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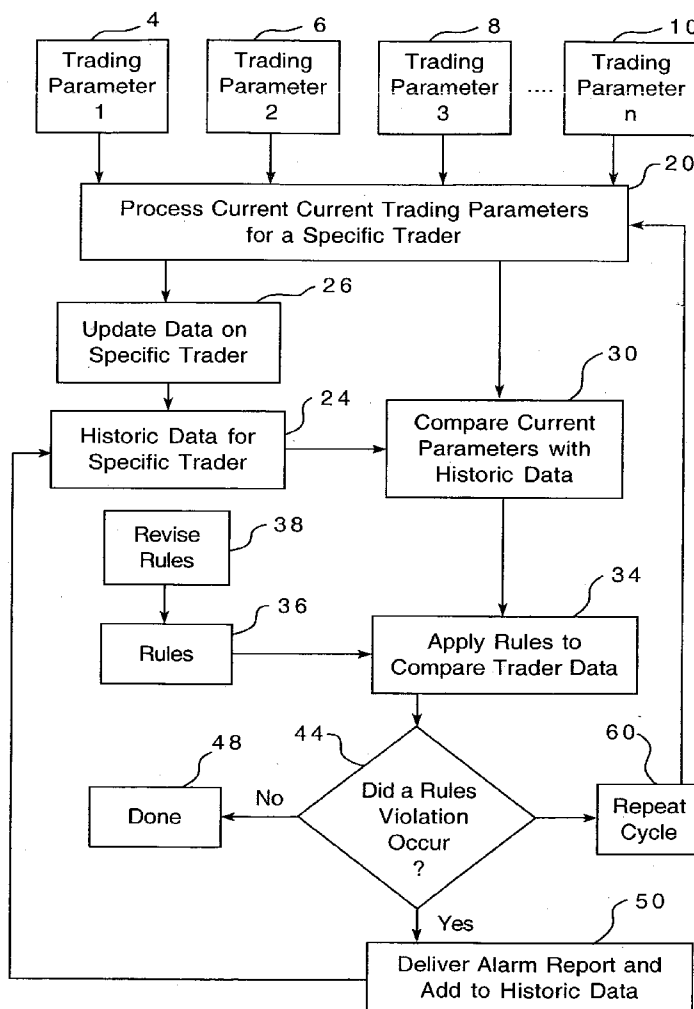
(19) **United States**(12) **Patent Application Publication**
Campbell(10) **Pub. No.: US 2012/0246058 A1**(43) **Pub. Date: Sep. 27, 2012**(54) **METHOD OF COMPUTERIZED
MONITORING OF INVESTMENT TRADING
AND ASSOCIATED SYSTEM****Publication Classification**(51) **Int. Cl.**
G06Q 40/04 (2012.01)(52) **U.S. Cl.** **705/37**(75) **Inventor:** **David H. Campbell**, Pittsburgh, PA
(US)(73) **Assignee:** **Access Data Corp.**, Pittsburgh, PA
(US)(21) **Appl. No.:** **13/491,822**(22) **Filed:** **Jun. 8, 2012**(57) **ABSTRACT**

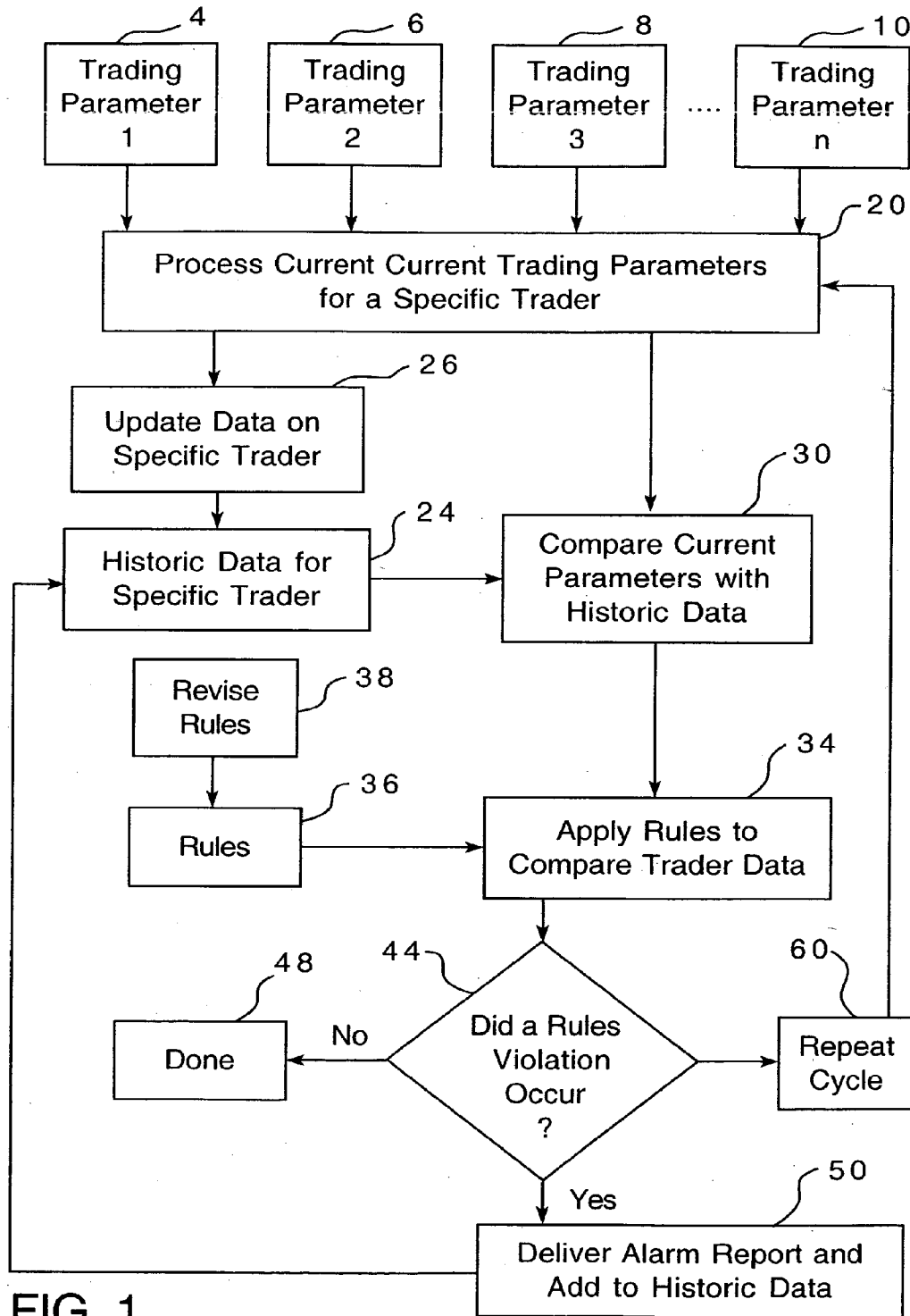
A method of computerized monitoring of investment trading includes providing historic trading data for a specific trader, selecting a plurality of trading parameters for the specific trader and obtaining current information regarding the selected parameters, and/or providing historic trading data and applying rules to the current information and/or historic trading data to determine if behavior of interest which may involve a rules violation, a departure from the rules which is not technically a violation or a potential departure from the rules which might make desirable further investigation has occurred. The system may be employed to monitor whether market timing of mutual fund investments has occurred. A corresponding computerized system is disclosed.

Related U.S. Application Data

(63) Continuation of application No. 10/861,261, filed on Jun. 4, 2004, now Pat. No. 8,200,567, which is a continuation-in-part of application No. 10/860,714, filed on Jun. 3, 2004, now Pat. No. 8,214,279.

(60) Provisional application No. 60/564,848, filed on Apr. 23, 2004.





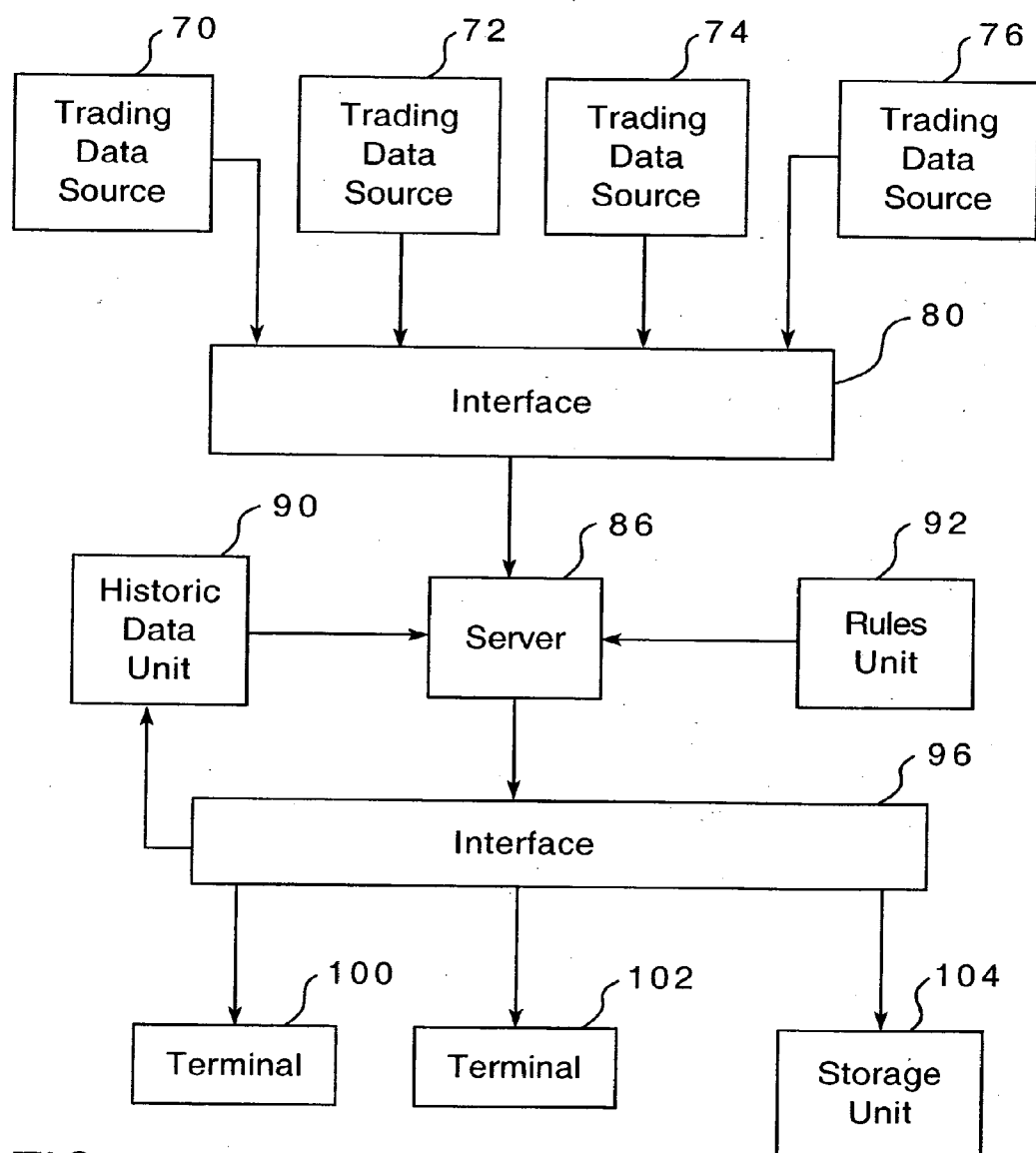


FIG. 2

METHOD OF COMPUTERIZED MONITORING OF INVESTMENT TRADING AND ASSOCIATED SYSTEM

CROSS-REFERENCE TO RELATED APPLICATION

[0001] The present application is a continuation in part of U.S. application Ser. No. _____ filed Jun. 3, 2004, entitled A METHOD OF COMPUTERIZED MONITORING OF INVESTMENT TRADING AND ASSOCIATED SYSTEM which in turn claims the benefit of U.S. Provisional Application Ser. No. 60/564,848 entitled "A METHOD OF COMPUTERIZED MONITORING OF INVESTMENT TRADING AND ASSOCIATED SYSTEM" filed Apr. 23, 2004.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates to a method and associated system for computerized monitoring of investment trading and more specifically it relates to a system which as to a specific trader and a specific investment obtains current information regarding selected trading parameters and compares it with historic trading data regarding the same and applies rules to determine if a departure from the rules has occurred.

[0004] 2. Description of the Prior Art

[0005] It has long been known to employ computerized systems to process data, store the same and provide for output and various formats as desired. It is also been known to use the same for investment purposes. See, for example, U.S. Pat. Nos. 5,749,077 and 5,893,079.

[0006] In recent years, the need for a system to provide more effective and timely monitoring of investment activities has become acute. More specifically, numerous instances of improper conduct have resulted from "market timing" in the trading of mutual funds. For example, individuals have been known to engage in frequent purchases of mutual funds in large quantities at an early phase of an upward movement of the market and sell the same after a brief elapsed period. The frequency of such transactions has reached the point in many instances of being burdensome to the mutual fund. The mutual fund may at times be forced to sell investment securities at a less than preferred time in order to reimburse such traders for their sizable redemptions. Also, the increased trading volume increases the mutual fund's transaction costs. This results in other investors being hurt as the market timing traders prevent the mutual fund from doing the most efficient job of maximizing the return for all investors. In addition, there have been instances of late trading involving transactions which were permitted to occur illegally after the market had closed, thereby permitting the individuals engaging in such trading to take advantage of late-breaking news in anticipation of the response by the market upon opening the next day.

[0007] There remains, therefore, a real and substantial need for an effective automated system which can monitor on a rapid and reliable basis improper or undesirable trading behavior.

SUMMARY OF THE INVENTION

[0008] The present invention has met the above described need. It provides a method by which computerized monitoring of investment trading may be accomplished in a rapid,

efficient and accurate manner by providing historic trading data for a specific trader, selecting a plurality of trading parameters for the specific trader and obtaining current information regarding those selected parameters followed by reviewing the current information and/or the historic trading data and then determining whether any of the rules employed in the method have been violated based upon the current information and historic trading data. In a preferred embodiment, the rules are applied to the current information and the historic trading data after comparison of the two categories of information. In the event of a departure from the rules, an appropriate alarm report is emitted.

[0009] The method and system may advantageously be employed in monitoring a specific trader with respect to a specific investment such as a mutual fund, for example, to determine whether improper market timing has occurred.

[0010] Various forms of trading parameters including pattern recognition are provided as a preferred means for monitoring such activity.

[0011] The computerized system of the present invention includes the data receiving interface for receiving trading data and organizing it according to the specific trader and specific investment. A server is structured to receive the organized trader- and investment-specific data from the receiving interface as well as providing an historical data unit to deliver data to the server. The server is structured to receive rules which govern permissible conduct and to compare the rules with the current information and historic data in making a determination as to whether a departure from acceptable trading conduct has occurred.

[0012] It is an object of the present invention to provide a computerized method and system for efficiently, accurately and promptly monitoring selected trading parameters in order to determine if a departure from the rules has occurred.

[0013] It is another object of the present invention to provide such a system which is structured to focus on a specific trader and within that specific trader's activities a specific investment and the trader's conduct with respect to the same over a period of time.

[0014] It is another object of the present invention to permit the rules to be revised by the user so as to alter the standards.

[0015] These and other objects of the invention will be more fully understood from the following description of the invention with reference to the drawings appended hereto.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] FIG. 1 is a flow diagram showing a form of method of the present invention.

[0017] FIG. 2 is a schematic diagram illustrating a form of computerized apparatus of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0018] As employed herein, the term "investments" shall expressly include, but not be limited to, mutual funds, common and preferred shares of stock, whether listed on an exchange or not, high-yield corporate bonds and high-grade corporate bonds, municipal bonds, United States bills, notes and bonds, mortgage-related investments and short-term securities such as commercial paper, banker's acceptances, repurchase agreements and supporting currencies.

[0019] As employed herein, the term "trading parameters" means one or more units of information relevant to invest-

ment trading in one or more investment products and shall expressly include, but not be limited to, transaction date, transaction time, price, product identity, trader identity, investment identity, trading volume and investment price history.

[0020] As employed herein, the term “historic trading data” means as to a specific trader, specific details regarding the trading record of that trader in respect of both sales and purchases including, but not limited to, the investment, the number and value of the specific investment, as to each trade the investment date and amount, with respect to sales, profit both before and after commissions and with respect to investments held, the return on investment before commissions, after commissions and annualized, patterns of trading, profitable trades, elapsed time between trades, number of market timing trades, trader trading history, dollar volume of market timing trades, percentage of market timing trades to all trades, trading patterns and selected critical days.

[0021] As employed herein, reference to “sub account” or “detail account” shall mean trader account information which may include one or more of the following: shareholder registration information, broker information, holding information and asset position information.

[0022] As employed herein, “omnibus account” refers to a large group of investors that are reported as a single account and an “omnibus trade” is a trade against an omnibus account.

[0023] As employed herein, a “detail trade” is a trade against a detail account.

[0024] As employed herein, the term “rules” means a group of standards with respect to which a plurality of events can be compared to determine if behavior of interest, as hereinafter defined, with respect to investments exists or may exist and shall expressly include, but not be limited to, standards relating to one or more of the following: (a) patterns of activity; (b) profiling; (c) pattern matching; (d) trading volume; (e) asset value changes; (f) investment statistics; (g) heuristics; (h) trading history; (i) legal requirements; (j) regulatory requirements; (k) trading parameters; (l) trader policies; (m) mutual fund policies; (n) statistical analysis; (o) neural networks; (p) expert systems and (q) artificial intelligence techniques.

[0025] As employed herein, the term “behavior of interest” means information or data which when compared with the rules results in the conclusion that a rules violation exists or may exist or a departure from the rules exists or may exist or a potential departure from the rules which should or might be investigated further exists. It will be appreciated that there may be departures from rules which are not of sufficient magnitude or of sufficient clarity to be deemed a rules “violation”. In that situation, the result may be a determination that a departure from the rules has occurred or that a potential departure from the rules which should or might be further investigated has occurred. It will also be appreciated that in some cases a “departure from the rules” merely indicates that a specific type of trading activity or behavior has or may have occurred.

[0026] This present invention allows the user to detect predefined types of activity such as market timing, but it also allows the user to define additional patterns or types of activity or behavior that are of interest to and specific to the user.

[0027] The present invention provides means for isolating a trader and specific investment. The term “trader” embraces not only an individual trader who is the holder of an account, but also a wide variety of others to be monitored in a similar

manner in respect of trading activity such as brokers, account representatives and account managers, for example.

[0028] The invention includes generating a database of historical trading data regarding the specific trader as well as obtaining current information on a plurality of trading parameters which can be compared with the historical data. The trading parameters are preferably selected to correspond to the rules employed. Automated application of rules is employed to determine if a departure from the rules, such as market timing activity, has occurred with appropriate communications being emitted when such departure from rules has been determined to exist.

[0029] A preferred form of the method of the invention is illustrated in the flow diagram of FIG. 1 wherein a plurality of data packets represented by trading parameters I-n, bearing, respectively, reference numbers 4, 6, 8, 10 are all processed 20 to provide current trading information regarding a specific trader. This information is not only delivered to the historic data for combination therewith 24 at 26, but also is subjected to a comparison between the current information and the historic trading data 30. This information is then subjected to application of the rules 34 in order to determine if a departure from the rules or other behavior of potential interest exists. The rules 36 which govern the method of evaluation or detection may be revised by the user or others permitted to do so 38 and then are provided in their current form for the comparison 34. The next block indicates the issue of whether a departure from the rules has occurred 44. If the answer is “no”, that is the end 48 of that cycle of the process. If the answer is “yes”, then an alarm report, which may be of any desired nature, content and Format, is delivered 50 and the existence of this departure is delivered to the historic data for the specific trader 24. This cycle is repeated 60 with a predetermined frequency as determined by the user.

[0030] While the preferred practice of the invention involves making a comparison of the current information with the historic trading data, in some instances one may avoid the comparison and employ solely the current information or historic trading data in applying the rules.

[0031] It would be appreciated that using the method and apparatus of the present invention, the rules are compared with current information or historical trading data or both to ascertain if behavior of interest as defined herein exists and, if so, analyzing whether a rules violation, a departure from the rules which may not technically be a violation or a potential departure from the rules which would require or make desirable further analysis has occurred. In some instances, there would be no clear violation of the rules or departure from the rules, but a rules evaluation indicating that it would be desirable to review the particular pattern or circumstances in order to determine if further monitoring or other action would be desirable.

[0032] The rules 36 may be modified and corresponding changes made in the trading parameters 4, 6, 8, 10 to facilitate efficient monitoring.

[0033] It will be appreciated that the historic trading data contains information regarding patterns of trading, times of trading, particular critical days and relationship to trading as well as the foregoing summarized information.

[0034] Some of the rules may relate to preferred practices of a user such as a mutual fund, brokerage, broker, dealer, government agencies, or others involved in the investment community, while others might relate to determination of improper conduct such as market timing.

[0035] Referring to FIG. 2, there is shown apparatus employable with the present invention. Sources of trading data 70, 72, 74, 76, which are structured to provide trading parameters with respect to a specific trader and specific investment, deliver data to the interface 80 which processes the current trading parameter data for the specific trader and delivers it to the server 86. Server 86 also receives historic trading data from historic data unit 90 and the rules form rules unit 92. The server 86 compares the current trading parameter data with the historic trading data which is then evaluated in respect of the rules with information being emitted through interface 96 to update the historic data unit 90 and to deliver information to the user as by terminals 100, 102 as well as providing a storage unit 104. If desired, storage can be within the server 86.

[0036] Also, apart from the reports which may have any desired format and content and which are emitted from the server 86 through interface 96, a user may access the information in a conventional manner.

[0037] Various forms of reports may be employed and the information may be provided in such a manner that multiple information units can be provided on a single terminal screen. Also, if desired, hard copy may be obtained by a conventional printer.

[0038] The server 86 may be structured to conduct statistical, probabilistic, heuristic, pattern-matching analysis of data in order to detect events of interest in respect of the trading activity of the selected trader with respect to one or more of his or her investments.

[0039] The system preferably has within the server 86 the capability of delivering results through at least one of the group consisting of html, xml, xbrl, spreadsheets and comma-separated files.

[0040] The invention may be structured to permit or prohibit an end user's viewing in a report or other format underlying detail trades or the omnibus trade.

[0041] While a primary focus herein in respect of monitoring for "market timing" has been on mutual fund transactions as this is currently a major problem, the invention is equally applicable with respect to numerous types of other "investments" as defined herein.

[0042] The method and system of the present invention can monitor sub accounts (detail accounts) and omnibus accounts including detection of market timing with respect to each.

[0043] It will be appreciated, therefore, that the present invention provides a method and associated apparatus for the efficient, rapid and accurate processing of current trading parameter or trading data in respect of a specific trader and a specific investment, automated comparison of the same with the corresponding historical trading data followed by an application of rules to the same to determine whether there has been a departure from the rules and responsive action may be initiated if such is found to exist.

[0044] Whereas particular embodiments of the invention have been disclosed 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 defined in the appended claims.

1. A method of computerized monitoring of investment trading comprising
 providing historic trading data for a specific trader,
 selecting a plurality of trading parameters for said specific trader and obtaining current information regarding said selected parameters, and

applying rules to said current information and/or historic trading data to determine if behavior of interest exists.

2. The method of claim 1, including
 prior to applying said rules, comparing said current information with said historic trading data.

3. The method of claim 1, including
 applying said rules employing both current information and said historic trader data.

4. The method of claim 1, including
 employing said process on a specific investment of said trader.

5. The method of claim 4, including
 employing said process on a said specific investment which is a mutual fund.

6. The method of claim 4, including
 repeating said process periodically for a said specific trader and specific investment.

7. The method of claim 6, including
 employing the trade date and time as said parameters.

8. The method of claim 4, including
 effecting said comparison employing historic trading data specific to said specific investment and said specific trader.

9. The method of claim 1, including
 employing said method to determine if market timing mutual fund transactions have occurred.

10. The method of claim 1, including
 if a departure from the rules has occurred, delivering an alarm report.

11. The method of claim 4, including
 employing said process to detect specific patterns of trading in mutual funds.

12. The method of claim 11, including
 monitoring said specific patterns in respect of higher- or lower-than-expected volumes of trading in said mutual fund by said specific investor.

13. The method of claim 1, including
 customizing said rules with respect to said specific investor.

14. The method of claim 4, including
 customizing said rules with respect to said specific investment.

15. The method of claim 10, including
 effecting said delivery by at least one method selected from the group consisting of html, xml, xbrl, spreadsheets and comma-separated variable files.

16. The method of claim 1, including
 selectively assigning and tracking trades for an omnibus account differently than trades for the underlying sub account.

17. The method of claim 1, including
 providing with said historical trading data sub account information.

18. The method of claim 1, including
 providing with said historical trading data omnibus information.

19. The method of claim 1, including
 coordinating selection of said trading parameters with the said rules employed.

20. The method of claim 19, including
 modifying said rules to monitor for specific trading conduct.

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