Title: FOR USER INTERFACE FOR A FINANCIAL TRADING SYSTEM

Abstract: A user interface is presented to facilitate the development of a detailed strategy that a financial system may employ to determine if market data satisfies criteria contained in a strategy. The user is prompted for information in such a manner that a detailed strategy associated with a trading item may be developed. The user interface may also be used to allow a user to define an action associated with the strategy. The user interface receives information from the user including which market news source type items to ignore, limit parameters used to limit the number of actions, and may provide the user with a preview chart depicting a simulation of how the user's strategy would be implemented using historical data. The user interface may use the user supplied information to create a rule to transmit to a financial system to be analyzed using market data.
FOR USER INTERFACE FOR A FINANCIAL TRADING SYSTEM

BACKGROUND OF THE INVENTION

Field of the Invention

This invention relates to electronic commerce and, more particularly, to a user interface that allows users to enter a financial strategy and actions into a computer system to be evaluated by a financial system, such as a financial trading system.

Description of the Related Art

The explosive use of Internet commerce allows businesses to better respond to customers' needs by allowing direct access to the business' computer systems for purchasing products and services. Customers, for example, are now using the Internet to order books, compact disks, and order stock trades by directly placing an order or reservation with a business' computer, completely bypassing human sales agent(s) or broker(s).

By using the Internet, and specifically the World Wide Web ("Web"), the ability of customers to interface with business computers is simplified. The architecture of the Web follows a conventional client-server model. The terms "client" and "server" are used to refer to a computer's general role as a requester of data (the client) or provider of data (the server). Under the Web environment, Web browsers reside in clients and specially-formatted "Web documents" reside on Internet (Web) servers. Web clients and Web servers communicate using a protocol called "HyperText Transfer Protocol" (HTTP).

In operation, a browser opens a connection to a server and initiates a request for a document. The server delivers the requested document, typically in the form coded in a standard "HyperText Markup Language" (HTML) format. After the document is delivered, the connection is typically closed, though this is not essential. The browser displays the document or performs a function designated by the document.
From the viewpoint of individual investors, the traditional method to place financial transactions is to call their broker, or other account representative, and instruct him or her in the details of the transaction they wish to take place. Alternatively, they may contact a computer system, e.g., via the Internet, which is connected to an account they control and instruct the computer system in the details of the specific transactions they wish to initiate. If the user is interacting with the broker and the user trusts the broker, it is sometimes possible to issue instructions about general strategy which the broker would subsequently attempt to implement based on his or her individual judgment.

On-line brokerage services do exist that users can access via the Internet and allow the user to place trading orders with the broker. With these systems, the user may monitor changes in the financial markets or these systems may actually send a message to the user based on a specific criterion given by the user, which is typically numeric based. For example, the user may request to be sent a message via email if a Stock A begins trading at $50.00 a share or higher. However, these automatic systems use only limited, single variable criteria for these messages, such as stock price, and they do not automatically perform or place a transaction order when the message is sent. In addition, these other brokerage services do not monitor other market news, such as specific financial manager's analyses or ratings on specific stocks, to provide feedback to the user or place an order based on this market news.

Large institutions provide automatic trading, however, they do not analyze market news that is in textual form nor do they analyze this market news for a multiple number of individual users placing orders each using multiple criteria, which may also be very dynamic (i.e., readily subject to change). Large institutions' automatic systems are typically programmed to provide specific feedback customized to a specific user and are generally not flexible nor dynamic, i.e., modifications to these systems typically require a programming specialist, and take a substantial amount of time and effort to modify.

However, there are no systems currently in the art that provide a user with an interface to capture a detailed user's strategy such that a system may use the information
received from the user, evaluate such information and initiate actions, defined by the user, based on the results of the evaluation of such information and current market data.

Therefore, what is needed in the art today is a user interface to retrieve information from a user that will capture a detailed user’s strategy and actions the user wishes to occur that coincide with the detailed strategy.

**SUMMARY OF THE INVENTION**

Methods, systems and articles of manufacture consistent with the present invention overcome the shortcomings of existing systems by providing a user interface to capture a detailed user’s strategy and actions the user wishes to occur that coincide with the detailed strategy for analysis by a financial system.

In accordance with one aspect of the present invention, as embodied and broadly described herein, in a financial trading system, a method for initiating an action, comprises the steps of receiving a first trading item from a user, receiving a strategy associated with the first trading item, including receiving a first one of a plurality of market news source types and a triggering event, receiving the action to be initiated based on the triggering event, analyzing the first one of the plurality of market news source types for the occurrence of a triggering event, and initiating the action when the triggering event occurs. The method may further comprise the steps of receiving an operation to be performed on information received from the first one of the plurality of market news source types and detecting the occurrence of the triggering event by performing the operation on the information received from the first one of the plurality of market news source types. The strategy may include a second one of the plurality of market news source types and the triggering event may be dependent on information received from the first one of the plurality of market news source types and information received from the second one of the plurality of market news source types. The strategy may also include a limit parameter, wherein the limit parameter indicates a threshold on a number of actions to be initiated when the triggering event occurs. The method may further comprise performing a back test, wherein the back test simulates the step of analyzing the first one of the plurality of market news source types for the occurrence of the triggering event using historical data. Furthermore, a schedule parameter may be
received indicating a time interval at which to analyze the first one of the plurality of market news source types for the occurrence of the triggering event. The method may also include receiving a second trading item from the user, wherein the strategy may be also associated with the second item, receiving a second one of a plurality of market news source types, wherein the triggering event may be dependent on the first trading item and the second trading item, and analyzing the second one of the plurality of market news source types for the occurrence of the triggering event.

In accordance with another aspect of the present invention, as embodied and broadly described herein, in a computer system having a graphical user interface including a display and a user interface selection device, a method for receiving and transmitting a strategy and an action for a financial trading system, comprises the steps of receiving a first trading item from a user, receiving the strategy information including receiving a first one of a plurality of market news source types and a triggering event, receiving the action associated with the triggering event, transmitting the first trading item to the financial trading system, transmitting the strategy to the financial trading system, wherein the financial trading system may be operative to analyze the first one of the plurality of market news source types for the triggering event, and transmitting the action to the financial trading system wherein the financial trading system may be operative to initiate the action associated with the triggering event in the strategy. The method may further comprise the steps of receiving a mathematical operation to be performed on information received from the first one of the plurality of market news source types, and transmitting the mathematical operation to the financial trading system. The method may also further comprise the steps of receiving a second one of the plurality of market news source types, wherein the triggering event may be dependent on information received from the first one of the plurality of market news source types and information received from the second one of the plurality of market news source types, and transmitting the second one of the plurality of market news source types to the financial trading system. In addition, the method may comprise the steps of receiving a limit parameter, and transmitting the limit parameter to the financial trading system, wherein the limit parameter may be used by the financial trading system to indicate a
threshold on a number of actions that can be initiated when the triggering event occurs. Furthermore the method may comprise the steps of receiving a schedule parameter, and transmitting the schedule parameter to the financial trading system, wherein the schedule may be received indicating a time interval at which to analyze the first one of the plurality of market news source types for the occurrence of the triggering event. The method may also comprise the steps of receiving a second trading item from the user, wherein the strategy may be also associated with the second trading item, receiving a second one of a plurality of market news source types, wherein the triggering event may be dependent on the first trading item and the second trading item, and transmitting the second trading item and the second one of a plurality of market news source types to the financial trading system. And the first one of a plurality of market news source types may be the same as the second one of a plurality of market news source types. The computer-executable instructions for performing the method may also be contain on a computer readable medium.

**BRIEF DESCRIPTION OF THE DRAWINGS**

The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate an exemplary implementation of the invention and, together with the description, serve to explain the advantages and principles of the invention. In the drawings,

FIG. 1 is a pictorial diagram of a computer network in which systems consistent with the present invention may be implemented;

FIG. 2 is a block diagram depicting a financial trading system's interaction with other external systems in an exemplary embodiment of the present invention;

FIG. 3 is block diagram depicting various components of a financial trading system in an exemplary embodiment of the present invention;

FIG. 4 is a flowchart showing steps used by a financial trading system to perform an action based on user criteria in an exemplary embodiment of the present invention;

FIG. 5 is a flowchart showing the steps performed by a program evaluation engine in an exemplary embodiment of the present invention;
FIG. 6 is a flowchart showing the steps performed by an external action engine in an exemplary embodiment of the present invention;

FIG. 7 is a flow chart depicting the steps used to receive a user's strategy and action to transmit to a financial trading system in a manner consistent with an exemplary embodiment of the present invention;

FIG. 8 is a flowchart depicting steps used by a user interface to receive a user's strategy in a manner consistent with an exemplary embodiment of the present invention;

FIG. 9 is a screen shot depicting user's options to use select a Wizard or Expert option to create a rule in a manner consistent with an exemplary embodiment of the present invention;

FIG. 10 depicts the BEGIN window associated with the user interface for a financial trading system in a manner consistent with an exemplary embodiment of the present invention;

FIGS. 11a-11d depict the process of developing a strategy using a user interface in manner consistent with an exemplary embodiment of the present invention;

FIGS. 12a-12b depict a user interface for entering an action in the event that the strategy is triggered in a manner consistent with an exemplary embodiment of the present invention;

FIG. 13a-13b depict the FINISH window in a user interface to receive finishing information from the user in a manner consistent with an exemplary embodiment of the present invention;

FIGS. 14a - Fig. 14f depict a user interface when the user selects to analyze various trading items using the technical analysis option in a manner consistent with an exemplary embodiment of the present invention; and

FIG. 15 depicts programming code representing a rule comprising a strategy and action used to transmit to a financial trading system consistent with an exemplary embodiment of the present invention.

DETAILED DESCRIPTION

Reference will now be made in detail to an implementation consistent with the present invention as illustrated in the accompanying drawings. Wherever possible, the
same reference numbers will be used throughout the drawings and the following
description to refer to the same or like parts.

Introduction

Systems and methods consistent with the present invention provide a user
interface to retrieve user information to generate a rule for a financial system, such as a
financial trading system. The user interface "interviews" the user by requesting
information based on previously received information so that a detailed strategy and
action may be received by the user interface to be analyzed by the financial system using
market data.

In more detail, a user interface is provided to receive trading item, strategy and
action information. A user is presented with multiple prompts, i.e., requests for
information, and entry fields for the user to enter data into the user interface. By
presenting these prompts and entry fields, the user interface interviews the user so that
the user will input a strategy, associated with a trading item, and action. Interviewing the
user allows a detailed strategy to be developed by the user interface, using the
information received from the user and transmitted to a financial system, to be evaluated
against the market data. When criteria contained in the strategy is satisfied, the financial
system may initiate the action, received from the user and sent to the financial system
from the user interface. The user interface component itself may be part of a financial
system or it may be a separate component and communicate with the financial system.

The process of interviewing the user to retrieve information so that a detailed
strategy may be developed and an action defined includes the reception of a trading item
the strategy is based on. In receiving the strategy, the user interface requests which
market news source type the user wishes to analyze. After receiving this information, the
user interface will present the user with prompts and entry fields specifically tailored to
the user's responses. Additional information requested by the user interface includes a
list of market news source type items that the financial trading system should ignore and
a limit parameter used to place a limit on the number of actions to be initiated for a
specific strategy. The user interface may also present simulation information to the user
using historical data stored in the financial system. The user interfaces receives the
information requested from the user and may generate a rule using this information to be stored in a user database in a financial system or may transmit this information directly to the financial system.

Network Architecture

Figure 1 illustrates a conceptual diagram of a computer network 100, such as the Internet. Computer network 100 comprises small computers (such as computers 102, 104, 106, 108, 110 and 112) and large computers (such as servers 120 and 122). In general, small computers are "personal computers" or workstations and are the sites at which a human user operates the computer to make requests for data from other computers or servers on the network. Usually, the requested data resides in large computers. In this scenario, small computers are clients and the large computers are servers.

In this specification, the terms "client" and "server" are used to refer to a computer's general role as a requester of data (client) or provider of data (server). In general, the size of a computer or the resources associated with it do not preclude the computer's ability to act as a client or a server. Further, each computer may request data in one transaction and provide data in another transaction, thus changing the computer's role from client to server, or vice versa.

A client, such as computer 102, may request a file from server A 120. Since computer 102 is directly connected to server A 120, for example, through a local area network, this request would not normally result in a transfer of data over what is shown as "network" of Figure 1. The "network" of Figure 1 represents, for example, the Internet, which is an interconnection of networks. A different request from computer 102 may be for a file that resides in server B 122. In this case, the data is transferred from server B 122 through the network to server A 120 and, finally, to computer 102. The distance between server A 120 and server B 122 may be very long, e.g. across continents, or very short, e.g., within the same city. Further, in traversing the network, the data may be transferred through several intermediate servers and many routing devices, such as bridges and routers.
Financial Trading System

Using such a network as described in Fig. 1, a financial trading system may reside as one or more nodes in the network. Figure 2 is a block diagram depicting the financial trading system's interaction with other external systems in an exemplary embodiment of the present invention. In one embodiment of the present invention, the financial trading system 215 interfaces with a user 200, a market news source 210, and a trading firm 205. It will be recognized by one skilled in the art that while only one user 200, one market news source 210, and one trading firm 205 is depicted in Figure 2, that the financial trading system can interface with multiple users, receive market news from multiple sources and interact with multiple trading firms, such as brokerage houses, clearing houses, and the like. The connections between the financial trading system and the external systems and users can be via the Internet, private network, or direct dial-in lines to the systems and users. For example, multiple users may be connected to the Internet to access the financial trading system 215. However, a private network may interconnect to the trading firm 205 to pass financial information between the financial trading system and the trading firm.

The user 200 provides criteria and actions to the financial trading system to process. The financial trading system 215 receives market information from the market news source 210 which the financial trading system analyzes to find market news related to the user's criteria. The market news source includes market information such as stock quotes, financial analyst reports and recommendations. The information passed to the financial trading system 215 from the market news source 210 may be in numerical format, such as in the case of stock quotes, as well as in textual format, such as in the case of financial analyst's reports and recommendations. The trading firms 205 that the financial trading system 215 interact with may include brokerage and clearing houses, such as brokers, market makers, NASDAQ small order execution systems, electronic commerce networks "ECNs," or the exchanges themselves.

Financial Trading System Architecture

Figure 3 is a block diagram depicting the various components of the financial trading system in an exemplary embodiment of the present invention. (Throughout the
specification, the words "internal" and "external" are used to describe various aspects of the financial trading system. The words "internal" and "external" are used for reference value only and in no way, in and of themselves, should be interpreted that the functions associated with the financial trading system or the various components contained therein are required to have an "internal" or "external" characteristics as related to the financial trading system.

The user interface 300 receives information from the user, such as specific criteria the user is entering as well as the actions the user wishes to perform when the criteria is satisfied. As stated above, the user may enter this information into the user interface 300 by way of the Internet, a direct dial-in, or any other means in which a computer or terminal can access the financial trading system. The criteria and action information entered into the user interface is then formatted and stored into a user database 305 as a rule. It is not required that the action actually be stored with the criteria as a rule, however it is preferable that the action be associated with the criteria in some manner.

There may be many rules associated with a specific user depending on how many actions the user wishes to perform. In addition, if there are multiple users, each of those users may also have multiple rules associated with them. Therefore, in implementation, the rules managed by financial trading system can be quite extensive, depending on the number of users and the number of actions requested by each of the users, and dynamic, depending how often the users change the rules.

The financial trading system also includes a data input component 320 where the market news information from the market news source, or multiple market news sources, is entered into the financial trading system. This market news is sent to the financial trading system in real near real time as, for example, the prices of stocks change or financial analysts change their analyses for any given stock (or other trading commodity). As the market news information comes in at real near real time, it is accepted into the data input component 320. The data input component 320 then stores this information into a market database 315. Because market news can be updated often and many sources may be used, the amount of market news information to be stored maybe very large. Therefore it is preferable that the market database be large enough to handle a
significant amount of data. The amount of data eventually stored could approach hundreds of gigabytes or even terabytes. It is also preferable that in addition to storing the data into the market database 315, that all of the relevant individually measurable aspects of the equity or other financial instrument (prices, trading volumes, etc), measured over time, are essentially stored in identically-formatted records and made amenable to random access.

The program evaluation engine 310 interfaces with the user database 305, the market database 315 and the external action engine 320. The program evaluation engine uses the information received from the market news via the market database 315 and compares this information with the criteria the user has entered via the user database 305. For example, a user may have entered a criteria to look at the market news and initiate a trigger when a fund manager changes his recommendation for a specific stock, "Stock A," to buy. The user may then define an action to buy 100 shares of "Stock A" when the criterion is satisfied. The program evaluation engine 310 will receive that criterion and action, stored as a rule in the user database 305. As the market news is sent into the financial trading system and stored into the market database 315, the program evaluation engine 310, in real near real time, evaluates the market news to determine whether that specific fund manager specified in the user's criteria announced a change for "Stock A" to a buy recommendation. The program evaluation engine 310 performs this function for multiple criteria listed in the rules in the user database 305 with the market news information being received by the data input component 320.

In the event that user criterion is satisfied, i.e., that the market news matches the criterion the user has entered, the rule containing the criterion and action is considered to have been triggered and the program evaluation engine 310 will respond to this trigger event to initiate the action specified in the rule. In some cases, an action may require that another rule be triggered. When the action associated with one rule triggers another, the program evaluation engine 310 interfaces back to the user database 305 to retrieve the other rule that has been triggered to initiate the action associated with other triggered rule.
In the event that the triggered rule requires some action other than the triggering of another rule as described above, then the program evaluation engine 310 sends the rule, with the action, to the external action engine 320. The external action engine 320 in the financial trading system is responsible for performing the action that is sent to it by the program evaluation engine 310. In one embodiment, the user can define many actions to occur when a rule is triggered. These actions include a fulfillment of an order, e.g., placing a trade order for a specific stock, a notification to the user that the rule has been triggered, or in some instances, it may even require an internal transaction trading. In each of these cases, the external action engine 320 interfaces with a fulfillment component 335, a notification component 330, and an internal transaction trading component 325, respectively, to perform the action. A fulfillment component 335 interfaces with various brokerages or clearing houses to place the order specified in the action. Note that in this process, the user has defined a criterion or criteria and action, and the system has automatically performed the action, e.g., placed an order, based on the user's defined criterion or criteria. The financial trading system is not solely providing an alert to the user.

In the event the action required is to notify the user, then the external action engine passes the action into the notification component 330 and then the user is notified by whatever means are defined in a user profile establish by the user and to the user interface 300.

It is also possible that internal trading may be performed. For example, one user may request to sell a stock when the price gets to $50.00 per share and another user may request to buy that same stock when it gets to $50.00 per share. In this case, the external brokerage houses are not required for the process and an internal trade may be performed between the two users within the financial trading system by transferring the stock from the first user to the second user.

**Financial Trading Process**

Figure 4 is a flow chart showing steps performed by a financial trading system to initiate actions based on user criteria in an exemplary embodiment of the present invention. First, input rules are generated that include a user's defined criteria and
actions (Step 400). Rules can be stored in a user database as described with Figure 3 or they may be maintained using other storage schemes as recognized by those skilled in the art. The criteria contained in each rule will be the bases for establishing triggers for those rules. A rule trigger is defined as those situations in which the criteria defined by the user, in the rule, are satisfied.

The system then receives market news information from various market news sources in near real time (Step 405). This market news information may be received from a data stream from various news sources into the financial trading system. It is preferable that this information be stored in a database for easy retrieval as well as for analysis, such as historical analysis or forecasting. The market news information received into the system may originate from multiple sources, such as from an exchange directly identifying various stocks or from market and financial news wires that provide updates and evaluations of various stocks.

The market news information is then evaluated against the rules that were generated in Step 400 (Step 410). It is preferable that this evaluation is done in real near real time. Here we define near real-time as not necessarily embodying any delays of more than a few minutes from initial availability of the information to the system. In ideal circumstances, the information becomes available to the system within seconds of its creation, though in some circumstances and for certain types of data this may not always be the case. If this information is "old," then the conditions of the market could change prior to when the action associated with the rule can be performed. Information is "old" when other entities may have had significant opportunity to trade or otherwise react to the information before it is received by the system or before it is available to the users of the system. For example, if assuming the user inputs a criterion to check when Stock A sells at $50.00 a share and an action to buy 100 shares of Stock A at $50.00 a share. If the system is evaluating the price of Stock A and it detects that it has dropped to $50.00 a share, the trigger will be initiated to perform an action defined by the user, namely the buy order. However, the $50.00 share price is the value of Stock A while the stock quote is "new," or received in real near real time. If it has not been received in real near real time then the value of the price could easily have changed before the system is
able to perform the action resulting in the action not being properly performed because
the data satisfying the criterion have changed. As in the above example when it was
received that Stock A was trading at $50.00 a share setting off a trigger, if this
information is old, there is a greater chance that Stock A’s price may change prior to
when the system attempts to perform the action of buying 100 shares.

The financial trading system then detects, after the evaluation of the market news
against the rules, whether a specific rule has been triggered (Step 415). The system
evaluates multiple rules to determine if any of the rules should be triggered. In addition,
these rules are dynamic in that they may change at any given time as users may elect to
either change, add or delete the criteria, the action or both associated with the rule. In the
event that no rules are triggered, the "No" branch is followed to Step 405 where the
system again continues to receive market news and then evaluates the market news
against the rules as described above. The sequential pieces of this illustration may be
performed in parallel by a multitasking computer, with each component acting on new
information available to it since the last iteration of its own execution.

However, if in Step 415 a rule is triggered, the "Yes" branch is followed to Step
420 where the action defined in the rule is then initiated. The actions defined in the
systems can be numerous and may include such things as placing a trade order with a
brokerage service, providing a notification to the user that at specific rule has been
triggered, or triggering another rule to perform another action defined in the system. In
addition, the action may also include performing an internal trade. Following the
initiation of the action as defined in the rule, the system then stores the event that the
action was initiated. This event may be stored in the user database, as described with
respect to Figure 3, or in whatever storage paradigm is used to implement the present
invention.

Program Evaluation Engine

Figure 5 is a flow chart showing the steps performed by a program evaluation
engine in an exemplary embodiment in the present invention. First, the program
evaluation engine receives the rules from the user database (Step 500). After receiving
the rules from the database, the program evaluation engine then retrieves the market
news information from the market database (Step 505). The user database and market
database can be established as described with respect Figure 3. Therefore, the rules can
be entered into a database via a user interface whenever the user enters a criterion or
criteria and action and the financial trading system then generating a rule and storing it in
the database. The market news information can be retrieved from the market database
where it can be stored via a data input component. The data input component may
receive market news information from one or multiple sources.

After receiving the market news information from the market database, the
program evaluation engine then determines if a rule is triggered (Step 510). If the rule is
not triggered then the "No" branch is followed and the process ends. In the event that a
rule is triggered, then the "Yes" branch is followed and the program evaluation engine
then determines whether the external action engine is required (Step 515). If the external
action engine is not required, then the program evaluation engine performs the action and
updates the user database indicating that the rule was triggered and that the action was
performed (Step 525). In the event that the external action engine is required, then the
program evaluation engine sends the rule, containing the action, to the external action
engine (Step 520). The user database is then updated to indicate that the rule was
triggered. Following Steps 525 and 520, the process of the program evaluation engine
then ends.

External Action Engine

Figure 6 is a flow chart showing the steps performed by an external action engine
in an exemplary embodiment of the present invention. The external action engine is
initiated by receiving a rule from the program evaluation engine (Step 600). After
receiving the rule, the external action engine then determines what action is required
from the rule (Step 605). The action required may be a compound action comprising
multiple subactions.

In the case where there is a fulfillment action in the rule, then the external action
engine then initiates the action by sending requests to a fulfillment component to perform
the action in the rule (Step 615). A fulfillment action is one requiring the purchase, sale
or some transaction of an item, such as stock. For example, a fulfillment action may be a
trading order to "buy 100 shares of Stock A at $50.00 a share." In this example, the fulfillment component may place the "buy" order with a brokerage house. The external action engine, via the fulfillment component, may interface with several trading firms in order to perform various fulfillment actions. In other words, the external action engine, via the fulfillment component, may interface with brokerage houses, clearing houses, the exchange directly, and various other systems that perform trading.

In the event that the action defined in the rule that was triggered is a notification action, then the external action engine sends a message to the user that the rule having the user's criteria has been triggered via the notification component (Step 620). In addition, the message may include a request for information from the user. Upon receiving this information, the system may initiate further actions.

In the event that the action defined in the rule that was triggered is an internal trade action then the external action engine will send this rule containing the action to an internal trade component to perform the internal trade (Step 630). The internal trade, as described above, is trading within the financial trading system, (e.g., User A defined to the financial trading system sells stock to User B in the financial trading system without using any external systems).

After having performed the action as required, the external action engine then receives verification that the action has been completed (Step 635). After receiving this verification, the external action engine then updates the user database to indicate that the action associated with the triggered rule has been performed (Step 640).

It will be recognized by one skilled in the art that while only three categories of actions associated with the external action engine (fulfillment, notification, and internal trade) have been described, many other categories performing various actions may be incorporated within the present invention's architecture and are considered within the scope of the present invention.

User Interface

A user may have a financial strategy they wish to implement in a financial trading system. A strategy may be, for example, an analysis of various market indicators as well as analysis of a financial manager's reports. A strategy includes criteria, such as
analyzing a financial manager's report recommending an upgrade for "Stock A". An action may be associated with the strategy so that when the criteria in the strategy is satisfied, the action is initiated. In the above example, the action may be to place a trade order for Stock A when the criteria, an upgrade recommendation, is satisfied. In one embodiment of the present invention, a user interface is provided that allows users to enter their strategy and actions. By using systems and methods consistent with the present invention, a user's trading strategy and actions can be entered and used by the financial trading system described above.

Fig. 7 is a flow chart depicting the steps used to receive a user's strategy and action information to transmit to a financial trading system. This method begins by first receiving a trading item (Step 700). This trading item may be entered by a user or may be transmitted to the user interface by an automated means, such as having received this data from another computer. The trading item preferably identifies the item that the strategy is based on. For example, if the user is wishing to track characteristics of Stock A and would like to develop a strategy based on certain characteristics of Stock A, the trading item would be the stock symbol for Stock A. However, any trading item may be used such as bonds, commodities or any items that may be traded.

After receiving the trading item, the present invention then receives strategy information associated with the trading item (Step 705). The strategy will comprise how the user would like to analyze the trading item. In the example mentioned above where the user is wishing to track Stock A, the strategy for tracking Stock A may include analyzing a financial manager's reports to determine when the financial manager recommends to buy Stock A.

Next, the present invention then receives an action to be initiated when the criteria contained in the strategy is satisfied. The criteria is entered by a user so when a certain event occurs satisfying the criteria, the user can initiate, or initiate via the financial trading system, some action, such as an alert message or a trade order. Using the user interface, the user enters the action desired to take place when the criteria is satisfied. For example, this action might be to place an order for 100 shares of Stock A at a given price per share.
The present invention creates a rule using the trading item, the strategy information and the action (Step 715) entered by the user. This rule may be used by the financial trading system to analyze various market news sources or other information in order to determine if the criteria in the strategy is satisfied. This user entered information is transmitted and may be stored as a rule in a user database (Step 720).

The present invention incorporates a user interface to create a rule using the received trading item, strategy and action information. This information, though, may be entered in a user interface considered part of a financial trading system, described above, or it may be used by another financial system. Furthermore, the information may be entered via a user interface not part of a financial trading system. The financial trading system may contain a user database and the user information obtained can be stored directly into the user database by the user interface or it may be transmitted to the financial trading system so the financial trading system can store this information in a user database.

Fig. 8 is a flowchart depicting steps used by a user interface to receive a user's strategy. The present invention first receives a market news source type related to the trading item that was received in Fig. 7 (Step 800). The market news source types are those methods by which a financial trading system may analyze market news sources to determine if criteria contained in the strategy is satisfied. For example, the market news source type may be reports submitted by financial analysts. Other examples of market news source types include 1) technical analysis, involving computations on market factors, such as stock prices; 2) company announcements, e.g., earnings announcements, upcoming dividends; and 3) third party news, where, for example, various news organizations text may be analyzed for key terms or the number of times a specific trading item is listed in the news.

Following the receiving of the market news source type into the user interface, the criteria is then received (Step 805). The criteria includes an event (i.e., a triggering event) that when satisfied will invoke the financial trading system to initiate an action. For example, as stated above, the criteria can be an analyst recommendation of an upgrade for Stock A from a hold to a buy.
The present invention then receives an "ignore" list from the user (Step 810). In one embodiment, the ignore list will be used by a financial trading system to ignore specific items within the market news source associated with the market news source type. For example, if the market news source type selected by the user was "Analyst Actions" and the user would like to have the system not consider a specific analyst's actions, e.g., Analyst A, then the user will input Analyst A into the ignore list. Consequently, when the financial trading system analyzes the market news source and detects an Analyst A recommendation that would normally satisfy the criteria, because Analyst A is listed in the ignore list, the criteria is not satisfied.

Next, the schedule is received into the user interface (Step 815). Schedules indicate to the system how often this market news source associated with the market news source type should be checked to determine if the criteria has been satisfied, i.e., if the triggering event has occurred.

After receiving this information, in one embodiment, the present invention will then present to the user a preview of the strategy that the user has selected. For example, the user interface may present a text summary or may present graphic charts showing for the trading items the user selected and the historical trend of that trading item.

In one embodiment of the present invention, a user interface is provided to translate information received by the user into a strategy for a financial trading system. Figs. 9-16 depict screen shots showing one embodiment of the present invention to receive this information from the user in order to generate a strategy and action to transmit to a financial trading system.

Fig. 9 is a screen shot depicting a user's option to select a Wizard or Expert option to create a rule in a manner consistent with an exemplary embodiment of the present invention. The user is presented with an option to use a Wizard 900 to create a program, i.e., a rule having a trading item, strategy and action, or the user may create a new rule by way of using an Expert 905 option. The Wizard option 900 will use an automated step by step process of "interviewing" the user to derive the information necessary to create a rule for the financial trading system. The Expert option 905 will present the user with the option to either import a rule that has previously been written or allows the user to create
a new rule using a programming language that the financial trading system will be able to implement.

Fig. 10 depicts the BEGIN window associated with the user interface for a financial trading system. In the BEGIN window, in one embodiment, the user is prompted to enter a name for the program, or rule, that the user is creating and that will be identified with this rule. The trading item 1005 will be that item which the financial trading system will analyze to determine if the criteria is satisfied, i.e., if a triggering event has occurred. For example, Fig. 10 depicts a trading item as "INTC" which is the stock symbol for Intel Corporation. However, it will be recognized by those skilled in the art that any trading item may be entered as long as it is recognized by the financial trading system, i.e., it is not required that this trading item be a stock symbol.

In addition to the name of the rule 1000 and the trading item name 1005, the user selects the market news source type desired to be analyzed 1010. In one embodiment, as is shown in Fig. 10, there are four types that the user may enter. These market news source types will prompt the financial trading system to analyze market news sources using methods associated with each specific type that may be selected in Fig. 10 for this rule. The user may select one or multiple market news source types.

Figs. 11a-11d depict the process of developing a strategy using a user interface in an exemplary embodiment of the present invention. After having selected the market news source type, the name of the rule and the trading item in Fig. 10, the user is then prompted to develop a strategy using the trading item 1005 and the market news source type 1010 selected. The user is presented first with a summary 1105 to remind the user the rule name and the trading item they selected. The user is also presented with specific, prompts, or entry fields that are related to the market news source types selected in Fig. 10. By using these prompts and entry fields, the system directs the user to develop a strategy for a trading item (or trading items). For example, in Fig. 10 the user selected "Analyst Action" for the market news source type. Because a user has selected this option, in Fig. 11a the user is presented with strategy options 1110 associated with that market news source type 1010. In one embodiment, the analyst actions include an
upgrade 1115, a downgrade 1120, earnings estimate revision-up 1125, earnings estimate revision-down (not shown), and coverage started (not shown).

When the user selects the upgrade option 1115, the user interface incorporates this into the rule for the financial trading system to watch for upgrade announcements by an analyst. Similarly, when the downgrade option 1120 is selected, the user interface incorporates this into the rule transmitted to the financial trading system to watch for when an analyst downgrades the trading item that was selected (in Fig. 10). The earnings estimate revision-up option (1125), when selected, will be used to indicate to the financial trading system to watch for when an analyst estimates, or forecasts, when the specific trading item revises the earning estimates up for that trading item. Similarly for the earning estimate revision-down (not shown), the financial trading system is notified to look for when the earnings estimates for the trading item is revised downward. Selecting a coverage started option (not shown) indicates to the financial trading system to look for when an analyst begins to cover a particular stock.

Fig. 11b depicts a window presented to the user in the user interface based on the selection made in Fig. 11a. When the user selected the "upgrade" option 1115 in Fig. 11a, the user interface then presents to the user an events section 1130 for the user to select what type of event to associate with that upgrade as well as presents an exceptions section 1135. The user interface has received the upgrade option selected in Fig. 11a and presented the relevant sub-options associated with the selected upgrade option. The events presented to the user include the potential upgrade decisions for analyst actions that are anticipated in the financial industry. As depicted, the upgrade options for the stock "INTC," which was the stock selected as the trading item with respect to Fig. 10, is depicted in an upgrade window 1132. Note these selections will effect a triggering event. For example, if the user selects all four options depicted "Strong Buy from Buy," "Buy from Hold," "Hold from Sell," "Sell from Strong Sell". The financial trading system will analyze and identify as triggered events when any of those four occurrences take place. The user may only select those occurrences however that are desired to implement the user's strategy. This upgrade window may present different options depending on the "Analyst Action" selected in window 1110. For example, if the user selected a
downgrade option in window 1110, those options relevant to a downgrade will be presented.

In addition the user is presented an "ignore" list window 1145 that the user may use to enter, in this case, specific analysts that the user wishes not to have the financial trading system implement this strategy for, i.e., to not cause a triggering event.

Fig. 11c indicates specific selections made by user in the user interface including checking two options in the events window 1150. Furthermore, the user has entered "Wee, Cheetham and Howe" in the ignore list 1152 indicating to the system to ignore reports from "Wee, Cheetham and Howe." The user is also presented with an option to select how often the financial trading system should run the rule containing this strategy.

In Fig. 11d, the user interface then presents the user with a preview chart indicating, in this case by vertical bars 1162, the times during some historical period when the described event occurred. The line 1164 moving horizontally across the chart represents the price of the equity during that historical period.

Figs. 12a-12b depict a user interface for entering an action in the event the strategy is triggered in a manner consistent with an exemplary embodiment of the present invention. After entering the strategy as depicted in Figs. 11a-11d, the user is then presented with, in one embodiment of the present invention, various options in order to enter an action for the financial trading system to initiate in the event that a rule comprising the strategy is triggered. In Fig. 12a, a summary block 1205 is presented to the user showing what options have been selected thus far. The user is then prompted to select the actions 1200 to initiate when the financial trading system detects a rule, comprising the strategy, that has been triggered. In one embodiment of the present invention, the actions include providing a "Simple Alert" 1202, a "Find Me" 1204, and a "Buy and Sell" option 1206.

The Simple Alert 1202 initiates a single notification to be sent to a user's primary contact that was developed earlier in a user profile. For example, this may be the user's e-mail address or phone number. The Find Me option 1204 sends an alert message to the user using a list of contacts in an attempt to alert the user, potentially at several destination addresses, that the rule has been triggered. The Buy and Sell option 1206
indicates to the financial trading system that a buy and/or sell is desired for a specific trading stock or other trading item. It should be noted that it is not required that the same trading item associated with the rule comprising the strategy that was triggered be the same as the trading item that is selected to either buy or sell.

If the Buy and Sell option 1206 is selected then the user further indicates for a buy option 1208 what trading item 1207 to buy and the number of shares of the trading item 1207 to buy. The user may also enter a limit price on this purchase. The limit price will prevent the financial trading system from purchasing the stock if its over a limit specified in the limit price field 1209 (this not to be confused with limits placed on a rule discussed below). Other options, when the buy option is selected, include getting permission from the user before performing the trade 1211. It is preferable to present this option to the user so that, when implemented, the user will have an extra level of confidence that the trade being performed is the one desired by the user.

Also under the Buy and Sell option 1206 is the sell option 1210 Fig. 12b. This presents the user with the option to enter various parameters associated with a sale of a trading item. For example, these actions include: 1) to sell after a price is increased; 2) after a price has decreased; and 3) after a certain amount of time has passed.

Also, in defining the actions, the limits option 1215 is also presented to the user. A limit option allows the user to define a limit on the program, or rule, that prevents a financial system from taking too many actions when the rule is triggered. For example, if the strategy contains a trigger event such as when an upgrade is announced from a hold to a buy for a specific stock, it is possible that many analysts will announce this upgrade at the same time. Therefore the system, when analyzing market news, may receive all these upgrade announcements and may attempt to initiate the action each time these upgrades are received. In order to place a limit on the number of actions, such as may be desired in the case just described, the limit option 1215 allows the user to define and place an upper bound on the number of actions to be initiated. These upper bounds may be specified in many ways, such as depicted in the limits window 1217. For example, it could be defined as limiting the maximum number of actions, the maximum dollar
amount lost, the maximum number of shares to trade, or the maximum of capital used, for this rule.

Fig. 13a-13b depict the FINISH window in a user interface to receive finishing information from the user in a manner consistent with an exemplary embodiment of the present invention. FINISH information includes performing a simulation or "back test" 1300 (See Fig. 13a and 13b). The financial trading system may be established in such a way that historical data is stored in a database accessible by the financial trading system. When this is the case, it is preferable that a user be given the option to run a simulation on that historical data to see how the rule, comprising the strategy and action having just been defined, would be implemented on this historical data. Historical trends are no guarantee for future performance, but it does provide the user with some indication as to how the rule, the user just defined, would respond to real data.

In the back test option 1300, the user is given the opportunity to select which period the user desires to run the simulation test. Also in the FINISH window is included a disposition option 1305 allowing the user the option of: 1) placing the rule that was just created into a lab, i.e., running the program in real time but not performing any of the actions that have been triggered by the strategy; 2) putting the rule in the private library to store it for potential future use; or 3) making the program active and having the actions be initiated by the financial trading system when the strategy has been triggered.

Following the reception of all this information, one embodiment of the present invention then transmits this information to the financial trading system or stores it into the user database for access by the financial trading system.

Figs. 14a - Fig. 14f depict a user interface when the user selects to analyze various trading items using the technical analysis option in a manner consistent with an exemplary embodiment of the present invention. To create the technical analysis strategy, the user interface receives the ticker symbol 1402 for each of the equities that are going to be analyzed, the analysis type 1404, 1406 associated with each of the ticker symbols 1402, and a price type 1408, 1410 associated with each of the ticker symbols 1402. The user interface also provides a summary window 1412, which provides to the user an update on information received by the user associated with this rule. Each of the
analysis types are not required to be the same for each ticker symbol 1402. In addition
different price types 1408, 1410 may be used for each ticker symbol 1402.

Fig. 14b indicates the user selecting a separate analysis type for the first indicator
ticker symbol 1402. The analysis types 1404 include price, moving average, bollinger
bands, volume, Relative Strength Index (RSI), Moving Average Convergence and
Divergence (MACD), On Balance Volume (OBV), Return On Capital (ROC) and
stochastics. Fig. 14c depicts the user selecting the moving average analysis type 1404
and being presented with an input field 1412 to indicate the type of moving average to
calculate, e.g., "ten minute." Each of the analysis types may request from the user
additional information, such as the moving average type 1412 above.

Following the user entering the information to determine the technical analysis to
perform, the user is provided an option to draw a chart. In one embodiment shown in
Fig. 14d, the chart 1420 depicts a graph showing the equity prices 1427 associated with
the ticker symbols 1402 and analysis types or indicators 1425, e.g., the moving average
in Fig. 14d. Circles 1422 contained in the chart indicate intersections between the
various prices and analysis type. Each circle 1422 represents a point at which some
possibly significant event has taken place with respect to the analysis. This may include
lines crossing each other or lines crossing other (fixed) significant points. For example,
for some indicators the point at which they cross 0 is significant.

Fig. 14e depicts a user interface when the user selects a moving average analysis type
for each of the ticker symbols 1402. Because each ticker symbol includes a moving average
analysis type, the chart 1435 includes two horizontal lines 1425 and 1430 each representing
the moving average for each of the analysis types 1404 and 1406.

Fig. 14f depicts a chart with a user selecting as a strategy one of the the events
associated with one of the circles. The chart 1445 gives an indication of the technical
analysis selected by the user. However a strategy still needs to be selected, which includes
a triggering event, for the rule. In one embodiment, the user can view the chart and select
one of the significant points, i.e., circles. By selecting the circle, the system generates the
strategy associated with that circle. For example, in the chart 1445 in Fig. 14f, the user has
selected (represented by enlarged circle 1415), the strategy associated with the circle 1440.
The strategy associated with the events that occurred at the selected circle 1440 is then presented in text form in the strategy section 1450.

Following the entering of the strategy, the user is then prompted to enter an action in the event the rule containing the strategy is triggered. To enter the actions, the user may follow the user interface steps as described with respect to Fig. 12a-12b. In addition, after defining the actions, the user may also perform a back test for the technical analysis option prior to making the rule active. In one embodiment, the process of entering the back test, or simulation, as well as the disposition is depicted and described with respect to Figs. 13a-13b.

Fig. 15 depicts programming code representing a rule comprising a strategy and action used to transmit to a financial trading system. This code may be presented to the user when the "Expert" 905 (Fig. 9) option is selected. The language used for this code is dependent on the financial trading system and the language in which the financial trading system expects to receive the code. The user is given the option of modifying an existing rule directly in the code or coding a new rule to transmit into the financial trading system. This option will be preferable for those who are more inclined to program code and are familiar with the language used to code the rule.

Conclusion

Systems and methods to develop a user interface to receive information from a user in a manner consistent with the present invention thus facilitates the development of a detailed strategy that a financial system may employ to determine if market data satisfies criteria contained in the strategy. By providing a user interface, the user is prompted for information in such a manner that a detailed strategy associated with a trading item may be developed. The user interface may also be used to allow a user to define an action. The user interface receives information from the user including which market news source type items to ignore, limit parameters used to limit the number of actions, and may provide the user with a preview chart depicting how the user's strategy would be implemented using historical data. The user interface may use the user supplied information to create a rule to transmit to a financial system to be analyzed using market data.
The foregoing description of an implementation of the invention has been presented for purposes of illustration and description. It is not exhaustive and does not limit the invention to the precise form disclosed. Modifications and variations are possible in light of the above teachings or may be acquired from practicing of the invention. For example, the described implementation includes the trading of stocks or commodities, but the present invention will also apply to the trading of any item including, but not limited to, bonds, currencies, commodities, derivatives, collectibles, or other items where the purchase or selling of the item is at least partially based on definable criteria.

In addition, the described implementation includes software but the present invention may be implemented as a combination of hardware and software or in hardware alone. The invention may be implemented with both object-oriented and non-object-oriented programming systems. Additionally, although aspects of the present invention are described as being stored in memory, one skilled in the art will appreciate that these aspects can also be stored on other types of computer-readable media, such as secondary storage devices, like hard disks, floppy disks, or CD-ROM; a carrier wave from the Internet or other propagation medium; or other forms of RAM or ROM. The scope of the invention is defined by the claims and their equivalents.
WHAT IS CLAIMED IS:

1. In a financial trading system, a method for initiating an action, comprising the steps of:
   receiving a first trading item from a user;
   receiving a strategy associated with the first trading item, including receiving a first one of a plurality of market news source types and a triggering event;
   receiving the action to be initiated based on the triggering event;
   analyzing the first one of the plurality of market news source types for the occurrence of a triggering event; and
   initiating the action when the triggering event occurs.

2. The method of claim 1 further comprising the steps of:
   receiving an operation to be performed on information received from the first one of the plurality of market news source types; and
   detecting the occurrence of the triggering event by performing the operation on the information received from the first one of the plurality of market news source types.

3. The method of claim 1, wherein the strategy includes a second one of the plurality of market news source types and the triggering event is dependent on information received from the first one of the plurality of market news source types and information received from the second one of the plurality of market news source types.

4. The method of claim 1, wherein the strategy includes receiving a limit parameter, wherein the limit parameter indicates a threshold on a number of actions to be initiated when the triggering event occurs.

5. The method of claim 1 further comprising the step of performing a back test, wherein the back test simulates the step of analyzing the first one of the plurality of market news source types for the occurrence of the triggering event using historical data.

6. The method of claim 1, wherein a schedule parameter is received indicating a time interval at which to analyze the first one of the plurality of market news source types for the occurrence of the triggering event.
7. The method of claim 1 further comprising the steps of:

receiving a second trading item from the user, wherein the strategy is also associated with the second item;

receiving a second one of a plurality of market news source types, wherein the triggering event is dependent on the first trading item and the second trading item; and

analyzing the second one of the plurality of market news source types for the occurrence of the triggering event.

8. The method of claim 7, wherein the first one of a plurality of market news source types is the same as the second one of a plurality of market news source types.

9. A computer readable medium having stored computer-executable instructions for performing the steps recited in claim 1.

10. In a computer system having a graphical user interface including a display and a user interface selection device, a method for receiving and transmitting a strategy and an action for a financial trading system, comprising the steps of:

receiving a first trading item from a user;

receiving the strategy information including receiving a first one of a plurality of market news source types and a triggering event;

receiving the action associated with the triggering event;

transmitting the first trading item to the financial trading system;

transmitting the strategy to the financial trading system, wherein the financial trading system is operative to analyze the first one of the plurality of market news source types for the triggering event; and

transmitting the action to the financial trading system wherein the financial trading system is operative to initiate the action associated with the triggering event in the strategy;

11. The method of claim 10 further comprising the steps of:

receiving a mathematical operation to be performed on information received from the first one of the plurality of market news source types; and

transmitting the mathematical operation to the financial trading system.
12. The method of claim 10 further comprising the steps of:
   receiving a second one of the plurality of market news source types, wherein the
   triggering event is dependent on information received from the first one of the plurality of
   market news source types and information received from the second one of the plurality of
   market news source types; and
   transmitting the second one of the plurality of market news source types to the
   financial trading system.

13. The method of claim 10 further comprising the steps of:
   receiving a limit parameter; and
   transmitting the limit parameter to the financial trading system, wherein the limit
   parameter is used by the financial trading system to indicate a threshold on a number of
   actions that can be initiated when the triggering event occurs.

14. The method of claim 10 further comprising the steps of:
   receiving a schedule parameter; and
   transmitting the schedule parameter to the financial trading system, wherein the
   schedule is received indicating a time interval at which to analyze the first one of the
   plurality of market news source types for the occurrence of the triggering event.

15. The method of claim 10 further comprising the steps of:
   receiving a second trading item from the user, wherein the strategy is also associated
   with the second trading item;
   receiving a second one of a plurality of market news source types, wherein the
   triggering event is dependent on the first trading item and the second trading item; and
   transmitting the second trading item and the second one of a plurality of market news
   source types to the financial trading system.

16. The method of claim 15, wherein the first one of a plurality of market news
   source types is the same as the second one of a plurality of market news source types.

17. A computer readable medium having stored computer-executable instructions
    for performing the steps recited in claim 10.

18. In a computer having a graphical user interface, a method for receiving a
    strategy for a financial trading system, comprising the steps of:
means for receiving a first trading item from a user;
means for receiving a strategy associated with the first trading item, including a
means for receiving a first one of a plurality of market news source types and a triggering
event; and

means for receiving the action to be initiated based on the triggering event;

19. The method of claim 18 further comprising the steps of:
means for receiving a mathematical operation to be performed on information
received from the first one of the plurality of market news source types.

20. The method of claim 1 further comprising the step of a means for receiving
a second one of the plurality of market news source types, wherein the triggering event is
dependent on information received from the first one of the plurality of market news source
types and information received from the second one of the plurality of market news source
types.

21. The method of claim 18 further comprising the step of a means for receiving
a limit parameter, wherein the limit parameter indicates a threshold on a number of actions
to be initiated when the triggering event occurs.

22. The method of claim 18 further comprising the step of a means for receiving
a schedule parameter indicating a time interval at which to analyze the first one of the
plurality of market news source types for the occurrence of the triggering event.
FIG. 2
Generate input rules comprising user criteria and an action

Receive market news information in real time

Evaluate market news information against rules

Rule triggered?

Yes

Initiate action defined in rule

Store event that an action was initiated

No
Retrieve rules from user database

Retrieve market news information from the market database

Rule triggered?

Yes

External Action Engine Required?

Yes

Send action to External Action Engine

No

Perform action and update user database

End

FIG. 5
Retrieve rule from program evaluation engine

Determine the action required

Fulfillment

Send trading order request

Notification

Notify user

Internal Trade

Send message to internal transaction component

Receive notification from component

Update user database indicating action was performed

FIG. 6
Message Generator 705 → Notification/Alert System 700 → External Communications Media 710 → User/Computer System 715

FIG. 7
Create a New Program

(Wizard)

(905)

(QUIT)

Expert

Import programs, or write your own using the TradeTalk macro language
Create a New Program

Program Name: buy 100 units on upgrade

Companies:

Strategies:

Analyst Actions:

FIG. 11a
FIG. 11b
FIG. 11d
FIG. 12a
BackTest: 1
Choose a period:
Period:
Weekly
Weekly
Monthly
Quarterly
Yearly

Actions:
- Buy 10 shares at $10 in market, order good until end of day.
- Limit order to sell when 10 minutes have passed, or 15% profit has been made, or 15% loss has been incurred.

Limits:
- Prevent further Action by this Program when it has:
  - Made a loss/kg
  - Accumulated 15 shares, or
  - used $100000 up:
  - lost $500

FIG. 13b
FIG. 14b
FIG. 14c
FIG. 14d
FIG. 14e
FIG. 14f
FIG. 15