

Commissioner's Decision No. 1505
Décision du commissaire n° 1505

TOPICS: J-00 Meaning of Art
J-50 Mere Plan

SUJETS: J-00 Signification de la technique
J-50 Simple plan

Application No. 2,799,873
Demande n° 2 799 873

IN THE CANADIAN PATENT OFFICE

DECISION OF THE COMMISSIONER OF PATENTS

Patent application number 2,799,873, having been rejected under subsection 30(3) of the *Patent Rules*, as they read immediately before October 30, 2019 [former *Patent Rules*], consequently has been reviewed in accordance with paragraph 199(3)(c) of the *Patent Rules* (SOR/2019-251). The recommendation of the Patent Appeal Board and the decision of the Commissioner are to refuse the application.

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INTRODUCTION

- [1] This recommendation concerns the review of rejected patent application number 2,799,873, which is entitled “System and Method for De-Risking a Pension Fund.” The patent application is owned by Manulife Investment Management Limited. The Patent Appeal Board (the “Board”) has reviewed the rejected application pursuant to paragraph 199(3)(c) of the *Patent Rules*. The outstanding defect to be addressed in this review is whether or not the claims define statutory subject matter. As explained below, our recommendation is to refuse the application.

BACKGROUND

The Application

- [2] Canadian patent application number 2,799,873 was filed on December 20, 2012 and was laid open to the public on May 9, 2014.
- [3] The application relates to methods and systems for de-risking a pension fund based on the funded status of a portfolio. A modelling algorithm is used to forecast data of a de-risking framework for determining an asset mix using a funded status volatility measure.

Prosecution History

- [4] On July 11, 2016, a Final Action (“FA”) was written pursuant to subsection 30(4) of the *Patent Rules* as they read immediately before October 30, 2019 [former *Patent Rules*]. The FA explained that the application is defective on the ground that claims 1-22 (“claims on file”) were directed to non-statutory subject matter and therefore did not comply with section 2 of the *Patent Act*.
- [5] In a January 9, 2017 response to the FA (“RFA”), the Applicant submitted arguments for the allowance of the claims on file. As the Examiner considered the application still did not comply with the *Patent Act* and *Patent Rules*, the application was forwarded to the Board for review pursuant to subsection 30(6) of the former *Patent Rules*, along with an explanation outlined in a Summary of Reasons (“SOR”) that maintained the rejection of the application.
- [6] In a letter dated March 21, 2017, the Board forwarded a copy of the SOR to the Applicant. In its response to the SOR (“RSOR”) of April 19, 2017, the Applicant indicated a continued interest in having the Board review the application and submitted further comments for consideration by the Board.

- [7] The present Panel was formed to review the application under paragraph 30(6)(c) of the former *Patent Rules* and to make a recommendation to the Commissioner as to its disposition. In a Preliminary Review (“PR”) letter dated August 15, 2019, the Panel set out its preliminary analysis and rationale as to why, based on the written record, the subject matter of the claims on file do not comply with section 2 of the *Patent Act*. The PR letter offered the Applicant the opportunities to attend an oral hearing and to make further submissions.
- [8] In a response dated September 12, 2019, the Applicant indicated an oral hearing was not desired, but that it intended to provide a response to the Panel’s PR letter. The Applicant’s response letter (“RPR”) was received on September 18, 2019 and provided further arguments as to why the application conforms to the *Patent Act* and *Patent Rules*.

ISSUE

- [9] The only issue to be addressed by this review is whether the claims on file define subject matter falling within the definition of invention in section 2 of the *Patent Act*.

LEGAL PRINCIPLES AND PATENT OFFICE PRACTICE

Purposive Construction

- [10] In accordance with *Free World Trust v Électro Santé Inc*, 2000 SCC 66, essential elements are identified through a purposive construction of the claims done by considering the whole of the disclosure, including the specification and drawings (see also *Whirlpool Corp v Camco Inc*, 2000 SCC 67 at paragraphs 49(f) and (g) and 52). In accordance with the *Manual of Patent Office Practice*, revised June 2015 (CIPO) [*MOPOP*] at §13.05, the first step of purposive claim construction is to identify the person of ordinary skill in the art (the POSITA) and his or her relevant common general knowledge (CGK). The next step is to identify the problem addressed by the inventors and the solution put forth in the application. Essential elements can then be identified as those required to achieve the disclosed solution as claimed.
- [11] As explained in *MOPOP* at §13.05.02c, not every element having a material effect on the operation of a given practical embodiment is essential to the solution; some recited elements define the context or environment of the embodiment but do not actually change the nature of the solution. Accordingly, purposive construction

must consider which elements are required for the solution—proposed by the specification and underlying the claimed embodiment—to achieve its result.

Statutory Subject Matter

[12] 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.

[13] Following the Federal Court of Appeal decision in *Canada (A.G.) v Amazon.com*, 2011 FCA 328, the Office released an examination memo (PN2013-03 “*Examination Practice Respecting Computer-Implemented Inventions*”, (CIPO, March 2013) [PN2013-03] that clarified examination practice with respect to the Office’s approach to computer-implemented inventions.

[14] As stated in PN2013-03, Office practice considers that where a computer is found to be an essential element of a construed claim, the claimed subject matter will generally be statutory. Where, on the other hand, it is determined that the essential elements of a construed claim are limited to matter excluded from the definition of invention (e.g., a mere idea, scheme, plan or rules, etc.), the claim will not be compliant with section 2 of the *Patent Act*.

ANALYSIS

Claim Construction

The skilled person and the relevant CGK

[15] The PR letter identified the POSITA as a team including “...one or more professionals in the financial planning and risk management industry experienced in the area of pension portfolio management. The team also includes the programmers or other technologists experienced with developing and providing the software, tools and infrastructure conventionally used to support such professionals.”

[16] In the PR letter, the CGK of the POSITA was identified as:

- knowledge of determining risk of pension funds;
- knowledge of mitigating pension fund risk;

- knowledge of conventional pension portfolio management and their related shortfalls;
- general-purpose computers, computing devices, processors, input and output devices, network interfaces and user interfaces;
- computer hardware and computer programming techniques;
- the use of databases and database management systems; and
- the use of such computers and computer devices in the financial planning industry for facilitating and automating financial planning services.

[17] In its RPR, the Applicant disputed the characterization of the POSITA, although did not indicate what was disagreed with or offer an alternative.

[18] In its RPR letter, the Applicant agreed with the first four points the Panel presented as CGK but “disagreed with the specific skills and knowledge identified as the CGK”, assumed by the Panel to reference the last three bullet points, with the reasoning that “an absence or low amount of details is not an indication that the POSITA possesses CGK corresponding to the omitted or low detailed knowledge”. The Applicant requested that documents be provided to support the identified CGK.

[19] The Panel submits that computer hardware, computer programming, databases, and using computing devices in the financial planning industry at the time of filing of the present application is not beyond what would be presumed to be known by a POSITA.

[20] Although the Panel considers the CGK of computer devices represented in the last three bullets to be well known, the following documents have been added as support:

DI: US 7,895,102	Wilks et al.	February 22, 2011
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D2: US 2012/0215719	Verlander	August 23, 2012
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[21] D1 discloses a financial planning tool available to users to monitor progress and goals as well as gathering data from a variety of financial sources to be used in the analysis. D1 describes the computer tools that were used and were well known at the time to those skilled in the art including computer hardware, programming, and data management (col. 11, line 37 to col. 13, line 42).

[22] D2 discloses methods and systems for modelling investment indexes through a variety of data. D2 also describes the computer tools that were well known to those

skilled in the art at the time including computer hardware, programming, data management, and the use of programmed modules (paras [0020] to [0032]).

- [23] In addition, the computer implementation of the disclosed rules is not enabled by the instant description, however, but by the CGK. As shown by D1 and D2, general-purpose computer systems and appropriate programming techniques for the financial planning industry are within the CGK. The application does not profess to teach an invention of which the computer implementation would require more from the skilled person than their CGK would provide. If it did, the application would be insufficient to enable the claimed invention.
- [24] Therefore, the Panel views the POSITA and CGK to be those that were presented in the PR Letter and discussed above.

The Problem and Solution

- [25] Based on the CGK of the POSITA and a fair reading of the application and having considered the Applicant's arguments presented in both the RFA and RSOR, the PR letter set out what the POSITA would have considered to be the problem and solution addressed by the application:

... we are of the preliminary view that the problem to be solved as seen by the POSITA with their CGK is a need for a way to determine pension fund portfolios that overcomes the deficiencies of conventional methods.

Our preliminary view is that the proposed solution embodied by the claims is to provide a modelling of pension portfolios to determine a de-risking framework scheme, based on determining funded status volatility.

- [26] In the RPR letter, the Applicant again suggests that the CGK is too specific in including extensive computer knowledge, which in turn leads to a problem and solution not requiring claimed computer components. The Applicant suggests that it is relevant to consider the "sheer volume, complexity, and volatility of data to be processed by a system or method in accordance with the presently pending claims".
- [27] The Panel respectfully disagrees. As explained in *MOPOP* at §13.05.02*b*, the scope of the CGK guides the identification of the problem and the solution—the skilled person reads a specification in the expectation that it sets out something more beyond the commonly known solutions to commonly known problems. Needing a computer for practical convenience (complicated calculations or large amounts of data) does not make the computer part of the solution for the working of an invention. Where a claim does not define a solution to a computer problem, or

overcome any technical problem in the operation of the computer system, it points to the use of the computer as a matter of convenience to perform calculations. Data processing and performing calculations are well-established functions of a computer as is the manipulation and analysis of data including an output representative of that analysis. There is an advantage to using computer software in the execution of the method, but, these advantages flow from the known capabilities of computers in performing calculations, and therefore the POSITA would have difficulty seeing them as part of as the solution offered by the present proposed invention.

- [28] Additionally, the Applicant stated that the practical problem must include the need to continuously monitor pension portfolios which requires the use of computer modules and processors.
- [29] The Panel submits that the problem and solution identified above are not related to continuous monitoring. The data is stored and then acquired to model portfolios which determine a de-risking framework, which leads to an asset mix; the asset mix is then evaluated and compared with benchmarks. The method may be run more than once, but once data is acquired a result can be given, results are not provided or evaluated continuously, nor is it required by the original specification. The Panel views continuously evaluating the already required data to be inconsequential as the input of the stored data hasn't changed.
- [30] In the RPR letter, the Applicant also provided arguments regarding the above problem and solution in relation to the essential elements identified by the Panel in the PR letter; we address those arguments below under the heading "The Essential Elements".
- [31] Therefore, as discussed in the PR letter, the Panel considers that the problem the skilled person would understand to have been addressed by the application is a need for a way to determine pension fund portfolios that overcomes the deficiencies of conventional methods.
- [32] The solution to the above problem, as discussed in the PR letter, is the method for modelling of pension portfolios to determine a de-risking framework scheme, based on determining funded status volatility.

The Essential Elements

[33] Independent claims 3 and 14 are considered representative of the invention; the other independent claims, being broader, cannot have more essential elements than those of claims 3 and 14. Claims 3 and 14 are, respectively, directed to a computerized method and system that recite the steps involved in providing rules for modelling a pension fund comprising determining a funded status volatility. The dependent claims specify further details regarding data requirements related to portfolio options.

[34] Claim 3 is reproduced below:

A method for managing a pension fund, the method comprising:

receiving asset class forecast data from an input module and storing the asset class forecast data in a database;

modeling a plurality of portfolios, using a processor and via a modeling module, based on the asset class forecast data in the database, the plurality of portfolios comprising a first model portfolio for an under-funded pension fund having a funded status level less than a selected percentage, a second model portfolio for an under-funded pension fund having a funded status level equal to or greater than the selected percentage, and a third model portfolio for an over-funded pension fund, each of the plurality of portfolios having an asset mix;

receiving from a client computer, via a network connection, a selected model portfolio from the plurality of portfolios based on the current funded status level of the pension fund;

continuously monitoring the performance of each of the plurality of portfolios with a processor by causing a volatility module to:

calculate a funded status volatility indicator for each of the plurality of portfolios;

compare the funded status volatility indicator with a predetermined funded status volatility benchmark to determine whether each portfolio is within a target range;

allocating, using the processor, the asset mix in which the pension fund is to be invested based on: the selected model portfolio by the client computer, and changes in response to determining that the selected portfolio is not within the target range.

[35] In the PR letter, the Panel set out its preliminary analysis to identify the essential elements of the claims that provide the solution to the problem. It was determined that the physical components of the claims, primarily computer-related features, were not essential:

As explained in MOPOP at §13.05.02c, not every element having a material effect on the operation of a given practical embodiment is essential to the solution; some recited elements define the context or environment of the embodiment but do not actually change the nature of the solution. Accordingly, purposive construction must consider which elements are required for the solution—proposed by the specification and underlying the claimed embodiment—to achieve its result. In claims 3 and 14, although computer devices are recited, they form part of the environment or context in which the invention operates, but is not essential to the solution to the problem of how to model a plurality of pension portfolios based on determining funded status volatility.

- [36] In the RPR letter, the Applicant stated that monitoring operating characteristics have been found to be an essential feature that cannot be omitted from the problem and solution as in the case of CD 1336 re Patent Application 2,344,781 March 22, 2013.
- [37] The Panel notes that each review of a rejected application before the Board is determined on its own merits and facts, and that the application of the Commissioner's Decision cited in the RPR did not address the same problem and solution as the instant application. Therefore, this case does not guide us on the essentiality of the computer-related components in the instant application.
- [38] Accordingly the Panel considers that the claims on file share the same set of essential elements for the identified solution as set out in the PR letter, namely:
- receiving asset class forecast data;
 - modeling a plurality of portfolios based on the asset class forecast data to determine a de-risking framework;
 - determining an asset mix for each of the model portfolios based on the de-risking framework; and
 - evaluating the model portfolios' performance within the de-risking framework by:
 - determining a funded status volatility indicator for each model portfolio;
 - comparing the funded status volatility indicator of each model portfolio with a predetermined funded status volatility benchmark to determine whether each portfolio is within a target range; and
 - reporting results of the comparison.

Statutory Subject Matter

- [39] The Applicant submitted in the RFA that since computer elements were among the essential elements the claimed invention should be allowable.

- [40] As construed above, the essential elements are the steps for modelling of pension portfolios to determine a de-risking framework scheme, based on determining funded status volatility; a computer is not among the essential elements. Such matter does not manifest a discernible effect or change of character or condition in a physical object. It merely involves the carrying out of a plan or theory of action without the production of any physical results proceeding directly from the operation of the theory or plan itself. Such matter is outside the categories of invention in section 2.
- [41] Therefore, our view is that claims 1 to 22 do not define statutory subject matter and thus do not comply with section 2 of the *Patent Act*.

RECOMMENDATION OF THE BOARD

[42] In view of the above, the Panel recommends that the application be refused on the basis that the claims on file define subject matter that is non-statutory and thus does not comply with section 2 of the *Patent Act*.

Mara Gravelle
Member

Leigh Matheson
Member

Marcel Brisebois
Member

DECISION OF THE COMMISSIONER

- [43] I concur with the findings of the Board and its recommendation to refuse the application on the basis that the claims on file define subject matter that is non-statutory and thus does not comply with section 2 of the *Patent Act*.
- [44] Accordingly, I refuse to grant a patent for this application. Under section 41 of the *Patent Act*, the Applicant has six months to appeal my decision to the Federal Court of Canada.

Johanne Bélisle
Commissioner of Patents
Dated at Gatineau, Quebec,
this 9th day of December, 2019