Commissioner=s Decision # 1339

Décision du Commissaire # 1339

TOPIC: J-00, J-10

SUJET: J-00, J-10

Application No: 2,144,068

Demande no: 2,144,068

IN THE CANADIAN PATENT OFFICE

DECISION OF THE COMMISSIONER OF PATENTS

Patent application 2,144,068, having been rejected by the Examiner under subsection 30(3) of the *Patent Rules*, was reviewed by the Patent Appeal Board and by the Commissioner of Patents. The recommendation of the Board and the decision of the Commissioner are as follows:

Agent for the Applicant

Sim & McBurney

6th Floor

330 University Ave.

Toronto, ON M5G 1R7

Introduction

[1] This decision deals with a review of the findings of the examiner in respect of Canadian patent application No. 2,144,068 entitled AFRAUD DETECTION USING PREDICTIVE MODELING@. The applicant is Fair Isaac Corporation, and the inventors are L. Biafore, W. Ferguson, K. Gopinathan, A. Jost, M. Lazarus, and A. Pathria.

[2] The application was filed on 7 September 1993, claiming a priority date of 8 September 1992. Examination was requested on 7 August 1997, and following six Office Actions a Final Action (FA) was issued to the applicant on 23 January 2009, rejecting the application for lacking statutory subject matter, obviousness, and indefiniteness. The applicant responded to the FA on 22 July 2010, amending the application to 12 claims and providing reasons why the amended claims overcame the examiner=s objections.

[3] Having determined the applicant=s amendments and arguments did not overcome the grounds for rejection, the examiner forwarded the application and a Summary of Reasons (SOR) to the Patent Appeal Board (PAB). The SOR also included an updated prosecution for the obviousness defect in view of *Sanofi-Synthelabo Canada Inc. v. Apotex Inc.*, 2008 SCC 61, [*Sanofi*]. The SOR was forwarded to the Applicant on 11 April 2011, with a letter from the PAB indicating that a hearing would be offered at a future date.

[4] A panel of three PAB members (Athe panel@) was established to review the case, and an invitation to attend a hearing was sent to the applicant on 24 May 2012. In view of the decision by the Federal Court of Appeal in *Canada (Attorney General) v. Amazon.com Inc.*, 2011 FCA 328 [*Amazon*], the panel at the same

time sent a memorandum containing additional comments relevant to the assessment of statutory subject matter and obviousness. The applicant was invited to confirm the hearing date and, if desired, to provide any written response to the memorandum.

[5] In a letter dated 21 June 2012, the applicant declined the opportunity for an oral hearing but indicated a written submission was forthcoming; this was received from the applicant on 15 August 2012, and addressed both the SOR and the panel=s memorandum.

[6] Accordingly, this recommendation is based on the written record that developed over the course of the above prosecution history.

Issue / Rejection Under Appeal

[7] In the SOR, the examiner maintained two issues for the panel to review (statutory subject matter and obviousness). As will be seen in the following paragraphs, our finding on the following single issue is sufficient to dispose of the application:

$ are claims 1 to 12 directed to non-statutory subject matter and thus outside the categories of invention defined in section 2 of the *Patent Act*?

Purposive Construction

[8] The Court in *Amazon* (at para. 47) addressed purposive construction in relation to statutory subject matter, stating that *Athe Commissioner=s determination of statutory subject matter must be based on a purposive construction of the patent claims*@.

[9] The Court (at para. 44) further stated that the Commissioner must be A*alive to the possibility that a patent claim may be expressed in language that is deliberately or inadvertently deceptive. Thus for example, what appears on its face to be a claim for an Aart@ or a Aprocess@ may, on a proper construction, be a claim for a mathematical formula and therefore not patentable subject matter...@,* referencing the situation in *Schlumberger* Canada Ltd. v. Canada (Commissioner of Patents), [1982] 1 F.C. 845 (C.A.) [*Schlumberger*].

[10] In response to the panel=s memorandum, the applicant questioned the extent to which a purposive construction was undertaken during prosecution. Purposive construction is undertaken A*...on the basis of a foundation of knowledge about the relevant art...@,* and for patent applications, with assistance *A...from staff at the patent office with the appropriate experience.*@ (*Amazon*, para 73). While there is no evidence of any apparent disagreement between the examiner and the applicant during prosecution as to the meaning of the terms in the claims, the significance of purposive construction in relation to statutory subject matter (in view of *Amazon, supra)* was not before the examiner. With that said, the panel will consider the construction of the claims herein.

[11] To accomplish this task, the panel reviews the specification as a whole to understand the background to the invention, the skilled person to whom the invention is directed and their common general knowledge (CGK) at the time, and finally the problem and solution the application addresses.

Background to the Invention:

[12] The subject matter of the present application pertains generally to automated methods and systems to detect fraudulent

financial transactions, particularly in the use of credit cards. Credit card issuers seek to minimize fraud losses by attempting to detect fraudulent card use as soon as possible, preferably before the cardholder has even reported the card lost or stolen.

[13] The application explains that prior art transaction processing systems use a mathematical model to detect fraudulent activity based on parameter analysis. In parameter analysis, simple Boolean equations or rules (e.g. Aif – then@ logic) are selected and applied to current credit card transaction data. If the selected rules are satisfied, a potential fraudulent use of that card is identified as likely to have occurred (e.g. if transaction > $X and transactions/hour > Y, then Aflag@ for review). The selection of the rules or logic to apply would be based on expert knowledge of their past efficacy or success.

[14] However, the application (description, pages 1-2) identifies several limitations of the prior art parameter analysis systems:

- they are restricted to a limited number of variables with simple Boolean rules, therefore complex interactions and relationships between many variables cannot be analyzed;
- they poorly differentiate fraudulent and valid behaviour, thus leading to low fraud detection rates and higher false positive rates; and
- they are difficult to modify or update as fraud behaviour changes or new fraud schemes emerge.

[15] The application (page 6) proposes to adapt a predictive model such as a neural network in place of the parameter analysis model, to overcome the above prior art limitations in fraud

detection. A neural network is a mathematical model containing information representing the learned relationships among a number of variables

[16] Neural networks Alearn@ relationships between input values and desired output values by a process known as training. Training utilizes an iterative process wherein previously obtained valid data is presented to the model, and the output of the model is compared to the known correct output of the valid data, to produce an error. Using the error information, input weights are adjusted on each internal processing linkage of the neural network to reduce the error. Weights therefore are the numerical representation of the learning process; they are used to multiply incoming values from other processing elements. Once the error is minimized and steady, the model is considered Atrained@ (i.e., the weights are set) and the model can then be used to Apredict@ the outputs for new (current) input data.

[17] The description (page 6) states that Aalthough a neural network is used in the preferred embodiment, any type of predictive modeling technique may be used@. A feed forward neural network, acknowledged as known in the art, is the preferred modeling technique, using the well known Aback propagation gradient descent optimization@ training method (description, page 21).

Person skilled in the art:

[18] The SOR characterized the skilled person in the art (in the analysis for obviousness) as a team including finance or business professionals as well as computer scientists or other technologists. In response to the SOR, the applicant did not identify any concerns with this characterization. The panel memorandum advised the applicant of our initial concurrence with the SOR definition of the skilled person. We invited the

applicant to address this point in writing and/or at a hearing. We take the lack of disagreement to mean that the applicant accepts these conclusions.

[19] However, the applicant did object to the further definition of the skilled person as one who is A*faced with the problem*@ of improving a fraud system, as was stated in the SOR. The panel, in adopting the SOR=s characterization of the skilled person, has not assumed that the skilled person was facing any specific problem.

Common General Knowledge

[20] Considering the skilled person, the panel finds that such a person or team would be familiar with prior computerized fraud transaction systems using parameter analysis (description, pages 1-2) including the techniques used to detect or predict fraudulent transactions using these systems. The skilled person would be familiar with the conventional computer hardware, data storage, display components, and associated programming, software and data communications used in these systems (description, pages 4-5). The application discloses that the invention is connected to a conventional financial data facility for collecting transaction information from conventional sources (description, page 4), using conventional authorization systems (description, page 30); the skilled person would be aware of these financial components.

[21] Further, as discussed above, the concept, design and application of predictive models, and specifically feed forward neural networks, was commonly known at the time of the invention (description, pages 6 and 21). Neural networks were known in automated data analysis, providing a mathematical modeling technique similar to regression analysis, but able to capture non-linearity and interactions among independent variables (description, page 6-7).

[22] Given a background in financial systems and computers, the skilled person would be well aware of the general desire of optimizing a fraud detection system to achieve an output that would indicate the likelihood of fraud with a high positive rate of detection, while minimizing any false positives.

[23] Finally, the panel notes that the SOR further characterized the CGK of the skilled team as familiar with the use, implementation and training of neural networks, and the application of neural networks in the field of financial services. Two references (O=Heney and Humpert, discussed in the SOR) teach the use of neural networks in loan and credit scoring, stock selection methods, bankruptcy predictions, and fraud detection methods. The applicant, having been invited to comment on the statements in the SOR, did not provide any comments disagreeing with the two references being cited as CGK. The panel has reviewed the references, both of which were published in trade journals, and both generally available more than two years prior to the claim date of the present application. We accept the references as CGK, and we consider that the general idea of using neural networks in financial applications, including fraud detection, would have been part of the knowledge of the skilled person.

Practical problem

[24] Based on the description and the CGK of the skilled person, the panel understands that credit card fraud detection using mathematical models (parameter analysis) is used but has certain limitations caused by the inherent simplicity of the model used. It was known that predictive models have the ability to overcome these limitations, by their ability to learn relationships among a large number of variables. It was also well known that feed

forward neural networks are a type of predictive model used in many fields, including financial applications. Such models define mathematical relationships between inputs and outputs. Finally, to be effective, predictive model algorithms such as neural networks require, by design, suitable training data so that the model may learn the necessary relationship between input and output values.

[25] Therefore, the practical problem is how to adapt a predictive model (or neural network) to improve credit card fraud detection over the previous parameter based model. In our understanding, the improvement in detection means that the output of the model has a higher probability of indicating a true fraud, and thus achieves a lower overall false positive rate.

Solution proposed by application

[26] A significant focus of the description (pages 5-9) is on the details for creating a training data set used to train the predictive model. The training data set input to the model is derived from past transaction data and consumer data (including a consumer profile of historical spending patterns), both of which are processed to form past fraud-related variables. According to the application (description, page 7), A*...data used to train the model are drawn from various database files containing historical data on individual transactions, merchants, and customers. These data are preferably pre-processed before being fed into the neural network, resulting in the creation of a set of fraud-related variables that have been empirically determined to form more effective predictors of fraud than the original historical data.@*

[27] The disclosure (pages 10-21) lists hundreds of potential fraud related variables (by name only) which may be considered for use in training the model, of which approximately 20 variables are identified as preferred. However, while the description lists many fraud-related variables that may be generated, it is left to the skilled person to decide on which variable(s) to use, or which may be more effective in fraud detection than others.

[28] The description also does not disclose any significant challenges or technical problems relating to the computer implementation of the predictive model or the creation of the training data set. While the description does provide an overview of the components used in the transaction system, it does not provide any detail describing specific hardware or software implementation difficulties that were overcome in applying a predictive model solution. Further, the description (page 4) explains that any person skilled in the art could implement the invention in any known manner, such as by using common software language, such as ANSI C.

[29] Once the model is fully trained, it is stored in the transaction system, ready for use on current transaction data. Current transaction data is processed in a manner similar to the creation of the training data: current transaction data is pre-processed to derive the desired current fraud related variables, and these variables are then used in the calculations of the trained neural network model to determine a likelihood that the current transaction is fraudulent. The process outputs a signal (score value) which is a numerical value representing a value indicating this likelihood.

[30] Therefore, we find that the solution proposed by the description is the provision of a specific derived training data set based

on past fraud-related variables, transaction data and consumer profiles of historical spending, where the training data set can be applied to a predictive model algorithm (neural network) to process current transaction data to output a score value indicating a likelihood of fraud.

Claims:

[31] The application contains 12 claims, with independent claims 1 and 12 defining a computer implemented process and system, respectively. The panel will consider the independent claims first: claim 1 is as follows:

Claim 1: A computer-implemented process for identifying and determining fraudulent transaction data in a computer-controlled transaction processing system including predictive modeling means for receiving current transaction data, processing the current transaction data, and outputting a plurality of output values including a score value representing a likelihood of a fraudulent transaction, comprising the steps of:

- prior to receiving the current transaction data for at least one current transaction:

- generating a consumer profile for each of a plurality of consumers from a plurality of past fraud-related variables and from consumer data, each consumer profile describing historical spending patterns of a corresponding consumer;

- the past fraud-related variables being derived by pre-processing past transaction data, the past transaction data including values for a plurality of transaction variables for a plurality of past transactions, the consumer data including values for each consumer for a plurality of consumer variables;

- training the predictive modeling means with the consumer profiles and with the past fraud-related variables to obtain a predictive model;

- storing the obtained predictive model in the computer;

- receiving current transaction data for a current transaction of a consumer, receiving consumer data associated with the consumer;

- receiving the consumer profile associated with the consumer;

- pre-processing the obtained current transaction data, consumer data, and consumer profile to derive current fraud-related variables for the current transaction;

- determining the likelihood of fraud in the current transaction by applying the current fraud-related variables to the predictive model; and

- outputting from the predictive modeling means an output signal indicating the likelihood that the current transaction is fraudulent.

[32] In view of the Court=s reasoning in *Amazon* (para 44, *supra*), the analysis to determine whether claim 1 defines statutory subject matter must consider whether or not the limitations of *Aa computer-implemented process@* and A*a computer-controlled transaction processing system@* are essential features of the claimed solution.

[33] First, we address A*a computer-controlled transaction processing system*@, which in claim 1 includes modeling means for receiving current transaction data, processing the current transaction data, and outputting a score value representing a likelihood of a fraudulent transaction. These elements collectively define features of a computer controlled transaction processing system as would be previously used with a parameter analysis model in detecting fraudulent credit card activity. As we discussed, the transaction system itself uses conventional hardware and software, and obtains data from conventional transaction databases. Storage for the parameter

analysis rules would be included in this hardware. The output score value is understood as the conventional fraud detection system output.

[34] The skilled person would consider these computerized features as material to the operating environment of the conventional fraud transaction system, but not essential to the solution of providing a training data set which can be applied to a neural network predictive model algorithm (neural network). Instead, these features define the specific working environment for the invention.

[35] We therefore find the feature of A*a computer-controlled transaction processing system*@ does not materially affect the working of the invention (solution to the problem), and thus is not an essential element of the claim.

[36] That leaves a consideration of the term A*computer-implemented process*@ as defined in the preamble of claim 1. The panel appreciates that neural networks, as with any type of algorithm or mathematical model, are typically executed using computers. Using a computer is especially convenient, since such models tend to employ mathematically-intensive calculations and use large amounts of data. However, needing a computer for practical convenience (complicated calculations or large amounts of data) does not make the computer essential for the working of an invention. Where a claim does not define a solution to a computer Aproblem@, 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.

[37] Considering the solution in claim 1, creating the training data set from the past fraud variables and consumer profiles is a

data processing function. Training a predictive model using this data set is an iterative mathematical process to calculate appropriate weights. Even applying the trained model with current transaction data is a simply a calculation with a numerical output, i.e., a score value. Data processing and performing calculations are all well established functions of a computer. As stated in *Schlumberger* (bottom, page 205), A*it is precisely in order to make that kind of calculation that computers were invented*@.

[38] Therefore, the role of the computer in claim 1 is primarily to perform the neural network calculations in an expeditious and efficient manner. It provides a convenient working environment for the method to operate, but the computer implementation is not material to the solution as disclosed in the application. We conclude that the computer implementation in the method of claim 1 is not an essential element of the construed claim.

[39] The remaining features of claim 1 pertain to the solution of adapting a predictive model to detect fraud in credit card transactions as discussed. We proceed on the basis that these features are presumed to be essential to the solution claimed.

[40] We comment briefly on the output signal (the score value). The application (description, page 5) states that the model A*determines a fraud score and reason codes (described below), which are output to the user, or to a database, or to another system via output device*@. The description does not disclose what the absolute score values mean, or how an analyst or another system would interpret the values; apparently, this is left to the skill of the analyst or other expert system. This confirms that the output signal is not something with a physical

existence or something that manifests a discernible effect or change, but is construed simply as a numerical value.

[41] Independent claim 12 defines similar features as the process of claim 1, but recites the features as components and means within a system:

Claim 12: A computer-controlled transaction processing system including predictive modeling means for receiving current transaction data, processing the current transaction data, and outputting a plurality of output values, including a score value representing a likelihood of a fraudulent transaction, including:

- a model development component for developing a predictive model, comprising:
    - means for receiving past transaction data for a plurality of past transactions, the past transaction data providing values for a plurality of transaction variables;
    - means for receiving consumer data for each of a plurality of consumers, the consumer data providing values for a plurality of consumer variables for each consumer;
    - means for pre-processing the past transaction data to derive past fraud related variables wherein at least some of the past fraud-related variables are not present in the plurality of variables in the past transaction data;
    - means for generating a consumer profile for each individual consumer, from the past fraud-related variables and the received consumer data, the consumer profile describing historical spending patterns of the consumer;
    - means for training the predictive model with the consumer profiles and with the past fraud-related variables; and
    - means for storing the trained predictive model in the computer; and

- a model application component, for applying the trained predictive model, comprising:
    - means for receiving current transaction data for a transaction of a consumer;
    - means for receiving consumer data associated with the consumer;
    - means for receiving the consumer profile associated with the consumer;
    - a current transaction data pre-processor, for pre-processing the obtained current transaction data, consumer data, and consumer profile to derive current fraud-related variables for the current transaction;
    - means for determining the likelihood of fraud in the current transaction by applying the current fraud-related variables to the predictive model; and
    - means for outputting from the predictive model an output signal indicating the likelihood that the current transaction is fraudulent.

[42] Claim 12 recites a system with the inclusion of Ameans for@ statements to define the functionality of the method of claim 1 in machine claim format. The broad processes of training and then processing the predictive model from claim 1 are defined by two means, a model development component and a model application component. Steps such as generating, receiving, or processing the data elements in claim 1 are simply replaced with Ameans for generating@, Ameans for receiving@, etc. in claim 12.

[43] Although defined in language of a system or machine claim, the panel sees no material difference between the features of claim 12 and the method steps of claim 1. Thus the panel considers that the essential features of the claimed invention of claim 12 are equivalent to those of claim 1. Accordingly, the computer and computerized components of claim 12 are not essential to the invention.

[44] Dependent claims 2-11 define a variety of limitations directed to the attributes of the predictive model, or the data used in the model. There was no specific issue before the panel as to the construction of the dependent claims, and their meaning is clear. The applicant did reiterate that all claims must be purposively construed; the panel has done so and concludes that our finding with respect to the computer features of claim 1 is unchanged. None of the dependent claims define any further computerized or other physical features (or discernible change) to the solution of claim 1.

Conclusion: Purposive Construction

[45] The panel therefore finds that the computer implementation of the invention is not an essential feature to the actual invention disclosed. Paraphrasing the Court in *Amazon* (see para. 44), we find that this is a case where, upon a purposive construction, the invention is not A*what appears on its face to be a claim@* to a computer-implemented method.

[46] We find the construed independent claims define a method that adapts a predictive model to improve fraud detection. The essential elements of the claims involve a series of steps of processing transaction data, customer profile data and past fraud-related variables to create a training data set, analysing the data to produce a trained predictive model, and then applying the current transaction data to a neural network algorithm to produce a numerical output indicating the likelihood of the current transaction as being fraudulent.

Issue: Statutory Subject Matter

Legal Principles and Guidelines

[47] Section 2 of the *Patent Act* sets out the categories of statutory subject matter:

> "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.

[48] The invention must not be directed to subject matter which is excluded from protection under the Act, such as a mere scientific principle or abstract theorem (ss. 27(8) of the Act), fine arts or works of art (*Amazon* at para. 58), or mental operations and processes, (*Schlumberger* at page 206)).

[49] The Federal Court of Appeal in *Amazon* provided guidance on s.2 by characterizing *Schlumberger* as a case in which a computerized method was nevertheless reduced to being only an abstract principle and mental process. As discussed in *Amazon* [paras. 62, 63, 66, 69, et al.], because a patent cannot grant for an abstract idea, it is implicit in the definition of invention that the subject matter of the claim must be something with physical existence or something that manifests a discernible effect or change: the physicality requirement cannot be met merely by the fact that the claimed invention has a practical application such as the presence of a computer. From *Amazon*, para. 62:

> [62] *Schlumberger* exemplifies an unsuccessful attempt to patent a method of collecting, recording and analysing seismic data using a computer

> programmed according to a mathematical formula. That use of the computer was a practical application, and the resulting information was useful. But the patent application failed for want of patentable subject-matter because the Court concluded that the only novel aspect of the claimed invention was the mathematical formula which, as a "mere scientific principle or abstract theorem", cannot be the subject of a patent because of the prohibition in subsection 27(8).

[50] The Court went on to state (para 63) that the issue of statutory matter might be resolved by a consideration of whether or not the purposively construed claims at issue could be distinguished from the facts in *Schlumberger*. On one hand, the claims may not be distinguished from *Schlumberger* if the only essential elements are an algorithm or mathematical formula that is programmed onto the computer; the claims in *Schlumberger* were not saved by the fact they contemplated the use of a physical tool such as the computer. On the other hand, claims at issue may be distinguished where the scheme, algorithm or process is not the whole of the invention but rather one of a number of essential elements in combination with the computer.

Analysis

[51] Considering the independent claims first, we have found that the essential elements of claims 1 and 12 involve the processing of customer transaction data, customer profile data and past fraud related variables to create a training data set, applying the data set to a neural network algorithm to produce a trained model, and then applying current transaction data to the model to calculate a numerical output indicating the likelihood of the current transaction as being fraudulent. On a purposive

construction of both claims, there are no essential computer or computerized limitations in respect of the invention.

[52] Similar to the method in *Schlumberger* characterized in *Amazon* at para 62 (*supra*), claims 1 and 12 define an attempt to patent a Amethod of collecting, recording, and analyzing@ data, using a computer programmed according to a mathematical formula. The formula in this case are the calculations, cost functions and weights of a neural network. As in *Schlumberger*, the mere presence of a computer or other physical tool in claim 1 or 12 does not render the otherwise abstract formula or calculations in the neural network patentable.

[53] Thus, the panel cannot distinguish the present claims from the situation in *Schlumberger* (as restated in *Amazon*, paras 63 and 69), as the only inventive aspect defined by the independent claims is an algorithm or mathematical formula, which is the whole invention. The claims are not saved by the fact they contemplate the use of a computer to give the mathematical formula a practical application.

[54] In response to the panel=s memorandum, the applicant argues that in distinguishing from the abstract calculations in *Schlumberger*, the steps of the method of claim 1 recite A*a complex process*@ to indicate likelihood of fraud, and therefore are not abstract. Comparing favourably to the claims in *Amazon*, the applicant contends that the steps of claim 1 A*require a complex interaction and communication between components in the processing system*.@ The Applicant further states that A*the complexities of programming these steps into a computer are not so easily overlooked. Unlike Schlumberger, the computer must be programmed with complex method steps to analyze, generate and manipulate data which cannot be performed by hand in any practical manner, if at all.*@

[55] The panel does not agree with the applicant that there are any complex method steps or complex interactions between components defined in the claims. Neither the claims nor the description identify or elaborate on any required complex programming or technical obstacles. Inventions by definition need not be complex; complexity is not a test for statutory subject matter. In some cases, overcoming a complex practical problem or disclosure of a complex technical solution may inform the question of statutory subject matter in an application. But the degree of complexity of an algorithm (e.g. a neural network) does not automatically render a method claiming such an algorithm statutory.

[56] The applicant also argues that if, following a purposive construction, one considers the Aactual invention@, it is physical (includes a computer) and causes a physical change/effect (output of the signal to identify a fraudulent transaction). Accordingly, the applicant contends that claim 1 (and claim 12) recites something that has a physical existence, with physical elements essential to make the invention work, thus further distinguishing the claims from *Schlumberger*.

[57] However, the purposive construction of the independent claims has found that the physical elements of the computer or any other components are not essential to the invention. Further, as we discussed when construing the claims above, the output of the solution is a number, representing a fraud score value, which by itself is abstract and has only intellectual meaning. We do not find, as the applicant contends, that the score value as defined causes a physical change or effect. Any further use or physical effect of the score value is a feature beyond the solution of the present application, and is not defined in either claim 1 or 12, or any dependent claim.

[58] Finally, the applicant surmises that even if one were to ignore the fact that the steps performed in the claimed invention were carried out by a computer, it would still meet the criteria for patentability. Unlike *Schlumberger*, the applicant argues that A*even without the computer the claims are not directed towards an abstract idea, but rather to an idea that requires the manipulation and analysis of data in specific steps to determine the likelihood of a fraudulent transaction, and then to provide an output representative of that analysis that can be readily understood by a user*@.

[59] On the last point, the panel would agree that the claims (without a computer) can be seen as relating to an idea that requires the manipulation and analysis of data and an output (a fraud score value) representative of that analysis. The panel notes that the purposive construction above arrived at substantially the same conclusion as the Applicant proposes. However, the panel does not agree these steps are not directed to an abstract idea. We have found that these steps are indistinguishable from the types of calculations, mathematical formula and mental processes that were in fact found to be abstract in *Schlumberger*.

[60] Therefore, the panel considers that based on a purposive construction of the essential elements of the invention, claims 1 and 12 define only data processing and mathematical calculations, which are not considered distinguishable from the situation found unpatentable in *Schlumberger*, as affirmed by the Court in *Amazon*.

Dependent claims 2-11

[61] Having earlier concluded from the construction of claims 2-11 that the computer implemented components or other physical

system components were not essential to the added matter of claims 2-11, the panel concludes there is nothing in these claims that would rectify the abstract condition of claim 1.

Conclusion

[62] Therefore, as found by this panel, claims 1-12 are abstract and do not define an invention under Section 2 of the *Patent Act*.

Recommendation

[63] In view of the above findings, the Board recommends that the application be refused for the claims being directed to subject matter outside the definition of Ainvention@ and therefore non-compliant with section 2 of the *Patent Act.*

Andrew Strong	Mark Couture	Paul Sabharwal
Member	Member	Member

Decision

[64] I concur with the Patent Appeal Board=s findings and its recommendation that the application be refused for the claims being directed to subject matter outside the definition of Ainvention@ and therefore non-compliant with section 2 of the *Patent Act*.

[65] Accordingly, 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.

Sylvain Laporte
Commissioner of Patents

Dated at Gatineau, Quebec,
this 28th day of March 2013