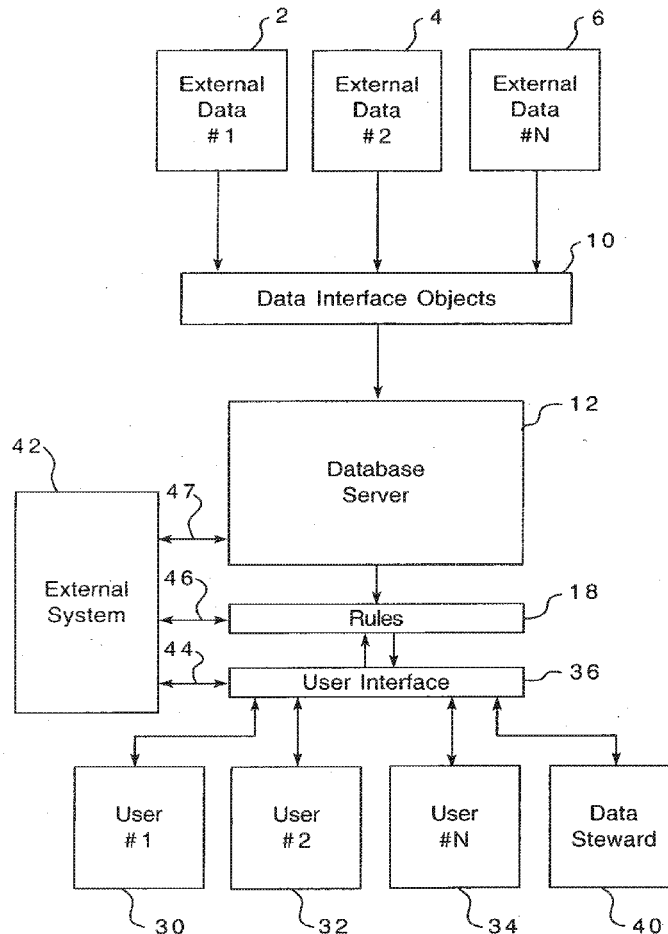(19) **United States**

(12) **Patent Application Publication** (10) Pub. No.: US 2017/0116673 A1

Petrov (43) **Pub. Date:** **Apr. 27, 2017**

(54) **METHOD OF PROCESSING INVESTMENT DATA AND ASSOCIATED SYSTEM**

(71) Applicant: **Access Data Corporation**, Pittsburgh, PA (US)

(72) Inventor: **Alexander Serge Petrov**, Pittsburgh, PA (US)

(21) Appl. No.: **15/340,751**

(22) Filed: **Nov. 1, 2016**

Related U.S. Application Data

(63) Continuation of application No. 14/333,901, filed on Jul. 17, 2014, now abandoned, which is a continuation of application No. 10/944,202, filed on Sep. 17, 2004, now Pat. No. 8,793,182.

Publication Classification

(51) **Int. Cl.**
        G06Q 40/06 (2006.01)
        H04L 29/06 (2006.01)
        G06Q 40/02 (2006.01)
        G06F 17/30 (2006.01)

(52) **U.S. Cl.**
        CPC *G06Q 40/06* (2013.01); *G06F 17/30896* (2013.01); *G06F 17/30864* (2013.01); *H04L 63/20* (2013.01); *G06Q 40/025* (2013.01)

(57) **ABSTRACT**

A computerized method for processing investment data includes providing a server supporting a database for receiving, processing and storing investment data; providing a rules engine for processing rules data employing rules relating to credit assignment; introducing into the server investment data from a plurality of external sources, processing the rules data by the rules engine and permitting user access to the processed and stored investment data. Information regarding customer investments, client information and investment transaction information is provided in the server. A corresponding system is disclosed.
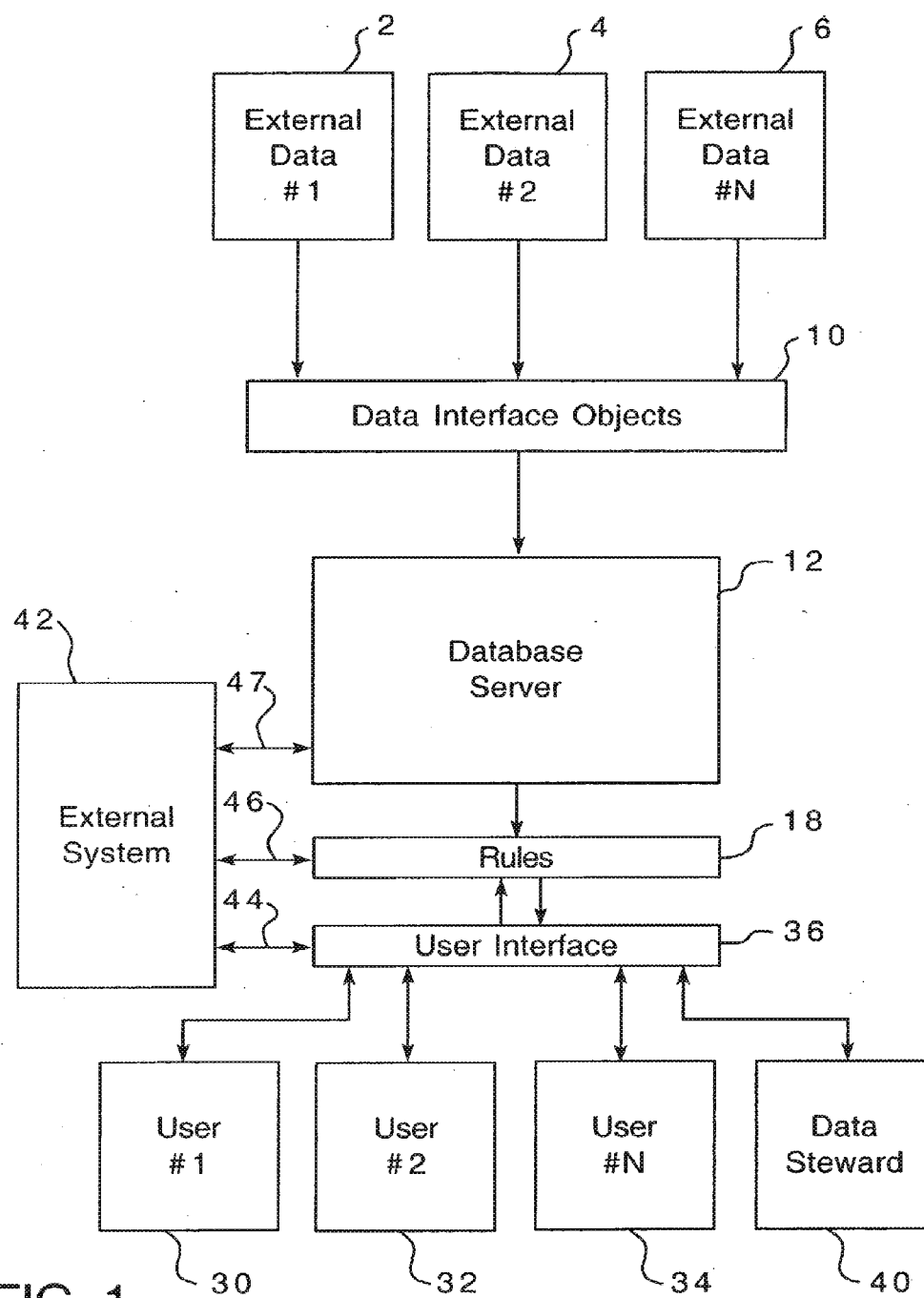
External Data # 1 — 2

External Data # 2 — 4

External Data #N — 6

Data Interface Objects — 10

Database Server — 12

External System — 42

47

46

44

Rules — 18

User Interface — 36

User # 1 — 30

User # 2 — 32
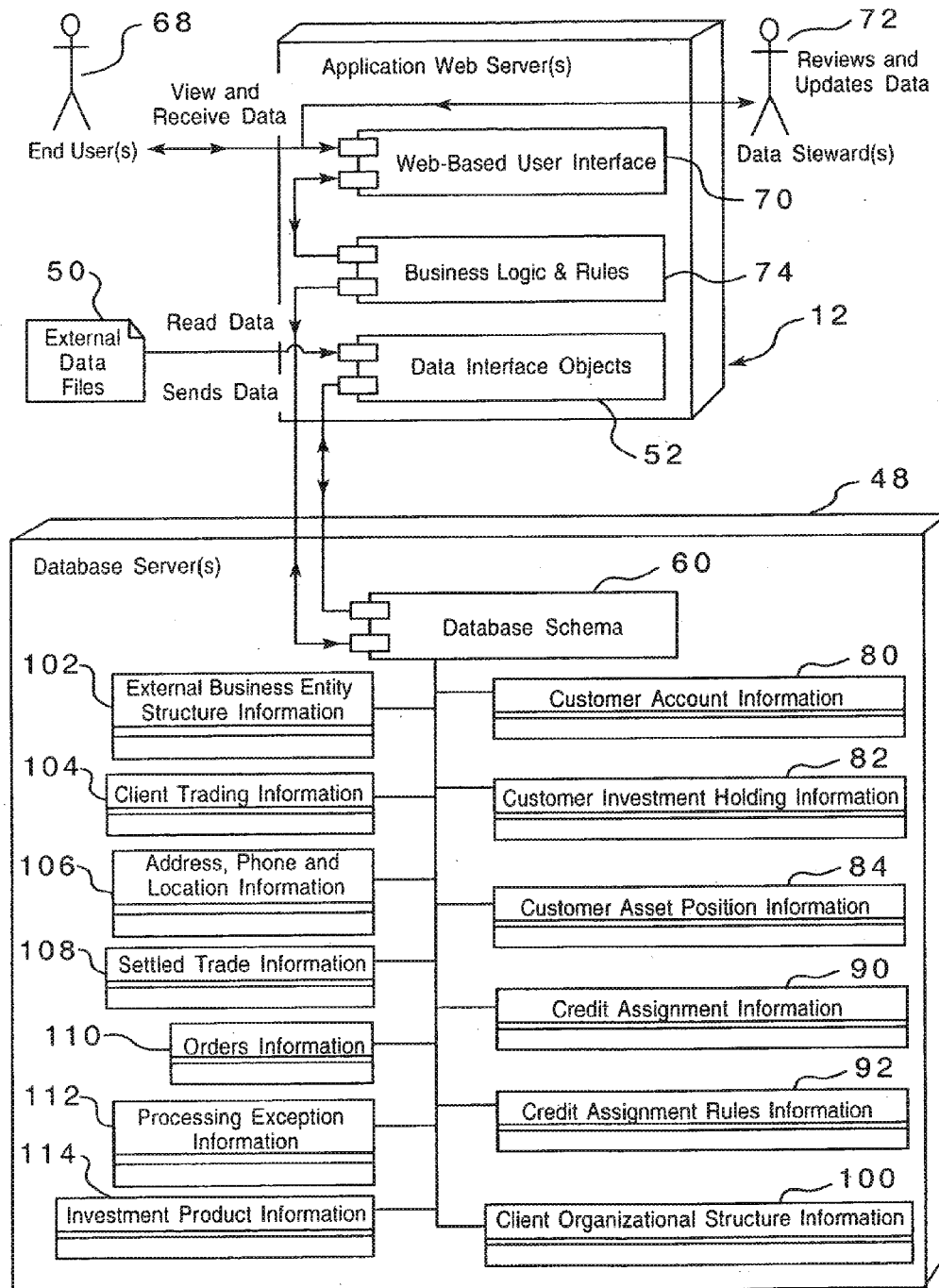
User #N — 34

Data Steward — 40

FIG. 1

FIG. 2

METHOD OF PROCESSING INVESTMENT DATA AND ASSOCIATED SYSTEM

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to an improved method and associated computerized system for providing efficient processing of investment data including transactional data and holdings and more specifically, it relates to such a method and a related system which will facilitate determination of credit assignment for compensation and other purposes and will provide detailed information regarding investment transactions, customers and clients.

[0003] 2. Description of the Prior Art

[0004] It has long been known to employ computers to receive data, process the same within a computer and store the same for retrieval from a database.

[0005] In the field of investments, the very high volume of investment transactions and wide range of determinations that need to be made and records provided have led to the recognition that a computerized system for receipt, processing, storing and outputting various types of investment data in various formats would be advantageous. See, for example, U.S. Pat. Nos. 5,749,077 and 5,893,079.

[0006] One of the problems that exists in connection with the processing of large volumes of investment transactions and holdings is the monitoring of customer activities and assets and accurate computation of the various segments of the investment community interacting on behalf of a given customer directly or indirectly in a given transaction thereby making the computation of the financial credit or compensation due difficult.

[0007] There remains, therefore, a real and substantial need for an effective automated system which can accurately and rapidly process large volumes of investment data received from multiple external sources and apply rules to the same so as to permit determination of credit assignment resulting therefrom.

SUMMARY OF THE INVENTION

[0008] The present invention has met the hereinbefore described need.

[0009] In a preferred method of the present invention, a server which supports a database is structured to receive, process and store investment data. For simplicity of disclosure herein, the term "server" will be employed to refer to and include a database and/or rules engine supported by the server regardless of whether the database or rules engine is physically a portion of the server or is operatively associated therewith through suitable interaction.

[0010] Rules engines are provided in order to facilitate determination of assignment from investment data including rules data. Investment data from a plurality of external services is introduced into the server through a suitable interface with user access preferably through the internet being permitted so as to respond to user queries and to deliver the information to a plurality of users in predetermined report form or any other desired logical form or other form. The user interface also permits a data steward to provide input to revise information which will be provided on the host server.

[0011] A corresponding computerized system is also provided.

[0012] It is an object of the present invention to provide a computerized method and associated system for receiving investment data from a plurality of external sources and receiving, processing and storing the same in a desired format.

[0013] It is another object of the present invention to provide such a method wherein investment data for making an accurate credit assignment resulting from investment transactions or asset valuations can be made rapidly and accurately.

[0014] It is another object of the present invention which facilitates application of appropriate rules so as to process investment transactions and make accurate credit assignments.

[0015] It is a further object of the present invention to provide such automated systems which facilitate simultaneous introduction of data from external nonuser sources into the system and simultaneous access to the system by a plurality of users as well as a data steward, while storing the investment data in the server in desired location and format to facilitate ready review and retrieval as well as credit assignments.

[0016] These and other objects of the invention will be more fully understood from the following description of the invention on reference to the illustrations appended hereto.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] FIG. 1 is a schematic illustration showing a form of system of the present invention structured to facilitate practice of the methods of the present invention.

[0018] FIG. 2 is an expanded schematic illustration of the system of the present invention which is suitable for use in practicing the method of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0019] As employed herein, the term "data object" means an interchangeable software logic component usable with other data objects in a data object interface to perform essentially the same function in different ways.

[0020] As employed herein, "data interface object" means a functional interface for conversion of external investment data of different formats into a common format with each data object interface including at least two data objects. The data object interface may be composed of a group of data object interfaces.

[0021] As employed herein, the term "investments" shall expressly include, but not be limited to, mutual funds, common and preferred shares of stocks, whether listed on an exchange or not, high-yield corporate bonds and high-grade corporate bonds, municipal bonds, United States Treasury bills, notes and bonds, mortgage-related investments and short-term securities such as commercial paper, bankers acceptances, re-purchase agreements and supporting currencies.

[0022] As employed herein, the term "investment data" means data dealing with investments or organizations or individuals who are involved in investments and shall expressly include, but not be limited to, those occupationally involved as well as their customers and clients and shall expressly include information relating to brokers, dealers, clients, main offices, branch offices, addresses, telephone

numbers, identify of individuals as well as titles and responsibilities and similar access and identifying information.

[0023] As employed herein, the term "credit assignment" means a determination of the individual or entity entitled to credit for a transaction or, entitled to total or partial credit for a transaction or holding involving investments with the determination being made for purposes including but not limited to financial, administrative, personnel, management, compensation, revenue sharing, or statistical purposes and shall expressly include, but not be limited to, assignment of credit for orders, Settled trades and investment holdings.

[0024] As employed herein "rules data" means data sufficient to permit determination of the credit assignment based at least in part on investment data.

[0025] As employed herein "rules engine" means rules receiving software that uses rules data received from external sources to determine credit assignment.

[0026] It will be appreciated that in making a credit assignment determination so as to make sure that accurate compensation, decisions and payments are made can involve a complex matrix of individuals, organizations and transactional evaluations. For example, one might from a business entity standpoint determine what individual firm, dealer, branch, satellite branch and representative would be entitled to participate in compensation for a transaction. Also, the state, zip code, specific mutual fund, social code, plan or account may enter into the determination, the particular line of business, sales region or territory, product distribution information, external wholesaler and internal wholesaler factors may also need to be considered.

[0027] The status of the transaction as to whether it is an order or a settled trade or if it relates to asset holdings may also be involved. Internal rules which govern such transactions must also be considered.

[0028] Referring to FIG. 1, a plurality of external sources 2, 4, 6 of investment data which in the form shown have been given #1, #2 through #N may be a plurality of sources of nonuser financial data provided to the system. A suitable interface 10 which is preferably a data interface object of the type disclosed in U.S. patent application Ser. No. 10/878, 763 entitled "A Computerized Method of Processing Investment. Data and Associated System", the disclosure of which is incorporated herein be reference, is preferably employed.

[0029] The investment data is introduced into database server 12 which is programmed to receive, process and store the investment information in desired format and location for suitable retrieval. In applying the standards for automated determination of credit assignments, the data which includes rules data is processed according by rules engine which may be in the form of a separate module or incorporated into the server. A data steward 40 and/or plurality of users 30, 32, 34 which have been identified as #1, #2 through #N may simultaneously access the server 12 through interface 36 and rules 18 to deliver an inquiry and to receive the desired information regarding credit assignment output of the rules engine which may be disposed within the server 12 in a predetermined report form or in another manner.

[0030] For example, the desired information in addition to or in lieu of a predetermined report form could be provided in html.xml, pdf tiles or in other desired form. A data steward 40 also may interact with the server 12 through interface 36 and rules 18 in order to supply rules data to rules engine and review server content and make revisions thereto. The rules 18 may be resident in the database of server 12 as will the

investment data which contains rules data which will be processed by the rules engine employing the rules data received in the investment data

[0031] An advantage of the present invention is that users may access the system through the internet or other means such as an internal network. subject to whatever desired security access restrictions are imposed.

[0032] In addition to the users 30, 32, 34 and steward, 40 accessing the server 12 through user interface 36, users 30, 32, 34 and data steward 40, other computer and external systems 42 may access the server 12 directly. Such access may be effected through the internet by other means such as internal network, for example, the users 30, 32, 34, data steward 40 and external system 42 may access the system through user interface 36, rules 18 or database server 12.

[0033] As shown in FIG. 1, access by external system 42 may be respectively through paths 44, 46, or 47.

[0034] Referring now to FIG. 2, an expanded schematic view of the method and associated system of the present invention will be considered. In this form for clarity of illustration, the server 12 has been shown as separated from database 48 other than being operatively associated therewith. It will be appreciated that the physical unit may be combined in one housing or be in separate housings which are functionally interconnected. For simplicity of disclosure herein, the server will be regarded as supporting the database and will collectively be referred to as the "server".

[0035] FIG. 2 shows the server 12 receiving external investment data 50 through the data interface object 52 which in turn outputs the investment data with or without processing to the database server 48 with the internal database receiving the data from data interface object 52 being identified by the reference number 60. Also shown in FIG. 2, the users 68 access the system through web-based user interface 70 in a bidirectional manner as does the data steward 72. The output of the user interface 70 is received in business logic and rules module 74 for making sure that the data has the form and content desired with the business logic and rules module 74 outputting the investment data to the database 48 for receipt in database module 60.

[0036] Also shown within the database 48 wherein the received investment data coming from the external nonuser sources 50, and the user 68 and data steward 72, communications are provided to and from database 60. Shown as being stored for retrieval within the database 60 are customer account information 80, customer investment holding information 82 and customer asset position information 84. Also shown as stored in the desired format and location for ready retrieval are credit assignment information 90, credit assignment rules information 92 and client information. Examples of the client information are the client organizational structure information 100, the external business entity structure information 102, client trading information 104, address, telephone and location information 106, settled trade information 108 and pending order information 110. Also shown are processing exception information 112 which may, for example, consist of new or updated external business entities, client trading information, investment product information added or updated in the database schema 60 by the data interface objects 52 and investment product information 114.

[0037] It will be appreciated that the present method and associated apparatus provide efficient, computerized processing of nonuser externally delivered investment data

which is received, processed and stored in an organized manner in a server with a plurality of external users being able through the internet to obtain access to the information and a data steward being able to review and revise the same. All of this facilitates employing the desired transaction and asset holding information with the complex credit assignment arrangements to permit rapid accurate determination and reporting of credit due.

[0038] Whereas particular embodiments of the invention have been described herein for purposes of illustration, it will be evident to those skilled in the art that numerous variations of the details may be made without departing from the invention as set forth in the appended claims.

1. A computerized method of processing investment data comprising providing a server supporting a database for receiving, processing and storing investment data,

provining rules relating to credit assignment,

introducing into said server investment data from a plurality of external sources, and

permitting user access to said processed and stored investment data resident in said server after application of said rules to said investment data.

2. The computerized method of processing investment data of claim 1 including effecting a credit assignment through said method.

3. The computerized method of processing investment data of claim 2 including providing nonuser financial data in said external source investment data.

4. The computerized method of processing investment data of claim 3 including providing said investment data from external sources to said server by data interface objects.

5. The computerized method of processing investment data of claim 4 including providing said investment data to said user through a user interface.

6. The computerized method of processing investment data of claim 5 including providing said processed investment data to said user in predetermined report form.

7. The computerized method of processing investment data of claim 6 including providing investment data from a plurality of said external sources to said data interface objects substantially simultaneously.

8. The computerized method of processing investment data of claim 5 including providing said investment data to said user in a form selected from the group consisting of html, xml and pdf files.

9. The computerized method of processing investment data of claim 7 including employing a rules engine for applying said rules to said investment data.

10. The computerized method of processing investment data of claim 9 including said investment data containing rules data which is processed by said rules engine.

11. The computerized method of processing investment data of claim 10 including periodically revising said rules.

12. The computerized method of processing investment data of claim 11 including effecting said rules revision by input from at least one of a said user and said data steward.

13. The computerized method of processing investment data of claim 9 including a data steward periodically revising said investment data.

14. The computerized method of processing investment data of claim 9 including a data steward periodically revising said rules.

15. The computerized method of processing investment data of claim 13 including effecting said revising in said database.

16. The computerized method of processing investment data of claim 14 including effecting said revising in said database.

17. The computerized method of processing of investment data of claim 1 including storing said rules in said database.

18. The computerized method of processing investment data of claim 1 including said users accessing said user interface through the internet.

19. The computerized method of processing investment data of claim 1 including storing in said server investment data relating to trade information.

20. The computerized method of processing investment data of claim 1 including storing in said server data regarding investment asset positions.

* * * * *