SOR also indicated that the proposed claims submitted with R-FA-1 and R-FA-2 did not overcome the non-patentable subject-matter defect.

[7]   In a letter dated March 18, 2019, the Board forwarded to the Applicant a copy of the SOR and requested that the Applicant confirm its continued interest in having the application reviewed.

[8]   In a response dated June 18, 2019, the Applicant indicated its desire for the Board to proceed with a review of the application.

[9]   The undersigned was assigned to review the instant application under paragraph 199(3)(c) of the *Patent Rules* and to make a recommendation to the Commissioner of Patents as to its disposition.

[10]   In a preliminary review letter ("PR letter") dated October 29, 2021, I set out my preliminary analysis of the patentable subject-matter issue with respect to the claims on file based on the revised guidance set out in "Patentable Subject-Matter under the Patent Act" (CIPO, November 2020) [*PN2020–04*]. I was of the preliminary view that the claims on file are directed to non-patentable subject-

matter, are therefore non-compliant with section 2 of the *Patent Act*, and are prohibited by subsection 27(8) of the *Patent Act*. With respect to the claims submitted with the R-FA-1 and R-FA-2, my preliminary analysis focussed on the most recent set of claims submitted with the R-FA-2 ("proposed claims"), of which the Applicant was notified in the PR letter. I was of the preliminary view that the proposed claims would not overcome the patentable subject-matter defect.

[11] The PR letter also provided the Applicant with an opportunity to make oral and/or written submissions.

[12] After a request for a two-week delay to confirm the original oral hearing date set for December 10, 2021, which was granted, the oral hearing was rescheduled for January 10, 2022. On December 7, 2021, the Applicant requested that the oral hearing be cancelled. On December 8, the Applicant confirmed that no written submissions would be provided and that the Commissioner should proceed to issue a decision.

[13] I have reviewed the instant application in accordance with paragraph 199(3)(c) of the *Patent Rules* and provide my analysis below.

ISSUE

[14] The issue to be addressed by the present review is whether the claims on file are directed to patentable subject-matter.

[15] After considering the claims on file, I review the proposed claims to determine if they are considered a necessary amendment under subsection 86(11) of the *Patent Rules*.

LEGAL PRINCIPLES AND OFFICE PRACTICE

Purposive Construction

[16] In accordance with *Free World Trust v Électro Santé Inc*, 2000 SCC 66 and *Whirlpool Corp v Camco Inc*, 2000 SCC 67, purposive construction is performed from the point of view of the person skilled in the art 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.

[17] *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.

Patentable Subject-Matter

[18] The definition of invention is set out in section 2 of the *Patent Act*:

> ***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.

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

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

[20] *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.

[21] *PN2020–04* further describes the Patent Office's approach to determining if a computer-related invention is patentable subject-matter. For example, 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 and unpatentable subject-matter. A computer programmed to merely process the algorithm in a well-known manner without solving any problem in the functioning of the computer will not make it patentable

subject-matter because the computer and the algorithm do not form part of a single actual invention that solves a problem related to the manual or productive arts. On the other hand, if processing the algorithm improves the functionality of the computer, then the computer and the algorithm would 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 would be patentable.

ANALYSIS

Claim Construction

The person skilled in the art

[22] In the PR letter at page 4, I accepted the characterization of the person skilled in the art set out in the FA:

> In the FA at page 2, the person skilled in the art was set out:
>
> > …the notional person of skill in the art, or team of persons skilled in the art, would include traders and brokers of financial instruments in cooperation with Information Technology personnel skilled in computerized electronic trading systems.
>
> The Applicant did not dispute the above characterization of the skilled person and I preliminarily adopt it for the purpose of this review.

[23] The Applicant did not provide any submissions in response. I adopt the above characterization for the purposes of this review.

The relevant common general knowledge

[24] In the PR letter at pages 4-5, I also accepted the characterization of the relevant CGK set out in the FA:

> In the FA at page 2, the relevant CGK was set out:
>
> > The skilled person or team is also familiar with general purpose computer hardware and general purpose computer programming techniques. Given the level of detail in the specification, it is presumed that the implementation of the claimed features falls within the common general knowledge in the art.

> The common general knowledge of the skilled person or team also includes financial instruments and their trading in different kind of financial markets, including illiquid markets, general purpose computer software and hardware implementations, and computer networking technologies.
>
> None of the above has been disputed by the Applicant and I preliminarily adopt it for the purpose of this review.

[25] As the Applicant did not provide any submissions in response, I adopt the above characterization for the purposes of this review.

The claims on file

[26] In the PR letter at pages 5-6, I summarized the content of the claims on file and expressed the preliminary view that their meaning and scope would have been clear to the skilled person:

> The instant application contains three independent claims 1, 12 and 23, directed to a computer-implemented method for selectively executing trades in an electronic trading system, a non-transitory computer readable medium configured for storing instructions to do the same, and an electronic trading system performing the method, respectively. As the steps to be performed are the same in each, I take claim 1 as representative:
>
> 1. A computer-implemented method for selectively executing trades in an electronic trading system, comprising:
> suspending active execution of orders upon identifying a condition and reactivating active execution of orders upon resolution of the condition such that the execution of orders only occurs in the absence of the condition, said suspending comprising:
> receiving, by the electronic trading system, a marketable order and a plurality of non-marketable orders, the marketable and non-marketable orders each specifying at least one financial instrument, a quantity and a side, the non-marketable orders further specifying respective prices,
> said electronic trading system comprising one or more computers comprising computer-readable instructions stored on a non-transitory computer readable storage medium and executed by at least one processor, the electronic trading system further comprising an execution manager module;
> monitoring, by the execution manager module, market data from one or more electronic markets, said monitored market data comprising at least one of a best bid price, a best offer price, and a recently executed transaction price;

> determining, by the electronic trading system, a collar price based on the monitored market data retrieved from the one or more electronic markets;
>
> matching, by the electronic trading system, at least a portion of the marketable order to a non-marketable order of the plurality of non-marketable orders based on the prices of the nonmarketable orders, the matching occurring at a match price;
>
> determining, by the execution manager module, whether the match price is worse for the marketable order than the determined collar price;
>
> automatically suspending, by the execution manager module, execution of the matched portion of the marketable order when it is determined that the match price is worse for the marketable order than the determined collar price; and
>
> adjusting, by the execution manager module, the collar price based on current monitored market data.

I note that there have been no issues raised during the prosecution of the instant application in regard to the meaning or scope of any of the terms used in the claims on file. I proceed below on the basis that the meaning and scope of the claims would have been clear to the skilled person.

[27] With no submissions in response to the PR letter, I proceed on the same basis in the analysis below.

The essential elements

[28] In the PR letter at page 6, I set out a preliminary view of the essential elements of the claims on file based on the revised guidance provided in *PN2020-04*:

> *PN2020-04* states in respect of the identification of essential/non-essential elements that:
>
>> In carrying out this identification of essential and non-essential elements, all elements set out in a claim are presumed essential, unless it is established otherwise or is contrary to the language used in the claim.
>
> With respect to the claims on file, the person skilled in the art would understand that there is no use of language in any of the claims indicating that the elements in each claim are optional, alternatives or a preferred embodiment.
>
> Therefore, in my preliminary view, all the elements of the claims on file are considered to be essential, including the computer implementation and computer-related components.

[29] I proceed on the same basis that all elements of the claims on file are essential.

Patentable Subject-Matter

[30] At pages 6-11 of the PR letter, I presented my preliminary analysis of the patentability of the claims on file, reproduced below, concluding that in my preliminary view, the claims on file are directed to non-patentable subject matter:

> Claim 1 sets out a computer-implemented method that involves the suspension of trading order executions upon the occurrence of a particular condition and the reactivation of those execution orders when the condition has been resolved.
>
> The particular computer-related components comprise elements such as a processor and a non-transitory computer readable storage medium. With respect to the computer-related components used in the claimed invention, paragraphs [0032]-[0035] of the instant application discloses exemplary computer systems that may be used, including generic computers and input/output devices such as keyboard, mouse, etc. Servers may also be used rather than a single computer and may be connected to each other by means of wired/wireless networks such as server farms.
>
> While claim 1 sets out "an execution manager module", as defined at paragraph [0034] of the instant application, "module" refers to "computer program logic used to provide the specified functionality." In other words, a module is itself a set of computer implemented steps.
>
> Claim 1 sets out a series of steps that govern how the trading order executions are suspended/reactivated. Market data is monitored from "electronic markets" and this data is used to set a collar price. The collar price is used as a limit in deciding whether or not to execute a trade between a marketable and non-marketable order. If the price match is worse than the collar price, the execution of the trade is suspended. The collar price may be later adjusted based on changes in the monitored market data, but claim 1 does not specify on what basis this occurs. Later claims refer to the expiration of a timer, after which the collar price may be adjusted based on a parameter that was previously set for how much the price may be adjusted at a given time.
>
> There is no suggestion in claim 1 or the rest of the specification that the inputs and outputs associated with the electronic trading system are anything more that the well-known generic reception of data and output of the results of data processing, in this case an adjusted collar price.
>
> As discussed above, there is also no suggestion in claim 1 or the rest of the specification that the computer-related components are anything other than generic in nature.
>
> In accordance with *PN2020-04* and the illustrative examples attached to it, the question then becomes whether or not the computer forms part of the actual invention, the actual invention being the subject-matter against which patentable

subject-matter is determined. As indicated in *PN2020-4*, if the processing of an algorithm on a computer improves the functioning of the computer, then the computer and the algorithm 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.

While the Applicant's submissions in R-FA-1 and R-FA-2 focussed on the specific amendments made in response to the FA and resulting from telephone conferences with the Examiner, I note that the Applicant's pre-FA response dated July 25, 2017 included submissions that bear on the question of whether the computer elements and the steps performed by the trading execution control algorithm form a single actual invention that is patentable.

In the response of July 25, 2017, the Applicant contended that a technical problem has been solved and that by the claimed computer-implemented method, the electronic trading system's operating efficiency has been improved and post-execution processing has been reduced and/or eliminated by the suspension of problematic trade executions:

> …as explained at para. [0002] of the Applicant's specification, existing systems are incapable of controlling and/or limiting the price at which an order may execute, particularly in illiquid markets. However, it is important to note that this is <u>not</u> a result of inferior business practices. To the contrary, a person skilled in the art of <u>electronic trading systems</u> understands that this deficiency is a direct result of the inability of existing systems to communicate with and/or retrieve information from other (external) electronic markets in real time. Because of this, existing systems are unable to obtain the type of information needed to control and or limit the prices at which transactions may execute. As a result, existing systems are themselves compromised, as discussed further below.
>
> The Applicant has solved these computer deficiencies by providing a novel system that is specifically configured for monitoring and retrieving market data from <u>external</u> electronic markets, in real time, and then utilizing this data to automatically suspend transactions and adjust the prices at which transactions are permitted to execute (i.e., the 'collar price'). Thus, if a potential transaction has a match price that falls outside of the collar price, the claimed system <u>automatically</u> suspends execution of that potential transaction. By automatically suspending execution of transactions in this manner, the claimed invention actually <u>protects the system</u> against artificial / cascading price movements that can cause the system to lose stability and crash (see paras. [0004]-[0006], [0018], [0026], [0030] and [0037] of the Applicant's specification). As known to those of skill in the art, price cascading is a very dangerous proposition that can have long lasting and substantial detrimental systematic affects. This is particularly true in systems processing millions of transactions per second, where even

a slight price cascade can cause the system to spiral out of control and crash.

The claimed suspension feature, by its nature, also reduces the volume of transactions the system must execute and the amount of memory associated therewith, thereby improving the system's operating efficiency. In addition, the ability to automatically suspend transaction executions reduces and/or eliminates post-execution processing that would be required by downstream computer systems to address the artificial / detrimental price shifts, thereby providing further systematic improvements.

In contrast, conventional electronic trading systems are <u>not</u> capable of protecting against any such price movements, and as a result, suffer systematic affects. This is because conventional systems do <u>not</u> have any mechanism that *monitors market data from external sources and automatically adjusts a collar price based on the (current) monitored data*. Instead, conventional systems continue to execute transactions even in the presence of changing market conditions (e.g., changing prices), and as a result, needlessly execute transactions that should not have been executed and/or they are required to perform post-execution actions (e.g., executing offsetting compensatory transactions to offset the transactions that should not have been executed).

Furthermore, because of the lack of monitoring/adjusting in conventional systems, conventional systems <u>cannot</u> prevent price movements caused by user "panic" (see paras. [0006] and [0018] of the Applicant's specification). For example, in conventional systems, trading in illiquid markets suffers from large portions of large trades executing at substantially worse prices than the NBBO price. This results in large price movements that adversely affects market participants and reduces system stability. For example, trades executing at substantially worse prices cause artificial price shifts in the market, which in turn causes participants to react (and over-react) and directly leads to increased participant activity (e.g., a rush to buy or sell at the artificially-shifted price). This increased participant activity results in increased demands on the system's resources (e.g., memory, processor, etc.) in a relatively short period of time, which in turn destabilizes the system, depletes its resources, and severely reduces its operating efficiency. [Emphasis in original]

The Applicant's position in respect of the claims on file that benefits such as avoidance of artificial / cascading price movements that can cause the system to lose stability and crash and the reduction and/or elimination of post-execution processing, is premised on the idea that conventional systems cannot monitor

market data from external sources and automatically adjust a collar price based on the (current) monitored data.

However, claim 1 on file contains no limitation that the market data that is monitored is from "external sources." Claim 1 on file only states that market data is monitored from "one or more electronic markets" and does not limit electronic markets to those that are external to the claimed electronic trading system. I note that this interpretation of claim 1 is consistent with the language of claim 9 on file that depends on claim 1, which specifies that the best bid offer (BBO) prices are received from an "away electronic trading system". In view of the principle of claim differentiation, claim 1 is not so limited. Therefore, contrary to the Applicant's position, claim 1 on file does not provide the alleged improvements to computer functionality.

In my preliminary view, given that the computer-related elements of claim 1 on file are generic in nature, and the lack of any evidence that the steps performed by the computer system improves its functionality, the actual invention is the group of trade execution control steps themselves. This group of steps or algorithm is itself a series of abstract business rules and calculations. Therefore, it is my preliminary view that the actual invention of claim 1 on file is directed to subject-matter that is not "something with physical existence, or something that manifests a discernable effect or change" (*Canada (Attorney General) v Amazon.com Inc*, 2011 FCA 328 [*Amazon*] at paragraph 66).

Dependent claims 2-5 relate to the use of a timer, which is initiated if the match price for a marketable order is worse than the determined collar price. The execution of the order is delayed or cancelled, depending on the number of times the timer is triggered based on the price difference between the match price and collar price.

In my preliminary view, the use of a timing function, which is in this case part of a generic computer system, to implement the recited trading steps, does not make the computer-related components part of the actual invention. Therefore, as was the case with claim 1 on file, the actual inventions of these claims are still directed to the group of trade execution control steps themselves. This group of steps or algorithm is itself a series of abstract business rules and calculations and is not "something with physical existence, or something that manifests a discernable effect or change" (*Amazon* at paragraph 66).

Dependent claim 6 adds further criteria for determining the collar price, the steps themselves, absent any non-generic input/output steps or improvement in functionality, representing an actual invention that is also directed to a group of trade execution control steps, which group of steps or algorithm is a series of abstract business rules and calculations.

Dependent claims 7 and 8 are similar to claim 6 but focus on the posting price rather than the collar price. The actual invention of these claims are likewise a series of abstract business rules and calculations.

Dependent claim 9, as indicated above in the preliminary analysis of claim 1, specifies that the best bid offer (BBO) prices are received from an "away electronic

trading system." According to the Applicant, this brings benefits such as avoidance of artificial / cascading price movements that can cause the system to lose stability and crash and the reduction and/or elimination of post-execution processing. This is premised on the idea that conventional systems cannot monitor "market data from external sources and automatically adjusts a collar price based on the (current) monitored data" (see emphasized passage in quote from response of July 25, 2017, above).

In my preliminary view, the reception and output of information, such as BBO prices or information concerning a marketable order, from/to a remote entity, merely represents the generic input/output of information to/from the generic computer system used for the electronic trading system. Any such communication with a remote entity such as that providing the BBO prices, represents the well-known exchange of information within a computer network. As such, the actual invention of claim 9 is also directed to the group of trade execution control steps themselves, which group of steps or algorithm is a series of abstract business rules and calculations and is not "something with physical existence, or something that manifests a discernable effect or change" (*Amazon* at paragraph 66).

Dependent claims 10 and 11 relate to further parameters of the trading algorithm and also comprise actual inventions directed to a group of trade execution control steps, which group of steps or algorithm is itself a series of abstract business rules and calculations.

As noted earlier, independent claims 1, 12 and 23 comprise the same steps to be performed by the trading algorithm. Dependent claims 2-11, 13-22 and 24-33, which are dependent directly or indirectly on claims 1, 12 and 23, respectively, comprise the same additional features. Therefore, my preliminary view above for claims 1-11 on file also applies to claims 12-33 on file.

In light of the above, the actual inventions of claims 1-33 on file are directed to a series of abstract business rules and calculations and are not "something with physical existence, or something that manifests a discernable effect or change" (*Amazon* at paragraph 66). Therefore they are directed to non-patentable subject-matter, are non-compliant with section 2 of the *Patent Act* and are non-compliant with subsection 27(8) of the *Patent Act*.

[31] With no submissions having been made in response to the PR letter, none of the above reasoning has been disputed by the Applicant. I adopt it for the purposes of the present patentability assessment and conclude that claims 1-33 on file are directed to a series of abstract business rules and calculations and are not "something with physical existence, or something that manifests a discernable effect or change" (*Amazon* at paragraph 66). Therefore, they are directed to non-patentable subject-matter, are non-compliant with section 2 of the *Patent Act* and are prohibited by subsection 27(8) of the *Patent Act*.

Proposed Claims

[32]   The Applicant submitted a set of claims with each of R-FA-1 and R-FA-2. The
       proposed claims considered (those submitted with R-FA-2) contain the cumulative
       amendments resulting from both sets. The following highlights the
       additions/deletions of proposed claim 1:

> 1. A computer-implemented method for selectively executing trades in
> an electronic trading system, comprising:
>   suspending active execution of orders upon identifying a condition
> and
>   reactivating active execution of orders upon resolution of the
> condition such that the execution of orders only occurs in the absence of
> the condition, said suspending comprising:
>   receiving, by the electronic trading system, a marketable order
> and a plurality of non-marketable orders, the marketable and non-
> marketable orders each specifying at least one financial instrument, a
> quantity and a side, the non-marketable orders further specifying
> respective prices,
>   said electronic trading system comprising one or more
> computers comprising computer-readable instructions stored on a non-
> transitory computer readable storage medium and executed by at least
> one processor, the electronic trading system further comprising an
> execution manager module <u>and at least one of a web server, an
> application programming interface (API) and a network adaptor for
> communicating with a third party database across at least one of a wired
> or wireless network, the third party database storing current market data
> received from one or more remote electronic markets</u>;
>   monitoring, by the execution manager module <u>over the at least
> one of the wired or wireless network in real time or near real time, the
> current</u> market data <u>in the third party database</u> from <u>the</u> one or more
> <u>remote</u> electronic markets, said monitored market data comprising at
> least one of a best bid price, a best offer price, and a recently executed
> transaction price;
>   determining, by the electronic trading system, a collar price
> based on the monitored market data ~~retrieved~~ from the one or more
> <u>remote</u> electronic markets;
>   <u>adjusting, by the execution manager module, the collar price in
> real time or near real time to reflect the monitored market data such that
> the collar price shifts in response to changes in the current market data
> being monitored over said wired or wireless network</u>;
>   matching, by the electronic trading system, at least a portion of the
> marketable order to a non-marketable order of the plurality of non-
> marketable orders based on the prices of the nonmarketable orders, the
> matching occurring at a match price;

> determining, by the execution manager module, whether the match price is worse for the marketable order than the determined collar price;
>
> automatically suspending, by the execution manager module, execution of the matched portion of the marketable order when it is determined that the match price is worse for the marketable order than the determined collar price; and
>
> ~~adjusting, by the execution manager module, the collar price based on current monitored market data.~~

[33] At pages 12-13 of the PR letter, I set out my preliminary view as to the patentability of the proposed claims:

> Proposed claim 1 specifies several additional computer-related components such as a web server, API interface and network adapter. However, in my preliminary view, such components represent well-known components of a generic computer network system, which would have been well-known to a person skilled in the art with knowledge of computer networking technologies, as set out earlier in relation to the relevant CGK. The use of these generic computer system components in an expected manner does not result in them forming part of the actual invention of the claim. Likewise, it would have been expected that such systems would receive and process data in real time, such a feature also not forming part of the actual invention.
>
> While proposed claim 1 more clearly specifies that the electronic trading system interacts with a third party database and therefore monitors market data from external sources, this type of additional feature has already been addressed in light of the assessment of claim 9 on file, which specifies that remote market data is monitored and that the collar price may be modified based on that monitored data. Therefore, in my preliminary view, the addition of the monitoring of third party data that is itself received from another remote entity, does not result in any improvement of the functioning of the electronic trading system and therefore does not change the nature of the actual invention of claim 1 on file.
>
> The only other proposed changes to the claims were minor changes in wording to dependent claims 4 and 6, which would not affect the identification of the actual invention.
>
> In light of the above, the proposed amendments in R-FA-2 would not affect the analysis of patentable subject-matter set out for the claims on file above. Therefore, in my preliminary view, 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*.

[34] With no submissions from the Applicant in response to the PR letter, for the reasons set out above, I 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*.

[35] 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

[36] I have determined that the claims on file are directed to non-patentable subject-matter, are non-compliant with section 2 of the *Patent Act* and are prohibited subject-matter under subsection 27(8) of the *Patent Act*.

[37] In my view, the proposed claims are directed to non-patentable subject-matter and therefore are not considered "necessary" amendments for compliance with the *Patent Act* and *Patent Rules* as required by subsection 86(11) of the *Patent Rules*.

RECOMMENDATION OF THE BOARD

[38] In view of the above, the undersigned recommends that the application be refused on the grounds that the claims on file are directed to non-patentable subject-matter and are non-compliant with section 2 and subsection 27(8) of the *Patent Act*.

Stephen MacNeil

Member

DECISION OF THE COMMISSIONER

[39] I concur with the conclusions and recommendation of the Board that the application be refused on the grounds that the claims on file are directed to non-patentable subject-matter and are non-compliant with section 2 and subsection 27(8) of the *Patent Act*.

[40] 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.

Virginie Ethier
Assistant Commissioner of Patents

Dated at Gatineau, Quebec

this 5th day of January, 2022