Method and system for using intelligent agents for financial transactions, services, accounting, and advice US 5920848 A

ABSTRACT

The present invention relates to the use of computerized intelligent agents to facilitate the integration of networked performance of financial transactions with computerized methods of financial accounting. Incorporated into this combined financial transaction/financial accounting system are intelligent agents that automatically analyze the system information to provide users with financial advice. This invention permits the automated performance on-line of a wide variety of financial transactions and integrates these transactions with computerized financial accounting. All of this information is collated and analyzed automatically by intelligent agents, which generate user-specific financial reports, profiles, and advice, and under appropriate conditions take action.

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DESCRIPTION

This application claims benefit of provisional application Ser. No. 60/037,069 filed Feb. 12, 1997.

FIELD OF THE INVENTION

The present invention generally relates to the field of computerized intelligent agents, and more particularly to the integration of on-line performance of financial transactions across multiple accounts with computerized methods of financial functions, in a system and method for intelligent agents to collate and analyze information to generate user-specific reports, profiles, and advice and to take appropriate action.

BACKGROUND OF THE INVENTION

Increasingly the public is going on-line for a variety of transactions and information. More than 30% of the population have personal computers and modems. Furthermore, over 60% of people with bank accounts have personal computers and modems. At the same time the number of people subscribing and using on-line services is greater than 40 million, and this number is growing at an exponential rate.

As the public uses computers with a greater frequency, more financial transactions are being automated and performed via computer. There is good motivation to bank on-line. On-line banking provides convenience, safety, cost savings, and potentially new types of services not readily or conveniently available via in-person banking. Such potentially new services include access to superior up-to-the minute information, on-line investment clubs, information filters, and search agents.

With the increase in the number of financial transactions performed on-line, the convenience and cost-savings of banking on-line also increases. Additionally

CLAIMS (73)

What is claimed is:

1. A method for a user to perform financial transactions and financial accounting, comprising the steps of:

said user initiating a local client application on a terminal;

said local client application initiating communication with a server;

said user accessing a user account on said server;

said user selecting a financial transaction;

said user inputting information relating to said selected financial transaction;

said server performing said financial transaction;

said server automatically downloading information relating to said performed financial transaction to said local client application;

said user initiating transfer of said downloaded information relating to said performed financial transaction from said local client application to a financial software application;

said local client application transferring said downloaded information relating to said performed financial transaction to said financial software application;

automatically performing financial functions using said downloaded information relating to said performed financial transaction to produce output information;

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of financial transactions performed on-line. The result is that convenience, cost savings and enhanced security have combined to make on-line financial services more useful and effective, thereby driving the development of newer and more integrated services. More sophisticated financial systems that offer greater integration and a high degree of user control enable on-line users to synthesize, monitor, and analyze a wide array of financial transactions and personal financial data.

Currently, methods exist for users to perform a variety of on-line financial transactions, but these methods do not offer integrated personal financial accounting. For example, users may bank on-line, thereby enabling performance of transactions, such as transfers from one account to another. Additionally users may perform transactions on-line, such as stock or mutual fund purchases. In these approaches, users are able to perform certain basic financial transactions

Additionally, methods exist for users to perform computerized personal financial accounting via a variety of personal financial software applications. These methods do not offer the user the ability to integrate on-line performance of financial transactions. For example, these software applications help users to categorize and keep track of financial expenses, tax information, or financial transactions. Generally these software applications require that users enter this financial information after such information has been recorded and collected by the user in a checkbook, accounting book, or another software application or to receive downloads. This includes downloads from different institutions with differing conventions, categories and level of detail.

Therefore, there is no existing system that effectively integrates performance of financial transactions with financial accounting. As a result, the automated performance of financial transactions is separate and distinct from any computerized method of accounting. Thus, a user can bank on-line, but cannot easily take that transaction information and readily transfer it into a computer application for financial accounting. This makes it more difficult for users to reconcile bank statements efficiently or to quickly obtain a complete picture of their personal finances, such as monthly expenses and average monthly bank account balances.

Further, existing art methods for financial transaction performance on-line do not combine the features of tracing and monitoring transactions with an integrated financial accounting software application. Without this integration, the user cannot readily and seamlessly combine on-line banking with personal financial accounting.

Without an easy and quick way to collate financial information, consumers must rely completely on others for financial advice, or they must accept the inability to easily obtain a thorough understanding of their own financial situation. These difficulties make consumer choices about their financial future more inefficient and less informed. Therefore, a need exists for users to have a quick and efficient way to integrate all of their financial information and for such information to be distilled and analyzed efficiently and thoroughly.

A useful method of assisting the integration and analysis of information, such as financial information, is by incorporating intelligent agents into an information system. An intelligent agent is a computer program that can perform a variety of tasks for a computer user. Typically a computer user will instruct an intelligent agent to assist the user by automatically performing a function and reporting the results of that performed function and/or take an action. Intelligent agents have been used for such things as negotiating transactions on behalf of users, reducing information overload for computer users, and handling and prioritizing electronic mail on behalf of users. In each case, intelligent agents have been employed to automatically perform tasks for users that would otherwise require the users' constant and immediate attention. The result is that intelligent agents enable users to utilize time more efficiently and to obtain results and analysis quickly and without the users' constant attention to the task being performed by the intelligent agent.

One current approach of utilizing intelligent agents in an information system is to place agents in the role of finalizing, verifying, or closing a transaction. This

to said local client application; and

uploading said output information from said local software, application to said user account on said server.

- 2. The method of claim 1 wherein said local software application comprises an intelligent agent.
- 3. The method of claim 1 wherein said local software application comprises an applet.
- 4. The method of claim 1 further comprising the steps of:
 - an intelligent agent analyzing said downloaded and output information to produce an analysis report; and
 - said intelligent agent transmitting said analysis report to said user.
- 5. The method of claim 4 wherein said step of analyzing said downloaded an output information comprises the steps of:
 - automatically monitoring said financial transaction;

to said financial transaction.

- automatically tracing progress of said financial transaction; and automatically updating files stored by said intelligent agent relating
- 6. The method of claim 1 further comprising the steps of: said user selecting an action relating to financial transactions; and said user associating said action with a data file.
- 7. The method of claim 6 wherein said action comprises a warning message.
- 8. The method of claim 6 wherein said action comprises a reminder message.
- 9. The method of claim 6 wherein said action comprises a bill payment.
- 10. The method of claim 9 wherein said bill payment is recurring.
- 11. The method of claim 6 wherein said action comprises a funds transfer.
- 12. The method of claim 6 wherein said associating step comprises selecting a date.
- 13. The method of claim 6 wherein said associating step comprises a beginning date.
- 14. The method of claim 6 wherein said associating step comprises an end date.
- 15. The method of claim 6 wherein said associating step comprises a payee account.
- 16. The method of claim 6 wherein said associating step comprises a transferee account.
- 17. The method of claim 6 wherein said associating step comprises a condition for a payment.
- 18. The method of claim 1 further comprising the steps of:
 - said user selecting an option to import said financial software application; and
 - said local client application importing said financial software application into said local client application.
- 19. The method of claim 18 further comprising the step of said user initializing data requirements of said local client application for said financial software application.

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Another approach of using intelligent agents in an information system is to incorporate agents in a telephone or communications network. This method of using agents focuses on the agents that can route telephone calls or send messages through a communication system.

An example of the existing technology is Rosen, Trusted Agents for Open Electronic Commerce, U.S. Pat. No. 5,557,518. This system utilizes agents to participate in an electronic dialogue and agree on terms of payment for a product or a service or to verify a form of identification. In this system, agents are embedded in a transaction device that reviews electronic information presented by a customer for the purpose of accepting a payment or for verifying electronic identification presented by a user.

Another example of existing art is Motiwalla, An Intelligent Agent for Prioritizing E-Mail Messages (IN Inf. Resour. Manage. J., Vol. 8, no. 2, pp. 16-24, Spring 1995). This system uses an intelligent agent to follow a user's preferences and organizational considerations in presenting and prioritizing electronic mail to users.

An example of existing patented art is Andrews, et al., Communications System Using A Central Controller to Control At Least One Network and Agent System, U.S. Pat. No. 5,546,452. In this system, intelligent agents are used to interface with a network and deliver status messages to permit transmission and routing of communications signals.

None of the prior art methods utilize intelligent agents within an information system for the purpose of integrating and analyzing details of financial transactions and financial accounting across institutions, and taking appropriate actions, where the agent relieves the user of much of the routing details and learns and adapts.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide an integrated financial transaction and financial accounting system with incorporated intelligent agents to meet the important financial needs of synthesizing, parsing, and analyzing a user's complete financial picture. It is a further object of the present invention to take a new approach to automated finances by combining automated performance on-line for a wide variety of financial transactions with automated monitoring and tracing of financial transactions, as well as automated classification and tracking of financial expenses and under certain prespecified conditions taking action.

It is a further object of the present invention to provide the user with interfaces to a variety of new intelligent agents and machine learning technologies to monitor information, collect information, and generate user-specific advice or reports.

It is a further object of the present invention to utilize machine learning technologies to enable intelligent agents to analyze collated information and to generate proactive reports or alarms.

It is a further object of the present invention to use intelligent agents and machine learning technologies to combine information from financial transactions, financial expense categorization, and financial accounting across different accounts to generate financial reports and summaries and to create user-specific financial profiles.

It is a further object of the present invention to enable a user to perform, collect, and maintain financial transactions across a network, such as the internet, and across other on-line services and for multiple financial institutions. It is a further object of the present invention to give a user the capability to monitor, maintain, and pay bills across an information system and across a network. It is a further object of the present invention to include a method for agents to learn, and for users to maintain and modify rule-based payment instructions.

It is a further object of the present invention to provide a system that acts as a reservoir or deposit for all financial information.

It is a further object of the present invention to act as a financial warning

selected financial transaction comprises personal information.

- 21. The method of claim 1 wherein said information relating to said selected financial transaction comprises personal financial information.
- 22. The method of claim 1 wherein said information relating to said selected financial transaction comprises business information.
- 23. The method of claim 1 wherein said information relating to said selected financial transaction comprises banking information.
- 24. The method of claim 1 further including the steps of:

said user entering personal identification information into said local client application;

said local client application transmitting said personal identification information to said server; and

said server verifying said personal identification information.

- 25. The method of claim 1 wherein said terminal comprises a personal computer.
- 26. The method of claim 1 wherein said terminal comprises a server.
- 27. The method of claim 1 wherein said terminal comprises a main frame computer.
- 28. The method of claim 1 wherein said server comprises a personal computer.
- 29. The method of claim 1 wherein said server comprises a main frame computer.
- 30. The method of claim 1 wherein said financial transaction comprises paying a bill.
- 31. The method of claim 1 wherein said financial transaction comprises transferring funds.
- 32. The method of claim 1 wherein said financial transaction comprises tracing a check.
- 33. The method of claim 1 wherein said financial transaction comprises tracing automatic teller machine activity.
- 34. The method of claim 1 further comprising the steps of:
 - a learning agent monitoring said uploaded output information;
 - said learning agent identifying trends in said uploaded output information; and

said learning agent transmitting said identified trends to said user account

35. A system for transacting, monitoring, and tracing financial transactions, comprising:

a customer terminal;

a local software application running on the customer terminal for financial transaction performance, monitoring; and tracing;

a server;

a communications device coupling the local software application and the server; and

an intelligent agent employed to interact with the server and the local software application:

wherein the local software application initiates communication with the server; wherein a selection of a financial transaction is received from the user; wherein the server performs the financial transaction

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The present invention comprises a system which includes: (1) integration of automated financial transaction performance and automated financial accounting or automated financial functions; (2) accessibility of rapidly generated personal financial reports based upon up-to-the minute financial informal ion; (3) timely advice provided by a financial system integrating financial transaction and personal financial accounting functions; and (4) proactive financial alarms and alerts provided by a financial system integrating up-to-the minute financial transaction and personal financial accounting information

An important aspect of the system allows a computer user to perform a wide variety of financial transactions on a network, such as the internet, and to monitor and trace these financial transactions. This system also enables a user to classify financial transactions and to categorize and track financial expenses. New intelligent agents and machine learning technologies provide the present invention with the capacity to combine information from financial transact ions and financial expense categorization and accounting so that financial reports and summaries are generated, user-specific financial profiles are created, and user-specific proactive financial alerts and alarms are displayed. Additionally, users are able to generate and direct execution of a series of bill payment or financial investment instructions via this new system.

This information system provides users with the capability to perform a wide variety of financial transactions on-line, including bill payment and stock purchases. Moreover, users combine this on-line performance of financial transactions with the tracing and monitoring of these financial transactions. Users also integrate their personal financial accounting with the financial transaction performance, monitoring, and tracing information provided by the system. Incorporated in the present invention are user interfaces with a plurality of intelligent agents, which are software applications that monitor, collect data, and generate user-specific advice, reports, or alerts. The present invention also provides that intelligent agents trace and monitor financial transactions and financial expenses.

To achieve the stated and other objects of the present invention, as embodied and described below, the present invention includes the steps of initiating a local client application on a terminal, establishing communication with a server, selecting a financial transaction, inputting information relating to the selected financial transactions, the server automatically performing the financial transaction, and automatically downloading information related to the performance of financial transactions from the server to the local client application. In addition, the invention includes the steps of transferring downloaded information related to performed financial transactions from a local client application to a financial software application, performed financial transactions to produce output information, transmitting the output information from a financial software application to a local client application, and uploading the output information from a local software application to a server.

To achieve the stated and other objects of the present invention embodied and described below, the invention further includes intelligent agents automatically monitoring, automatically tracing, and automatically recording information related to financial transactions, automatically collating information downloaded from a server, automatically transferring downloaded information to a financial software application, automatically transferring downloaded information to a data file and to a model file, automatically analyzing downloaded information, automatically monitoring, classifying and tracking uploaded information related to financial functions, automatically collating information related to financial functions, automatically transferring uploaded information to a server, and automatically analyzing uploaded information related to financial functions. Additionally, the invention includes the step of intelligent agents combining uploaded information related to financial transactions and downloaded information related to financial functions to create a complete financial information profile of a user, the step of intelligent agents using downloaded information related to performance of financial transactions to generate userspecific profiles, reports, alerts, alarms, and reminders, and the step of intelligent agents using uploaded information related to financial functions to

performed financial transaction to the local software application; wherein the local software application transfers the downloaded information relating to the performed financial transaction to a financial software application; wherein financial functions using the downloaded information relating to the performed financial transaction is performed to produce output information; wherein the output information is transferred from the financial software application to the local software application; and wherein the output information is uploaded from the local software application to the user account on the server.

- 36. The system of claim 35, wherein the terminal comprises a personal computer.
- 37. The system of claim 35, wherein the terminal comprises a local area network.
- 38. The system of claim 35, wherein the local software application tracks bill payments made by a user through the server.
- 39. A method for performing financial transactions and financial accounting, comprising:

a local client application on a terminal receiving a user initiation;

the local client application initiating communication with a server;

the server providing the user with access to a user account;

receiving from the user a selection of a financial transaction;

receiving information input by the user relating to the selected financial transaction;

the server performing the financial transaction;

the server automatically downloading information relating to the performed financial transaction to the local client application;

receiving an instruction to transfer the downloaded information relating to the performed financial transaction from the local client application to a financial software application;

the local client application transferring the downloaded information relating to the performed financial transaction to the financial software application;

automatically performing financial functions using the downloaded information relating to the performed financial transaction to produce output information:

transmitting the output information from the financial software application to the local client application: and

uploading the output information from the local software application to the user account on the server.

- 40. The method of claim 39, wherein the local software application comprises an intelligent agent.
- 41. The method of claim 39, wherein the local software application comprises an applet.
- 42. The method of claim 39, further comprising:
 - an intelligent agent analyzing the downloaded and output information to produce an analysis report; and
 - the intelligent agent transmitting the analysis report to the user.
- 43. The method of claim 42, wherein analyzing the downloaded and output information comprises:

automatically monitoring the financial transaction;

automatically tracing progress of the financial transaction; and

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Additional objects, advantages and novel features of the invention will be set forth in part in the description which follows, and in part will become more apparent to those skilled in the art upon examination of the following or may be learned by practice of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

- FIG. 1 shows an overview of the key components of the system.
- FIG. 2 schematically shows the flow of information from the various components of the system, whereby the user can access information and download information from a variety of sources.
- FIG. 3 shows the overall system architecture via a flow chart.
- FIG. 4 also schematically shows the system and incorporates the intelligent agents, thereby demonstrating the possible functions and roles played by the intelligent agents in the system.
- FIG. 5 is a login window.
- FIG. 6 shows an alarm window
- FIG. 7 presents a reminder window.
- FIG. 8 is a payment reminder window.
- FIG. 9 shows a main window with pulldown menus and menu buttons.
- FIG. 10 contains the accounts pulldown menu.
- FIG. 11 presents the new account window.
- FIG. 12 is the account list window.
- FIG. 13A shows the activity details pop-up window.
- FIG. 13B shows the account activities pop-up window.
- FIG. 14 contains the display balances windows.
- FIG. 15 is the account summary pop-up window.
- FIG. 16 presents an expense category bar chart.
- FIG. 17 shows a window containing the wizard pulldown menu.
- FIG. 18 contains the reminder GUI window
- FIG. 19 shows the expense watchers pop-up window.
- FIG. 20 is the expense category window.
- FIG. 21 shows the payee list pop-up window.
- FIG. 22A is the ATM filter dialog window.
- FIG. 22B is the check filter dialog window.
- FIG. 23A shows the check trace display window.
- FIG. 23B shows the ATM trace display window.
- FIG. 24 is the on line banking menu.
- FIG. 25 presents the transfer pop-up window.
- FIG. 26 presents the recurring transfer pop-up window.
- FIG. 27 presents the payment pop-up window.
- FIG. 28 presents the payment conditions pop-up window.
- FIG. 29 presents the recurring payment pop-up window.

DETAILED DESCRIPTION

The present invention relates to automated and agent-assisted network performance of a wide variety of financial transactions. In an embodiment of the

to the financial transaction

44. The method of claim 39, further comprising:

receiving a selection by the user of an action relating to financial transactions; and

- receiving an input from the user that associates the action with a data file.
- 45. The method of claim 44, wherein the action comprises a warning message.
- 46. The method of claim 44, wherein the action comprises a reminder message.
- 47. The method of claim 44, wherein the action comprises a bill payment.
- 48. The method of claim 47, wherein the bill payment is recurring.
- 49. The method of claim 44, wherein the action comprises a funds transfer.
- 50. The method of claim 44, wherein receiving an input from the user that associates the action with a data file comprises receiving a selection of a date.
- 51. The method of claim 44, wherein receiving an input from the user that associates the action with a data file comprises receiving a beginning date.
- 52. The method of claim 44, wherein receiving an input from the user that associates the action with a data file comprises receiving an end date.
- 53. The method of claim 44, wherein receiving, an input from the user that associates the action with a data file comprises receiving a payee account.
- 54. The method of claim 44, wherein receiving an input from the user that associates the action with a data file comprises receiving a transferee account.
- 55. The method of claim 44, wherein receiving an input from the user that associates the action with a data file comprises receiving a condition for a payment.
- 56. The method of claim 39, further comprising:
 - receiving a selection from the user of an option to import the financial software application; and
 - the local client application importing the financial software application into the local client application.
- 57. The method of claim 56, further comprising receiving from the user initializing data requirements of the local client application for the financial software application.
- 58. The method of claim 39, wherein the information relating to the selected financial transaction comprises personal information.
- 59. The method of claim 39, wherein the information relating to the selected financial transaction comprises personal financial information.
- 60. The method of claim 39, wherein the information relating to the selected financial transaction comprises business information.
- 61. The method of claim 39, wherein the information relating to the selected financial transaction comprises banking information.
- 62. The method of claim 39, further comprising:

receiving at the local client application personal identification

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and perform functions for monitoring and tracing of financial transactions and integrated personal financial accounting using intelligent agents. In an embodiment of the present invention, the system includes a plurality of intelligent agents that perform these and other functions.

In an embodiment of the present invention, the user utilizes a local software application and connection to a networked server, such as a bank server, to perform on-line functions. In an embodiment of the present invention, the system is windows-based and menu-driven, which is described more fully in the examples and flow charts below.

In an embodiment of the present invention, the system utilizes local software to integrate the various components and interactions of the system. Additionally a module is utilized to download information by socket. Another module is utilized to handle the conversion between the downloaded file and local file. Additional modules are employed to handle the merging file by object linking and embedding (OLE) protocol. Yet another module is used to search the model file and the data file to provide the user with warnings and reminders. An additional module is required to handle on-line transactions via OLE calling of the local software application.

In an embodiment of the present invention, several files are maintained in the local machine, including: 1) a data file to keep all the downloaded information and all the on-line transactions made by the user; and 2) a model file to maintain paying habits rules and reminder input.

Furthermore, in an embodiment of the present invention, the system records all data concerning financial transactions on user accounts across different financial institutions. The system also allows the user to perform trace operations on a particular transaction. Additionally, in an embodiment of the present invention, the system classifies all financial transactions according to a set of user-defined expense categories. The system provides a default or standard set of expense categories, which the user may modify. It also can learn an optimum expense categorization customized to the user and his/her goals. A further aspect of the invention provides that the system generates financial reports and summaries to the user based upon expense categories. Moreover, the system provides a means for the user to perform on-line transactions on his/her accounts across financial institutions.

A further aspect of an embodiment of the present invention is that the system provides users with intelligent assistance/advice on financial management. The types of intelligent assistance include: 1) warning on monthly pending payment; 2) warning on low balance; 3) advice in paying a bill a few days later based upon withdrawal habit of the payee; 4) advice on moving money to a higher yielding account; 5) automatically invoking (by import) other financial planning software on the user's personal computer; and 6) warning that a spending threshold has been crossed. The system also provides a user financial profile to the intelligent agent server. This profile indicates a variety of user characteristics, such as user income, spending habit, and tolerance.

Additional aspects of the present invention are the interface requirements. The system interfaces with the on-line servers of a large number of financial institutions though data file downloading/uploading across the internet so that transaction data is loaded into the system and the user profile, is uploaded to an intelligent agent server. The system interfaces with other personal financial software though data file sharing/import/export so that the system and local personal financial software applications accommodate each other in terms of functionality. Furthermore, the system provides a graphical user interface (GUI), and it is able to run within internet navigators.

The present invention includes a variety of performance and usability requirements. The download/upload of data files across the internet is not slower than similar tasks performed by common internet navigators. Any operation that requires more than five seconds automatically pops up a dialog box with a message indicating the task being performed. Additionally the system provides a means for end-users to set expense categories, alarms, and reminders, and to configure other system features. Furthermore the system provides a help command on each of its sub-systems detailing the task

the local client application transmitting the personal identification information to the server; and

the server verifying the personal identification information.

- 63. The method of claim 39, wherein the terminal comprises a personal computer.
- 64. The method of claim 39, wherein the terminal comprises a server.
- 65. The method of claim 39, wherein the terminal comprises a main frame computer.
- 66. The method of claim 39, wherein the server comprises a personal computer.
- 67. The method of claim 39, wherein the server comprises a main frame computer.
- 68. The method of claim 39, wherein the financial transaction comprises a bill payment.
- 69. The method of claim 39, wherein the financial transaction comprises a funds transfer.
- 70. The method of claim 39, wherein the financial transaction comprises a trace of a check.
- 71. The method of claim 39, wherein the financial transaction comprises a trace of automatic teller machine activity.
- 72. The method of claim 39, further comprising:
 - a learning agent monitoring the uploaded output information;

the learning agent identifying trends in the uploaded output information; and

the learning agent transmitting the identified trends to the user account.

73. A system for performing financial transactions and financial accounting, comprising:

means for receiving a user initiation by a local client application on a terminal:

means for the local client application to initiate communication with a server:

means for the server to provide the user with access to a user account;

means for receiving from the user a selection of a financial transaction;

means for receiving information input by the user relating to the selected financial transaction;

means for the server to perform the financial transaction;

means for the server to download automatically information relating to the performed financial transaction to the local client application:

means for receiving an instruction to transfer the downloaded information relating to the performed financial transaction from the local client application to a financial software application;

means for the local client application to transfer the downloaded information relating to the performed financial transaction to the financial software application;

means for automatically performing financial functions using the downloaded information relating to the performed financial transaction to produce output information;

means for transmitting the output information from the financial software

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In an embodiment of the present invention, distribution and maintenance requirements enable the end-user to download via the internet the system from the intelligent agent server site to their home computers. As new features are added to the system, end-users download the patches from the intelligent agent server site. The patches are integrated into the existing system seamlessly, without users going through compiling, linking, and reinstalling.

means for uploading the output information from the local software application to the user account on the server.

In general, operation of an embodiment of the present invention is as follows. When the user inputs a correct access number and personal identification number (PIN), the system prompts the user via a menu for the account the user wishes to down-load. An aspect of the present invention is that the system prevents an unauthorized user from using any operation of the system and from viewing any of the system or transaction data files.

Upon down-loading the desired account, the user receives updated financial information automatically at the user's local terminal, such as a personal computer (PC). In an embodiment of the present invention, the application that implements this function uses a JAVA applet and a socket structure. The process of file transfer is transparent to the user. Updated financial information that may be downloaded by the user after accessing the server includes recently cleared checks, deposits, ATM withdrawals, and account balance. Subsequently to connecting to the server, the intelligent agent at the local site updates the local database of transaction and balance information. In an embodiment of the present invention, this update is accomplished by merging the local files with the newly downloaded files. Any necessary conversions between files from the server and locally used file format are performed automatically by the local software application. The files the intelligent agent receives upon default from the server are only those that relate to the latest transaction; the server maintains book marks to assure that only updated information is sent by default in order to minimize use of bandwidth during the transfer.

A more detailed description of the user interaction for an intelligent agent of the present invention follows. In an embodiment of the present invention, a local intelligent agent checks the date, based upon information downloaded from an intelligent agent server. The local intelligent agent searches for paying habit rules in the local rule file, searches the updated transaction history and searches the reminder file. Following these searches, the intelligent agent prompts the user with several possible alarms and reminders. An action button is shown on the screen for each warning and reminder. The warnings and reminders include: 1) Cleared checks; 2) Warning for pending payment; 3) Low balance alarm; 4) Uncleared due date payment; and 5) General Reminder.

When the action button for the cleared check reminder is selected, (for example, in a windows-based format by being "clicked on" by the user) a list of recently cleared checks is displayed. To change the local file and purge the displayed list of recently cleared checks, the merge file button is selected. If the merge button is not selected, the local file will not change, and the same list of recently cleared checks will appear the next time the action button for the cleared check reminder is selected.

A warning for a pending payment appears as a result of a system check for the current date and the due date for particular payments. A warning is only given if the due date is nearing or if a check for the payment has not cleared on or before the due date. An action button is provided to make these payments immediately by calling the payment module. Default information, such as the payee address, payee electronic transfer account number, date, and amount to be paid are automatically prompted by the system.

The low balance alarm warning is given when the balance of the user is lower than a threshold value selected by the user. There are two warnings in this case. One warning occurs if the actual balance of the user is lower than a predefined limit. Another warning is given when the debited balance of the user is lower than a predefined limit. It is important to note that a debited balance is different from an actual balance. A debited balance is the actual balance minus the total amount of uncleared payments. Debited balance is usually smaller than the actual balance and, in special cases, may even be smaller than zero. The lower limit can be set by the user or can be determined by the system from long-range financial goals, such as saving \$200 each month for retirement. Another type of limit can be an accept range of expense totals by expense category.

The uncleared due date payment alarm occurs if a check has not been cleared on the due date or one day before the due date. In general, the action button provides the following advice in this situation: call the payee to inform the payee to wait for a certain number of days or cancel the check from the bank. The general reminder appears based upon user-selected preferences. The user can write anything desired to a reminder file and a desired reminder date. On the date selected, the system reminds the user.

In an embodiment of the present invention, the display of the warnings and alarms is followed by the appearance of the main menu prompted by the local application. The following buttons are among those displayed: 1) Check trace; 2) Expense category; 3) ATM trace; 4) Uncleared checks; 5) Reminder builder; 6) Making payment; and 7) Financial planning tool.

The check trace option gives a full list of checks paid. Each record in check trace contains the following information: check number, date written, date cleared, amount, payee name, and category. The user makes queries by check name, written date, cleared date, amount, category, and any combination of these query selections.

The expense category option provides a list of expenses made, including the amount and date of each expense. The ATM transactions including date amount and leading of ATM transaction. The

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The reminder builder allows the user to write a self-reminder of any special event. A reminder is a text file with user-specified data. The user can write virtually anything in this reminder. The user must provide a date when the reminder file will actually remind the user.

The making payment option is handled by the local software application. This enables the user to perform electronic transfer, print and mail checks, and warehouse payments. Warehousing payments will set up paying habit models in the system to give warnings to the user at specified dates or upon specified conditions.

The financial planning tool option consists of a variety of functions handled by the local software application.

In order to further describe an embodiment of the present invention, a detailed description of an example interaction of a user with a banking server application of the present invention is now described. This application is not intended to limit or restrict use of the invention to banking applications.

An embodiment of the present invention includes a customer facility, which may be either a stand alone workstation or a LAN. At the customer facility, the user accesses a financial software application. The user may have more than one financial software application. Upon accessing the financial software application, the user exports financial information from the financial software application into account files. Exported information includes bill payment rules, expense category data, or investment instructions.

From the account files, the user uploads user profiles, such as bill payment instructions or investment instructions, directly into a user account located at a bank or financial institution. From the user account, the user profile information is communicated to the bank or financial institution server. Such user profile information is utilized by intelligent agents or learning agents employed by the bank to create a user-specific financial profile.

The bank or financial institution learning agents monitor the data in the user account and provide advice messages to the user account. These advice messages include warnings about overdrafts or advice about new investment options matched to the specific user's financial profile. Additionally the user receives financial reports generated by bank-employed intelligent agents. The user accesses the advice, alarms, or reports generated by the bank-employed intelligent agents when the user obtains access to the user account at the bank.

The user communicates with the user account via an internet connection to the bank server. Via this internet connection, the user performs cone of a number of banking or financial institution transactions. For these transactions, the user utilizes a password or series of passwords to access the account. The transactions performed can include withdrawals, transfers, deposits, investments in stocks, bonds, mutual funds, futures or options, bill payments, and establishment of certificates of deposit or money market accounts. The user also deposits financial instructions with the bank regarding rules of bill payment or account establishment or investment.

Information obtained as a result of on-line banking transactions or as a result of obtaining updated user account data is downloaded into a downloaded data file. Financial information from downloaded data files is transferred into account files of the local software application. Intelligent agents interfacing with the account files are programmed or defined by the user to generate specific alarms or reminders, to perform account merger functions, or to alert the user to the failure to meet specific investment goals or the failure to keep spending on certain categories of user-defined expenses within monthly limits.

References will now be made in detail to an embodiment of the invention, an example of which is illustrated in the accompanying drawings.

FIG. 1 shows an overview of key components of the system for a banking application of an embodiment of the present invention. A user 1 at a terminal 2, such as a personal computer, accesses 3 a primary bank server 4 and a secondary bank server 5 via a network 6. According to an embodiment of the present invention, the user 1 accesses 3 the servers 4 and 5 using software, such as an applet, operating among the terminal 2, the network 6, and the servers 4 and 5.

FIG. 2 demonstrates the flow of information through the system. A primary bank server 4 functions as a repository for a variety of financial information. Through a network 6, such as the internet, a user at a terminal (not shown) connects 3, via the intelligent agent applet 10 using a proper protocol such as transport control protocol/internet protocol (TCP/IP) to the primary bank server 4, thereby permitting the user to upload financial information to the primary bank server 4 or to download financial information from the primary bank server 4. In cases where the user has accounts or financial transactions with more than one banking institution, the user accesses via the network 6 a secondary bank server 5. From the secondary bank server 5, the user also downloads financial information. Again the user may choose to upload financial information to the secondary bank server 5.

Via the connection 3, the user's downloaded information, from either the primary bank server 4 or from the secondary bank server 5, reaches the intelligent agent applets 10, which serve as the interface 11 and 3 between the network 6, including the servers 4 and 5, and the user's data file 12 and model file 13, located on a local terminal (not shown), such as a PC. The applets also communicate information between the network 6, the servers 4 and 5, and, the financial software application 14. The financial software application 14 may be housed locally on the terminal or on another server (not shown). The link between the network 6 and the financial software application 14 occurs via object linking and embedding protocol (OLE) 15.

Financial data flows 11 from the intelligent agent applies 10 to the data file 12 and the model file 13. Additionally financial

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the model file 13, information is sent 15 to the financial software application 14, or information is sent 15 from the financial software application 14 to the data file 12 and the model file 13. Data is also sent directly 16 from the intelligent agent applets 10 to the financial software application 14 via OLE or from the financial software application 14 to the intelligent agent applets 10.

FIG. 3 is a flow chart demonstrating the overall system architecture. A user (not shown) utilizes an internet browser 20 to perform 21 an on-line transaction at the primary bank server 4. Additionally the user utilizes the internet browser 20 to connect 21 to the primary bank server 4 and view account information. As a result of any transaction performed by the user in connection with the primary bank server 4, the primary bank server 4 sends 22 a message, such as by electronic mail, regarding any relevant transactional confirmation, description, or associated charges to the user account 23.

A local client application 24 is compatible with the proper communication mode and language of the primary bank server 4. This enables the user to utilize the local client application 24 to perform an on-line transaction by connecting 25 to the primary bank server 4. Moreover, the user utilizes the local client application 24 to receive 25 downloaded financial data from the primary bank server 4.

Downloaded financial data received via the local client application 24 is stored 26 in the local data file 27. The financial data stored in the local data file 27 is imported 28 into the financial software application 14. Alternatively the local client application 24 can call the financial software application 14 directly 30, thereby enabling exchange of data between the local client application 24 and the financial software application 14.

FIG. 4 is a flow chart which amplifies the basic outline of the information flow demonstrated in FIG. 2 and the overall system architecture shown in FIG. 3. In addition, FIG. 4 provides further detail regarding the role of intelligent agents or learning agents.

As shown in FIG. 4, the user using an internet browser 20 connects 21 via a terminal (not shown), such as a PC, through a network connection 6 to a primary bank 40 or to a secondary bank 41. Via the network 6, the user downloads data files 42 from the primary bank server 4 or from the secondary bank server 5 of the primary bank 40 or the secondary bank 41, respectively. In the case of the primary bank server 4, financial information is communicated 43 from the primary bank user account 23 to the primary bank server 4, and the primary batik server 4 downloads the information upon request by the user to a downloaded data file 42 via the network connection 6. This downloaded data file 42 is incorporated 44 by the user into the account files 45 so that the account files 45 are maintained as current. From the account files 45, the user communicates 46 financial data to financial software applications 14. In some cases, the user chooses to have two or more types of financial software applications 48 and 49. For example, the user may have one software application A, 48, which keeps a database of expenses and income. Another software application B, 49, enables the user to maintain a financial transaction and investment database.

An additional feature of the present invention shown in FIG. 4 is the capability for the user to transfer 50 user files 51 directly from the account files 45 to the primary bank user account 23. In this way, the user transfers financial data or messages into the user account 23, which permits the user to accomplish a variety of financial tasks, such as modifying the date that automatic payments are made for mortgages or for automobile loans.

Another aspect of the present invention is shown in FIG. 4, in which agents, such as intelligent and/or learning agents 52 and 53 employed by the primary bank 40 monitor a user's financial transactions, including withdrawals, transfers, and investments, so that the intelligent agents 52 and 53 create a user-specific profile that is available only to the user to advise the user of improved ways of investing, notify the user of different types of accounts that the user may want to create at the primary bank 40, or generate a report for the user detailing all or part of the user's financial history at the primary bank 40. The information is gathered and analyzed by the intelligent or learning agents 52 and 53 is communicated 54 to the user account 23. In this way, the user may access and download this information when the user has connected 21 to the user's account 23 via a network connection 6 to the primary bank server 4. Ultimately the user downloads the information created by the learning agent 52 and/or 53 to a downloaded data file 42. As with other financial information or data downloaded from the primary bank server 4, the user chooses to place the downloaded data file 42 from one of the learning or intelligent agents, 52 and/or 53, into the account files 45. Again the user transfers 46 such an account file 45 into the financial software 14, thereby allowing the data from the learning or intelligent agents, 52 and/or 53, to be incorporated into the financial software 14. The user also transfers 46 data or information from the financial software 14 to the account files 45.

Yet another aspect of the present invention shown in FIG. 4 is the function of a variety of different proactive features of the system that communicate directly with the account files 45. As part of the system, features, such as intelligent agents, act as proactive financial alarms and reminders 55 as they monitor 56 data that accumulates in the account files 45, such as rules for payments to be made to creditors or rules for investments to be made at financial institutions. In an embodiment of the present invention, the alarms and reminders 55 utilize the account files 45 to create a special form of advice for users. For example, this advice takes the form of a payment alarm communicated 56 from the intelligent agent alarms and reminders 55 to the account files 45, from which the user imports the information reminding the user to pay a bill into his financial software 45.

Another feature of the intelligent agents that communicates directly with the user's account files includes the accounts merger feature 57, which generates a report for the user which tracks all of the user's expenses, income, investments, and tax information. This information generated is communicated 58 to the account files 45. In this way the accounts merger

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such as payee, check or transaction number, expense category, and amount. Additionally the accounts merger gives the user a comprehensive picture of the user's financial history, projects numbers for the user's financial future, or generates user-specific reports on a subset of the user's financial data.

FIG. 4 also shows that various learning agents 59 and other intelligent agent-based functions 60 communicate 61 directly with the account files 45 to give other specific forms of advice or to generate specific types of reports. For example, in an embodiment of the present invention, the user employs a learning agent 59 to monitor a user-defined category of expenses, such as restaurant expenses. When the user records the restaurant expenses in his financial software 14, the user transfers that information to the account files 45, where the learning agent 59 acts as a monitor. When the user's defined restaurant expense spending limit for the month is exceeded, the learning agent 59 notifies the account files 45. In turn, the account files 45 notify the user that the learning agent 59 has delivered a message that monthly restaurant expenses have been exceeded.

In an embodiment of the present invention, other agent-based functions 60 include such things as an intelligent agent employed to monitor the growth of investment income. The user establishes certain investment goals, which the intelligent agent 60 monitors. As the investments are made with financial institutions, such as the primary bank 40 or the secondary bank 41, the user accesses the primary bank server 4 or the secondary bank server 5 via a network connection 6 to make investments or to transfer updated investment data to a downloaded data file 42. This information is then transferred into an account file 45, and the other function intelligent agent 60 monitors and tracks the data. When certain user-defined goals are not being achieved, for example, the other function intelligent agent 60 notifies the account files 45 with a message. This message is available to the user the next time that the user accesses the account files 45 from the financial software 14.

An embodiment of the present invention includes a windows-based graphical user interface (GUI) for a user to access the functions of the system. Once the user enters the system, the user is presented with a window that includes pull-down menus. These pull-down menus include a menu for Account. Within the Account menu is a selection for Open. As shown in FIG. 5, when the user selects Open from the Account menu, a pop-up screen 100 appears for user logon, as shown in FIG. 5. The user inputs an access number 101 and a Personal Identification Number (PIN) 102. After inputting this information, the user selects Next 103 to proceed or Cancel 104 to cancel the opening of the account.

After selecting Next 103 in FIG. 5, if the appropriate Access Number 101 and PIN 102 have been inputted by the user, an alarm window 110 appears, as shown in FIG. 6. This alarm window 110 provides various information to the user based on preselected alarms. For example, the alarm window 110 may inform the user that "You've got to pay nynex \$300 from citibank checking today!" 111. After viewing the alarm window 110, the user can select the button to quit 112.

Within the alarm window 110, as shown in FIG. 6, the user can obtain more details on a particular alarm by selecting that alarm. A pop-up window 115, as shown in FIG. 7, appears to provide more details on items selected that are reminders. The user can scroll among the text of the details using the scroll bars 116 and 117. The user selects the OK button 118 when finished.

If the alarm within the alarm window 110, as shown in FIG. 6, relates to a payment reminder, the details shown when the user selects the alarm differ from those for any other type of reminder. As shown in FIG. 8, a window 120 appears containing information about From Account 121, Payee Name 122, Amount 123, and Date due 124. The user can select OK 125 to automatically make the payment or Cancel 126 to not make the payment. If the payment alarm is a periodic payment, such as monthly, the alarm will recur each period.

If the user selects Quit 112 in the Alarm window 110, as shown in FIG. 6, a menu screen 130 appears, as shown in FIG. 9. The menu 130 includes buttons for ATM Trace 131, Expense Category 132, Make Payment 133. Check Trace 134, and Financial Planning 135. In addition, a series of pulldown menus are included at the top of the window 130. These pulldown menus include File 136, Accounts 137, Wizards 138, and Help 139.

The File 136 pulldown menu in FIG. 9 contains a selection to Exit the system.

As shown in FIG. 10, if the user selects Accounts 137, at pulldown menu appears that includes New 145, Change 146, Download 147, Classify Activities 148, Balances 149, and Summaries 150.

If the user selects New 145 from the Accounts 137 menu, as shown in FIG. 10, a pop-up window 160 appears, as shown in FIG. 11. The user then inputs information about the new account. This information includes Name 161, Server IP 162, Type 163, Port 164, URL 165, Account 166, PIN 167, and Base Balance 168. The user selects OK 169 after inputting information or Cancel 170 to exit the pop-up window.

In FIG. 10, if the user selects Download 147, a pop-up window 180 appears, as shown in FIG. 12. This window 180 includes a list of accounts 181 from which the user may select. Also included are buttons to Select All 182, OK 183 to accept a selection, and Cancel 184 to cancel a selection. After selecting OK 183, the system proceeds to download the selected files.

In FIG. 12, the user can process an item on the list 181 by double clicking on a selected item. Double clicking produces another pop-up window 190, as shown in FIG. 13A. The information provided for processing includes Date 191, Amount 192, Status 193, Category 194, Check Number 195, Payee/Description 196, Address 197, and Memo 198. The user can select OK 199 if the information is correct, Delete 200 to delete the detail, or Cancel 201.

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199 in FIG. 13A, a pop-up window 210 appears, as shown in FIG. 13B. This pop-up window 210 includes an Activity section 211, a Notes section 212, and a scroll bar 213 for the user to scroll among information in the Activity section 211. The user can select to Merge 214 the new information into the stored local information or Cancel 215.

In FIG. 10, if the user selects Balances 149 from the Accounts menu 137, pop-up windows appear, such as those for checking 220 and phone 221, as shown in FIG. 14. After reviewing, the user selects OK 220a and 221a to return to the menu shown in FIG. 9.

In FIG. 10, if the user selects Summaries 150 from the Accounts menu 137, a pop-up window 225 appears, as shown in FIG. 15. This window 225 includes an Expense Category section 226, an Average balance section 227, and a cumulative Total of transactions section 228. The user may select OK 229 to return to the menu shown in FIG. 9.

In FIG. 15, if the user double-clicks on a selected item in the Expense Category 226, a pop-up window 230 appears, as shown in FIG. 16. The bar chart includes detailed information on the monthly expenditures for that category. The user selects OK 231 to return to the Account Summary pop-up window 225, as shown in FIG. 15.

In FIG. 9, if the user selects the Wizards menu 138, a list of menu items appears, as shown in FIG. 17. These menu items include Reminders 235, Expense Watchers 236, Transaction Ontology 237, and Payee List 238.

In FIG. 17, if the user selects Reminders 235 from the Wizards menu 138, a pop-up window 240 appears, as shown in FIG. 18. This pop-up window 240 allows the user to set reminders. Information to be input in the window 240 by the user includes Month 241, Day 242, and reminder text 243. The user selects OK 244 after completing input or Cancel 245 to cancel.

In FIG. 17, if the user selects Expense Watchers 236, a pop-up window 250 appears, as shown in FIG. 19. The expense watcher observes transactions in a given category across all accounts and causes warnings and alarms when thresholds specified by the user are approached or exceeded. To set a watcher, the user selects an Expense Category 251, an Upper Limit per Month 252, and a Warn Within amount 253. After inputting information the user may select OK 254 or Cancel 255.

In FIG. 17, if the user selects Transaction Ontology 237 from the Wizards menu 138, a pop-up window 260 appears, as shown in FIG. 20. This option allows the user to specify new expense categories for the user's accounts. The window 260 includes Expense Categories 261 with a scroll bar 261a. The user may list a New Category 262 and use buttons to Add 263 the New Category 262 inputted, or Delete 264 selected Expense Categories 261. The user selects OK 265 when finished or Cancel 266 to cancel.

In FIG. 17, if the user selects Payee List 238 from the Wizards menu 138, a pop-up window 270 appears, as shown in FIG. 21. The payee list is the list of most frequently used payees and their expense categories, which are stored for use in the online banking functions. The window 270 includes a list of Payees 271, a list of Categories 272, a section for the user to input the name of a New Payee 273, and buttons to Add 274 the new payee, Delete 275 a selected payee, or Change 276 a category of a payee. The user can keep changes by selecting the OK button 277 or Cancel 278 changes.

In FIG. 9, if the user selects the button for ATM Trace 131 or Check Trace 134, the Account List window 180, as shown in FIG. 12, appears. The user then selects a savings or checking account from the account list 181 and then selects the button for OK 183. The pop-up windows 280, shown in FIG. 22A and 290, shown in FIG. 22B appear, respectively, for ATM and Check filters. From the ATM filter window 280, the user selects a month 281, day 282, and year 283 for the trace to begin and a month 284, day 285, and year 286 for the trace to end. If no date is entered for the beginning date, the trace will start at the first transaction; if no date is entered for the end date, the default is the current date. For the check filter, the user also enters a beginning month 291, day 292, and year 293 and an ending month 294, day 295, and year 296. For check filter, the user also selects whether to include All Checks 297a, Cleared Only 297b, or Uncleared Only 197c. The user then selects OK 288 and 299, for FIGS. 22A and 22B, respectively, or Cancel 287 and 298, respectively.

After the user selects the OK 288 and 299 buttons, either the pop-up window 300, shown in FIG. 23A, or 305, shown in FIG. 23B, respectively, appear. FIG. 23A shows the Check Trace Display. The window 300 includes a list of checks and dates 301 and has scroll bars 302a and 302b for the user to scroll the text. The user may Close 303 the window 300 when finished. FIG. 23B shows the ATM Trace results. The window 305 includes a list of transactions and dates 306 and has scroll bars 307a and 307b for the user to scroll the text. The user may Close 308 the window 305 when finished.

In FIG. 9, if the user selects the button for Financial Planning 135, the system automatically executes a financial planner, such as Quicken. The user can then import information from the system into the planner.

In FIG. 9, if the user selects the Make Payment button 133, a window 310 appears, as shown in FIG. 24. This option allows the user to use a bank server to make payments and transfers. This window 310 includes button, for Transfer 311, Recurring Transfer 312, Payment 313, Recurring Payment 314, and Payee List 315.

In FIG. 24, if the user selects the Transfer button 311, a pop-up window 320 appears, as shown in FIG. 25. This window 320 allows the user to input information about From Account 321, To Account 322, Amount 323, and Date 324 in order to make a one-time transfer. The user may OK 325 the transfer or Cancel 326.

In FIG. 24, if the user selects the Recurring Transfer button 312, a pop-up window 330 appears, as shown in FIG. 26. This window 330 allows the user to input information about From Account 331, To Account 332, Amount 333, Date 334, and

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In FIG. 24, if the user selects the Payment button 313, a pop-up window 340 appears, as shown in FIG. 27. This window 340 allows the- user to input information about From Account 341, Payee Name 342, Amount 343, Date 344, and Category 345 in order to make a one-time payment. In addition, the user can select the button for Set Payment Condition 346. The user may OK 347 the payment or Cancel 348.

In FIG. 27, if the user selects the button for Set Payment Condition 346, a window 350 appears, as shown in FIG. 28. Condition information that the user may input includes Earliest Date 351, Latest Date 352, Account balance No Less Than 353, and Payment Priority 354; the user can also select the box for Only Make Payment When No Alarms Occur 356. The user may OK 357 the payment conditions or Cancel 358.

In FIG. 24, if the user selects the Recurring Payment button 314, a pop-up window 360 appears, as shown in FIG. 29. This window 360 allows the user to input information about From Account 361, Payee Name 362, Amount 363, Date 364, Frequency 365, and Category 366 in order to make a recurring payment. The user may OK 367 the recurring payment or Cancel 368.

In FIG. 24, if the user selects the Payee List 315 button, the window 270, shown in FIG. 21, above for Payee List appears.

In FIG. 9, if the user selects the Expense Category 132 button, the window 260, shown in FIG. 20, above, for Expense Category appears.

Other features of an embodiment of the present invention include the following. The agent can analyze a bill and set condition alarms such as unusual balances in an expense category; when a bill balance is outside normal range; a previously unknown or suspicious payee or expense category; a date or date range by which a bill is to be paid; and insufficient balance to cover expense due. These alarms can be learned by the agent, and set and modified by the user. Also a list of bills can be specified to be processed by the agent in priority order.

An embodiment of the present invention could include other additional features of agents, such as investment advice, tax advice based on learning and adapting to customers transaction history, evaluated net worth, and previously specified goals.

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US6788768	Dec 7, 1999	Sep 7, 2004	Microstrategy, Incorporated	System and method for real-time, personalized, dynamic, interactive voice services for book-related information
US6792422 *	Jun 19, 2000	Sep 14, 2004	Microsoft Corporation	Automatic categorization of financial transactions
US6798867	Dec 7, 1999	Sep 28, 2004	Microstrategy, Incorporated	System and method for the creation and automatic deployment of personalized, dynamic and interactive voice services, with real-time database queries
US6826540	Dec 29, 1999	Nov 30, 2004	Virtual Personalities, Inc.	Virtual human interface for conducting surveys
US6829334	Feb 2, 2000	Dec 7, 2004	Microstrategy, Incorporated	System and method for the creation and automatic deployment of personalized, dynamic and interactive voice services, with telephone-based service utilization and control
US6836537	Dec 7, 1999	Dec 28, 2004	Microstrategy Incorporated	System and method for real-time, personalized, dynamic, interactive voice services for information related to existing travel schedule
US6850991	Dec 22, 1999	Feb 1, 2005	Citibank, N.A.	Systems and methods for distributing information to a diverse plurality of devices
US6908031	Nov 7, 2002	Jun 21, 2005	First Data Corporation	Systems and methods for price matching on funds transfers
US6922693	Aug 10, 2000	Jul 26, 2005	Finjan Software, Ltd.	Method and system for copy protection of images displayed on a computer monitor
US6922813 *	Apr 4, 2001	Jul 26, 2005	E*Trade	Page prerequisite control mechanism
US6932268	Jun 30, 2003	Aug 23, 2005	Checkfree Corporation	Dual mode credit card based payment technique
US6944822	Jun 16, 2000	Sep 13, 2005	Finjan Software, Ltd.	Method and apparatus for preventing reuse of text, images, and software transmitted via networks
US6990466 *	Aug 8, 2000	Jan 24, 2006	International Business Machines Corporation	Method and system for integrating core banking business processes

Citing Patent	Filing date	Publication date	Applicant	Title
US7044365 *	Dec 2, 2003	May 16, 2006	Accubalance Corporation	Method for reconciling a financial account from a portable account register
US7050999 *	Mar 31, 2000	May 23, 2006	Resona Holdings, Inc.	System for computing probability distribution of loan losses
US7062456 *	Oct 7, 1999	Jun 13, 2006	The Chase Manhattan Bank	System and method for back office processing of banking transactions using electronic files
US7069241 *	Oct 6, 2000	Jun 27, 2006	Masaaki Usui	Method and system for unified management of plurality of assets using computer network
US7070094	May 27, 2004	Jul 4, 2006	First Data Corporation	Method and system for performing money transfer transactions
US7076469	Dec 5, 2000	Jul 11, 2006	Finjan Software Ltd.	Copyright protection of digital images transmitted over networks
US7076504	Nov 19, 1998	Jul 11, 2006	Accenture Llp	Sharing a centralized profile
US7096205	Mar 29, 2002	Aug 22, 2006	First Data Corporation	Systems and methods for enrolling consumers in goods and services
US7103556	Sep 26, 2001	Sep 5, 2006	Jpmorgan Chase Bank, N.A.	System and method for aggregate portfolio client support
US7103577	Sep 30, 2003	Sep 5, 2006	First Data Corporation	Systems and methods for staging transactions, payments and collections
US7107244	Jun 11, 2001	Sep 12, 2006	Checkfree Corporation	Bill payment system and method with merchant information
US7107249	Mar 29, 2002	Sep 12, 2006	First Data Corporation	Electronic identifier payment systems and methods
US7117183	Jan 28, 2004	Oct 3, 2006	First Data Coroporation	Airline ticket payment and reservation system and methods
US7130817	Dec 5, 2002	Oct 31, 2006	First Data Corporation	Electronic gift linking
US7155744	Dec 4, 2000	Dec 26, 2006	Finjan Software, Ltd	Copyright protection of digital images transmitted over networks
US7158955	Dec 10, 2001	Jan 2, 2007	First Data Corporation	Electronic identifier payment systems and methods
US7165052	Mar 31, 2001	Jan 16, 2007	First Data Corporation	Payment service method and system
US7167839 *	Nov 5, 1999	Jan 23, 2007	Commercial Recovery Corporation	Collection agency data access method
US7177846	Jul 29, 2002	Feb 13, 2007	Checkfree Corporation	Technique for account authentication
US7184989	May 21, 2003	Feb 27, 2007	First Data Corporation	Staged transactions systems and methods Method and apparatus for preventing reuse of text,
US7185358 *	Jun 16, 2000	Feb 27, 2007	Finjan Software, Ltd.	images and software transmitted via networks
US7188076	Dec 19, 2000	Mar 6, 2007	Ndex Systems Inc. Hewlett-Packard	System and method for creating a true customer profile System and method for a mobile computing device to
US7206559	Oct 16, 2001	Apr 17, 2007	Development Company, L.P.	control appliances
US7212996	Apr 20, 2000	May 1, 2007	Jpmorgan Chase Bank, N.A.	System and method for dynamic, multivariable comparison of financial products
US7219832	Jun 15, 2005	May 22, 2007	First Data Corporation	ATM machine and methods with currency conversion capabilities
US7222093 *	Apr 19, 2002	May 22, 2007	Ameriprise Financial, Inc.	System and method for facilitating investment account transfers
US7234103	Apr 26, 2000	Jun 19, 2007	Accenture Llp	Network-based tax framework database
US7240031	Mar 31, 2000	Jul 3, 2007	Checkfree Corporation	Bill payment system and method with a master merchant database
US7251656	Jul 26, 2002	Jul 31, 2007	Checkfree Corporation	Electronic payments using multiple unique payee identifiers
US7253817	Aug 20, 2004	Aug 7, 2007	Virtual Personalities, Inc.	Virtual human interface for conducting surveys
US7266533	Dec 6, 2001	Sep 4, 2007	The Western Union Company	Electronic gift greeting
US7281272	Dec 13, 1999	Oct 9, 2007	Finjan Software Ltd.	Method and system for copyright protection of digital images
US7295999	Dec 20, 2000	Nov 13, 2007	Jpmorgan Chase Bank, N.A.	System and method for determining eligibility and enrolling members in various programs
US7296004	Dec 19, 1997	Nov 13, 2007	Checkfree Corporation	Electronic bill payment system with merchant identification
US7318046 *	Jul 16, 1999	Jan 8, 2008	American Management Systems, Inc.	Collector's account payment promise option advisory apparatus and method
US7333951 *	Jun 9, 2000	Feb 19, 2008	Charles Schwab & Co.	Method and system for building and maintenance watch lists
US7363261	May 8, 2002	Apr 22, 2008	Regions Asset Company	Method, computer program product and system for verifying financial data
US7366697 *	Mar 30, 2001	Apr 29, 2008	Checkfree Corporation	Electronic bill presentment with bill categorization
US7373324	Jun 7, 2000	May 13, 2008	Robert C. Osborne	Method and system for exchange of financial investment advice
US7383218 *	Jul 31, 2002	Jun 3, 2008	Charles Schwab & Co., Inc.	Method and system for integrating investment advice with financial account statement information
US7389256 *	Aug 2, 1999	Jun 17, 2008	Jpmorgan Chase Bank, N.A.	Network based financial transaction processing system
US7392940	May 18, 2005	Jul 1, 2008	The Western Union Company	In-lane money transfer systems and methods
US7395243 US7398252	Nov 1, 2002 Oct 26, 2001	Jul 1, 2008 Jul 8, 2008	Checkfree Corporation First Data Corporation	Technique for presenting matched billers to a consumer Automated group payment
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Citing Patent	Filing date	Publication date	Applicant	Title
US7426652	Sep 9, 2003	Sep 16, 2008	Messageone, Inc.	System and method for application monitoring and automatic disaster recovery for high-availability
US7433840	Mar 14, 2007	Oct 7, 2008	Jpmorgan Chase Bank, N.A.	System and method for dynamic, multivariable comparison of financial products
US7458507	May 16, 2007	Dec 2, 2008	First Data Corporation	ATM machine and methods with currency conversion capabilities
US7463946	Jun 13, 2005	Dec 9, 2008	First Data Corporation	Mail handling equipment and methods
US7467109	May 7, 2007	Dec 16, 2008	Jpmorgan Chase Bank, N.A.	System and method for determining eligibility and enrolling members in various programs
US7472088	Jun 1, 2001	Dec 30, 2008	Jpmorgan Chase Bank N.A.	System and method for offering a financial product
US7480631	Dec 15, 2004	Jan 20, 2009	Jpmorgan Chase Bank, N.A.	System and method for detecting and processing fraud and credit abuse
US7490063	Jan 14, 2002	Feb 10, 2009	Checkfree Corporation	Remittance payment processing with account scheming and/or validation
US7493270 *	Feb 22, 2001	Feb 17, 2009	Jenkins Gerald L	Method of engaging in one or more transactional activities on the internet with limited liability to an initiator
US7497373 *	Aug 5, 2005	Mar 3, 2009	International Business Machines Corporation	Intelligent reminder service to track customer requests and processing
US7502749	May 8, 2001	Mar 10, 2009	Checkfree Corporation	Method and system for making a monetary gift
US7505921	Mar 3, 2000	Mar 17, 2009	Finali Corporation	System and method for optimizing a product configuration
US7509279	Apr 17, 2006	Mar 24, 2009	Riskmetrics Group, Inc.	Method and system for computing path dependent probabilities of attaining financial goals
US7512552	Sep 12, 2006	Mar 31, 2009	The Western Union Company	Electronic gift linking
US7526447	Aug 29, 2003	Apr 28, 2009	lgt	Method and apparatus for facilitating monetary and reward transactions and accounting in a gaming environment
US7526448	Nov 1, 2002	Apr 28, 2009	Checkfree Corporation	Matching consumers with billers having bills available for electronic presentment
US7539635 *	Dec 29, 2003	May 26, 2009	H&R Block Tax Services, Llc.	System and method for generating a personalized tax advice document
US7542921	Sep 29, 2000	Jun 2, 2009	Jpmorgan Chase Bank, N.A.	Network-based financial planning system and method
US7549575	Jun 5, 2007	Jun 23, 2009	The Western Union Company	Money transfer systems and methods for travelers
US7552190	Oct 27, 1999	Jun 23, 2009	Verticalone Corporation	System and method for automated electronic notification and transaction execution
US7578434	Mar 28, 2005	Aug 25, 2009	The Western Union Company	System and method for transferring money from one country to a stored value account in a different country
US7587342	Sep 29, 2006	Sep 8, 2009	First Data Corporation	Method for requesting and receiving an online payment through a payment enabler system
US7593888	Feb 9, 2007	Sep 22, 2009	Ameriprise Financial, Inc.	System and method for facilitating investment account transfers
US7596529	Feb 13, 2002	Sep 29, 2009	First Data Corporation	Buttons for person to person payments
US7596609	Jan 28, 1999	Sep 29, 2009	Net-Express, Ltd.	WWW addressing
US7599879	Mar 21, 2001	Oct 6, 2009	Jpmorgan Chase Bank, National Association	Syndication loan administration and processing system
US7603301	Apr 26, 2000	Oct 13, 2009	Accenture Llp	Verification and printing of a tax return in a network- based tax architecture
US7606734	Jul 11, 2001	Oct 20, 2009	The Western Union Company	Wide area network person-to-person payment
US7606756	Jun 3, 2003	Oct 20, 2009	Jpmorgan Chase Bank, N.A.	Synthetic funds having structured notes
US7606787	Jun 7, 2005	Oct 20, 2009	Checkfree Corporation	Propagating data to facilitate electronic payments to payees
US7610196	Apr 8, 2005	Oct 27, 2009	Qnx Software Systems (Wavemakers), Inc.	Periodic signal enhancement system
US7610222	Oct 30, 2007	Oct 27, 2009	First Data Corporation	Method for providing a money transfer service through a payment enabler system
US7610231	Nov 1, 2005	Oct 27, 2009	Jpmorgan Chase Bank, N.A.	Synthetic funds having structured notes
US7613653	Oct 26, 2001	Nov 3, 2009	First Data Corporation	Money order debit from stored value fund
US7613655	May 31, 2007	Nov 3, 2009	Western Union Company	Value transfer systems and methods
US7614014	Aug 31, 2001	Nov 3, 2009	Daniel Keele Burgin	System and method for automated end-user support
US7617157	Jan 3, 2002	Nov 10, 2009	The Western Union Company	Method for receiving electronically transferred funds using an automated teller machine
US7623848	Mar 22, 2004	Nov 24, 2009	Dell Marketing Usa L.P.	Method and system for providing backup messages to wireless devices during outages
US7624068	Aug 18, 2004	Nov 24, 2009	Jpmorgan Chase Bank, N.A.	Method and system for dynamically adjusting discount rates for a card transaction
US7631032	Jan 28, 1999	Dec 8, 2009	Net-Express, Ltd.	Personalized internet interaction by adapting a page format to a user record
US7636688	Mar 30, 2001	Dec 22, 2009	Checkfree Corporation	Electronic bill processing with multi-level bill information storage
US7644036	Jun 30, 2006	Jan 5, 2010	Checkfree Corporation	Credit card supported electronic payments

Citing Patent	Filing date	Publication date	Applicant	Title
US7654449	Feb 29, 2008	Feb 2, 2010	The Western Union Company	Method and system for performing money transfer transactions
US7657759	Jun 28, 2005	Feb 2, 2010	Finjan Software, Ltd.	Method and system for copy protection of displayed data content
US7660766	Jun 30, 2003	Feb 9, 2010	Checkfree Services Corporation	Technique for information flow to payees
US7664956	May 7, 2002	Feb 16, 2010	Finjan Software, Ltd.	Method and system for real-time control of document printing
US7668777	Jul 23, 2004	Feb 23, 2010	Jp Morgan Chase Bank	System and method for providing instant-decision, financial network-based payment cards
US7668781 *	Apr 17, 2008	Feb 23, 2010	Citicorp Development Center, Inc.	Global method and system for providing enhanced transactional functionality through a customer terminal
US7672879	Oct 27, 2000	Mar 2, 2010	Yodlee.Com, Inc.	Interactive activity interface for managing personal data and performing transactions over a data packet network
US7673792	Apr 26, 2006	Mar 9, 2010	The Western Union Company	Method and system for performing money transfer transactions
US7676417 *	May 5, 2006	Mar 9, 2010	Masaaki Usui	Method and system for unified management of plurality of assets using computer network
US7680652	Oct 26, 2004	Mar 16, 2010	Qnx Software Systems (Wavemakers), Inc.	Periodic signal enhancement system
US7685036 *	Oct 13, 2000	Mar 23, 2010	Ubs Financial Services, Inc.	System and method for delivering a financial message
US7685064	Apr 19, 2005	Mar 23, 2010	Jp Morgan Chase Bank	Method and apparatus for evaluating a financial transaction
US7702583	Aug 1, 2003	Apr 20, 2010	Checkfree Corporation	Payment processing with selection of an electronic debiting option
US7702585	Nov 30, 2006	Apr 20, 2010	Checkfree Corporation	Methods and systems for the determination and display of payment lead time in an electronic payment system
US7707192	May 23, 2006	Apr 27, 2010	Jp Morgan Chase Bank, N.A.	Confidence index for assets
US7711606	Mar 9, 2005	May 4, 2010	Globys, Inc.	Method and computer readable medium for assisting a customer in choosing among commodities
US7711690	Jan 21, 1998	May 4, 2010	Checkfree Corporation	Dual source remittance processing
US7716046	Dec 23, 2005	May 11, 2010	Qnx Software Systems (Wavemakers), Inc.	Advanced periodic signal enhancement
US7716128	Nov 30, 2007	May 11, 2010	The Western Union Company	Electronic indentifier payment systems and methods
US7717330	Jul 18, 2008	May 18, 2010	The Western Union Company	Systems and methods for price matching on funds transfers
US7721218 *	Mar 31, 2003	May 18, 2010	International Business Machines Corporation	Mechanism for intelligent user interface presentation of a software agent
US7729959	Mar 21, 2002	Jun 1, 2010	Intuit Inc.	Web-based entry of financial transaction information and subsequent download of such information
US7729996	Jun 30, 2004	Jun 1, 2010	Checkfree Corporation	Reuse of an EBP account through alternate authentication
US7752535 *	Dec 1, 2005	Jul 6, 2010	Yodlec.com, Inc.	Categorization of summarized information
US7753267	May 22, 2008	Jul 13, 2010	The Western Union Company	In-lane money transfer systems and methods
US7756896	Apr 7, 2005	Jul 13, 2010	Jp Morgan Chase Bank	System and method for multi-dimensional risk analysis
US7761355 *	May 18, 2007	Jul 20, 2010	General Electric Company	Computer apparatus and method for performing financial transaction processing
US7765279	Oct 27, 1999	Jul 27, 2010	Verticalone Corporation	System and method for scheduling harvesting of personal information
US7774248	Apr 19, 2005	Aug 10, 2010	Jp Morgan Chase Bank	Method and apparatus for managing risk
US7774271	May 8, 2006	Aug 10, 2010	Globys, Inc.	Electronic financial management and analysis system and related methods
US7778923 *	Apr 24, 2007	Aug 17, 2010	Thea Financial Services, Ltd.	Method, system and apparatus for increasing the deposit-based assets of banking institutions subject to fractional-reserve banking
US7783545	Oct 12, 2001	Aug 24, 2010	Accenture Global Services Gmbh	Automated coaching for a financial modeling and counseling system
US7783571	May 31, 2007	Aug 24, 2010	First Data Corporation	ATM system for receiving cash deposits from non- networked clients
US7792717 *	Oct 8, 2004	Sep 7, 2010	Jpmorgan Chase Bank, N.A.	Waterfall prioritized payment processing
US7792749	Dec 13, 2000	Sep 7, 2010	Checkfree Corporation	Dynamic biller list generation
US7809617	Aug 1, 2003	Oct 5, 2010	Checkfree Corporation	Payment processing with selection of a risk reduction technique
US7818233	Nov 1, 2000	Oct 19, 2010	Accenture, Llp	User interface for a financial modeling system
US7822671 *	Mar 27, 2008	Oct 26, 2010	Charles Schwab & Co., Inc.	Method and system for integrating investment advice with financial account statement information
US7822709 *	Jun 22, 2001	Oct 26, 2010	Conssero Plc	Building management
US7831494	Aug 15, 2001	Nov 9, 2010	Accenture Global Services Gmbh	Automated financial portfolio coaching and risk management system
US7831509	Aug 22, 2005	Nov 9, 2010	Jpmorgan Chase Bank, N.A.	On-line higher education financing system
US7844518	Apr 19. 2005	Nov 30. 2010	Jo Morgan Chase Bank	Method and apparatus for managing credit limits

Citing Patent	Filing date	Publication date	Applicant The Western Union	Title Methods and apparatus for mapping sources and uses of
US7849009	Jan 2, 2003	Dec 7, 2010	Company	consumer funds
US7853524	Dec 26, 2001	Dec 14, 2010	Checkfree Corporation	Systems and methods for risk based determination of a form for crediting a payee on behalf of a payer
US7856386	Sep 17, 2009	Dec 21, 2010	Yodlee, Inc.	Host exchange in bill paying services
US7860934 *	Jan 30, 2007	Dec 28, 2010	Intuit Inc.	Method and apparatus for tracking financial transactions for a user
US7881443	May 19, 2003	Feb 1, 2011	Microstrategy, Incorporated	System and method for real-time, personalized, dynamic, interactive voice services for travel availability information
US7890343	Jan 11, 2005	Feb 15, 2011	Jp Morgan Chase Bank	System and method for generating risk management curves
US7895098	Mar 1, 2002	Feb 22, 2011	Jpmorgan Chase Bank, N.A.	System and method for measuring and utilizing pooling analytics
US7908179	Aug 1, 2007	Mar 15, 2011	The Western Union Company	Electronic gift linking
US7917410	Apr 29, 2002	Mar 29, 2011	Nobuyoshi Morimoto	Real-time accounting using wireless traffic control
US7921048	Aug 13, 2001	Apr 5, 2011	Accenture Global Services Gmbh	Financial planning and counseling system projecting user cash flow
US7925578	Aug 26, 2005	Apr 12, 2011	Jpmorgan Chase Bank, N.A.	Systems and methods for performing scoring optimization
US7925583	Nov 23, 2009	Apr 12, 2011	Jpmorgan Chase Bank, N.A.	Method and system for dynamically adjusting discount rates for a card transaction
US7930216	Sep 29, 2006	Apr 19, 2011	The Western Union Company	Method for making an online payment through a payment enabler system
US7930248	Jun 30, 2003	Apr 19, 2011	Checkfree Corporation	Technique for calculating payee specific time to payment completion
US7933826	Jun 28, 2001	Apr 26, 2011	Checkfree Corporation	Check metaphor for electronic payment authorization
US7933835	Jan 17, 2007	Apr 26, 2011	The Western Union Company	Secure money transfer systems and methods using biometric keys associated therewith
US7937292	Sep 30, 2008	May 3, 2011	The Western Union Company	Wide area network person-to-person payment
US7941342	Sep 30, 2008	May 10, 2011	The Western Union Company	Wide area network person-to-person payment
US7941346	Sep 30, 2008	May 10, 2011	The Western Union Company	Wide area network person-to-person payment
US7949520 *	Dec 9, 2005	May 24, 2011	QNX Software Sytems Co.	Adaptive filter pitch extraction
US7949592 *	Sep 16, 2010	May 24, 2011	Charles Schwab & Co., Inc.	Method and system for integrating investment advice with financial account statement information
US7950575	Jan 12, 2010	May 31, 2011	The Western Union Company	Method and system for performing money transfer transactions
US7953660	Mar 30, 2001	May 31, 2011	Checkfree Services Corporation	Method and system for payment processing
US7953662	Jan 7, 2010	May 31, 2011	Citicorp Development Center, Inc.	Global method and system for providing enhanced transactional functionality through a customer terminal
US7953663	Sep 4, 2003	May 31, 2011	Jpmorgan Chase Bank, N.A.	System and method for financial instrument prequalification and offering
US7958050 *	Jul 2, 2007	Jun 7, 2011	Early Warning Services, Llc	Payment account monitoring system and method
US7962391	Nov 14, 2008	Jun 14, 2011	Jpmorgan Chase Bank, N.A.	System and method for determining elegibility and enrolling members in various programs
US7962396	Feb 3, 2006	Jun 14, 2011	Jpmorgan Chase Bank, N.A.	System and method for managing risk
US7970722	Nov 9, 2009	Jun 28, 2011	Aloft Media, Llc	System, method and computer program product for a collaborative decision platform
US7974895	Mar 11, 2005	Jul 5, 2011	Jp Morgan Chase Bank	System and method for developing finance rate information
US7991663	Oct 26, 2007	Aug 2, 2011	United Services Automobile Association (Usaa)	System for volume and stress testing bank debit card processing systems
US7995735	Apr 15, 2004	Aug 9, 2011	Chad Vos	Method and apparatus for managing customer data
US7996310 *	Jul 19, 2000	Aug 9, 2011	Globys, Inc.	Electronic financial management and analysis system and related methods
US7996311	Jan 28, 2009	Aug 9, 2011	Checkfree Corporation	Remittance payment processing with account scheming and/or validation
US8005777	Jul 27, 2010	Aug 23, 2011	Aloft Media, Llc	System, method and computer program product for a collaborative decision platform
US8010424	Aug 1, 2003	Aug 30, 2011	Checkfree Corporation	Payment processing with payee risk management
US8024213	Mar 8, 2000	Sep 20, 2011	Accenture Global Services Limited	System and method and article of manufacture for making financial decisions by balancing goals in a financial manager
US8024229	Sep 30, 2008	Sep 20, 2011	The Western Union Company	Wide area network person-to-person payment
US8024242	Sep 4, 2009	Sep 20, 2011	Metabank	System, method, and program product for foreign currency travel account
US8027891 *	Dec 17, 2008	Sep 27, 2011	Mastercard International, Inc.	Interactive online spending analysis tool
US8027914	Jan 5. 2010	Sep 27, 2011	Jo Morgan Chase Bank	System and method for providing instant-decision,

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			Diebold Self-Service	
US8033453 *	Jul 3, 2006	Oct 11, 2011	Systems, division of Diebold Incorporated	ATMemo
US8051369	May 9, 2005	Nov 1, 2011	Microstrategy, Incorporated	System and method for the creation and automatic deployment of personalized, dynamic and interactive voice services, including deployment through personalized broadcasts
US8055557	Dec 18, 2008	Nov 8, 2011	Metabank	Transfer account systems, computer program products, and associated computer-implemented methods
US8065187	Apr 2, 2009	Nov 22, 2011	Metabank	System, program product, and associated methods to autodraw for micro-credit attached to a prepaid card
US8065250	Feb 11, 2008	Nov 22, 2011	Adaptive Technologies, Inc.	Methods and apparatus for predictive analysis
US8069085	Apr 2, 2009	Nov 29, 2011	Metabank	System, program product, and associated methods to autodraw for micro-credit attached to a prepaid card
US8069407	Sep 7, 2000	Nov 29, 2011	Yodlee.Com, Inc.	Method and apparatus for detecting changes in websites and reporting results to web developers for navigation template repair purposes
US8073772	Jun 5, 2009	Dec 6, 2011	American Express Travel Related Services Company, Inc.	Systems and methods for processing transactions using multiple budgets
US8073773	Mar 27, 2003	Dec 6, 2011	Checkfree Corporation	Technique for identifying probable billers of a consumer
US8078527 *	Jul 23, 2008	Dec 13, 2011	The Western Union Company	Methods and systems for actively optimizing a credit score and managing/reducing debt
US8090649	Mar 19, 2009	Jan 3, 2012	Metabank	Computerized extension of credit to existing demand deposit accounts, prepaid cards and lines of credit based on expected tax refund proceeds, associated systems and computer program products
US8090655	Feb 3, 2011	Jan 3, 2012	American Express Travel Related Services Company, Inc.	System and method for selection of payment systems from a payment system directory to process a transaction
US8094788	Feb 12, 2002	Jan 10, 2012	Microstrategy, Incorporated	System and method for the creation and automatic deployment of personalized, dynamic and interactive voice services with customized message depending on recipient
US8095447 *	Feb 11, 2008	Jan 10, 2012	Adaptive Technologies, Ltd.	Methods and apparatus for self-adaptive, learning data analysis
US8096809	Aug 31, 2001	Jan 17, 2012	Convergys Cmg Utah, Inc.	System and method for automated end-user support
US8103549	Sep 15, 2011	Jan 24, 2012	Metabank	System, program product, and associated methods to autodraw for micro-credit attached to prepaid card
US8108272	Dec 18, 2008	Jan 31, 2012	Metabank	Transfer account systems, computer program products, and computer-implemented methods to prioritize payments from preselected bank account
US8108279	Dec 18, 2008	Jan 31, 2012	Metabank	Computer-implemented methods, program product, and system to enhance banking terms over time
US8108977	Oct 30, 2009	Feb 7, 2012	Metabank	Machine, methods, and program product for electronic order entry
US8109435	Jul 14, 2005	Feb 7, 2012	Early Warning Services, Llc	Identity verification switch
US8121891	Nov 19, 1998	Feb 21, 2012	Accenture Global Services Gmbh	Personalized product report
US8121911	Mar 14, 2008	Feb 21, 2012	Regions Asset Company	Method, computer program product and system for verifying financial data
US8130918	Feb 13, 2002	Mar 6, 2012	Microstrategy, Incorporated	System and method for the creation and automatic deployment of personalized, dynamic and interactive voice services, with closed loop transaction processing
US8135644	Mar 16, 2009	Mar 13, 2012	lgt	Method and apparatus for facilitating monetary and reward transactions and accounting in a gaming environment
US8150682	May 11, 2011	Apr 3, 2012	Qnx Software Systems Limited	Adaptive filter pitch extraction
US8150763	Aug 1, 2006	Apr 3, 2012	The Western Union Company	Systems and methods for staging transactions, payments and collections
US8150764	Apr 2, 2009	Apr 3, 2012	Metabank	System, program product, and method to authorize draw for retailer optimization
US8160988	Jul 27, 2010	Apr 17, 2012	Aloft Media, Llc	System, method and computer program product for a collaborative decision platform
US8165956	Mar 7, 2011	Apr 24, 2012	Checkfree Corporation	Bill availability notification and billing information request
US8170879	Apr 8, 2005	May 1, 2012	Qnx Software Systems Limited	Periodic signal enhancement system
US8170939	Dec 6, 2007	May 1, 2012	Charles Schwab & Co.	Method and system for building and maintenance watch lists
US8170952	Aug 3, 2011	May 1, 2012	Jp Morgan Chase Bank	System and method for providing instant-decision, financial network-based payment cards
US8175962	Sep 18, 2009	May 8, 2012	Metabank	Computerized extension of credit to existing demand deposit accounts, prepaid cards and lines of credit based on expected tax refund proceeds, associated systems and computer program products
US8175972	May 14, 2009	May 8, 2012	Metabank	Pre-paid card transaction computer to load a loan on a ore-paid card

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US8180706	Jun 5, 2009	May 15, 2012	Lead Core Fund, L.L.C.	Systems and methods for maximizing a rewards accumulation strategy during transaction processing
US8190480	Jan 12, 2012	May 29, 2012	Metabank	System, non-transitory memory with computer program, and associated methods for micro-credit to prepaid cards
JS8190514	Jun 5, 2009	May 29, 2012	Lead Core Fund, L.L.C.	Systems and methods for transaction processing based upon an overdraft scenario
JS8190629	Jul 13, 2006	May 29, 2012	Yodlee.Com, Inc.	Network-based bookmark management and web- summary system
US8195565	Jun 5, 2009	Jun 5, 2012	Lead Core Fund, L.L.C.	Systems and methods for point of interaction based policy routing of transactions
US8204830	Apr 21, 2011	Jun 19, 2012	Citicorp Development Center, Inc.	Global method and system for providing enhanced transactional functionality through a customer terminal
US8209514	Apr 17, 2009	Jun 26, 2012	Qnx Software Systems Limited	Media processing system having resource partitioning
US8214286	Dec 19, 2011	Jul 3, 2012	Metabank	Computerized extension of credit to existing demand deposit accounts, prepaid cards and lines of credit based on expected tax refund proceeds, associated systems and computer program products
US8244611	Dec 18, 2008	Aug 14, 2012	Metabank	Private label promotion card system, program product, and associated computer-implemented methods
JS8244632	Jan 2, 2003	Aug 14, 2012	First Data Corporation	Automated transfer with stored value
JS8244637	Feb 3, 2012	Aug 14, 2012	Metabank	Pre-paid card transaction computer to load a loan on a pre-paid card
US8244646	Jun 9, 2009	Aug 14, 2012	Fiserv, Inc.	Systems and methods for determining estimated lead times
US8255307	Jan 18, 2011	Aug 28, 2012	Jpmorgan Chase Bank, N.A.	System and method for measuring and utilizing pooling analytics
US8255326	Jul 6, 2009	Aug 28, 2012	The Western Union Company	Method and apparatus for mapping sources and uses of consumer funds
US8260678	Dec 19, 2011	Sep 4, 2012	Metabank	Machine, methods, and program product for electronic order entry
JS8261334	Apr 25, 2008	Sep 4, 2012	Yodlee Inc.	System for performing web authentication of a user by proxy
JS8266047	Feb 24, 2012	Sep 11, 2012	Metabank	System, method, and program product for foreign currency travel account
US8266048	Feb 28, 2012	Sep 11, 2012	Ndex Systems Inc.	System and method for anonymously matching products or services with a consumer
JS8271382	Sep 29, 2011	Sep 18, 2012	The Western Union Company	Systems and methods of introducing and receiving information across a computer network
JS8271384	Nov 18, 2011	Sep 18, 2012	American Express Travel Related Services Company, Inc.	System and method for selection of payment systems from a payment system directory to process a transaction
US8285625	Aug 18, 2011	Oct 9, 2012	Jpmorgan Chase Bank, N.A.	Synthetic funds having structured notes
JS8286861	Aug 23, 2011	Oct 16, 2012	The Western Union Company	Cash payment for remote transactions
US8286863	Feb 4, 2010	Oct 16, 2012	Metabank	System and computer program product to issue a retail prepaid card including a user-designed external face using a chit and related computer implemented methods
US8290853	Sep 14, 2011	Oct 16, 2012	Metabank	System, method, and program product for foreign currency travel account
US8296227	May 17, 2012	Oct 23, 2012	Metabank	Computerized extension of credit to existing demand deposit accounts, prepaid cards and lines of credit based on expected tax refund proceeds, associated systems and computer program products
US8301557	May 28, 2012	Oct 30, 2012	Metabank	System, program product, and method to authorized draw for retailer optimization
JS8306821	Jun 4, 2007	Nov 6, 2012	Qnx Software Systems Limited	Sub-band periodic signal enhancement system
JS8306912	Dec 18, 2008	Nov 6, 2012	Metabank	Private label promotion card system, program product, and associated computer-implemented methods
US8311926 *	Sep 23, 1999	Nov 13, 2012	The Nasdaq Omx Group, Inc.	Montage for automated market system
US8311927	Apr 30, 2001	Nov 13, 2012	Ndex Systems Inc.	System and method for anonymously matching products or services with a consumer
JS8321411	Feb 11, 2008	Nov 27, 2012	Microstrategy, Incorporated	System and method for management of an automatic OLAP report broadcast system
JS8332288	Aug 31, 2011	Dec 11, 2012	Mastercard International Incorporated	Interactive online spending analysis tool
US8332317	Oct 31, 2002	Dec 11, 2012	Checkfree Corporation	Verification of a financial instrument allowing rules-based pre-acceptance use of the financial instrument
JS8341021	Sep 8, 2010	Dec 25, 2012	Metabank	System, program product, and method for debit card and checking account autodraw
	Sep 14, 2007	Feb 5, 2013	Keefe Commissary Network, L.L.C.	Method, medium, and system for an inmate privilege kiosk
JS8370206 *			L.L.O.	RIOSK

Citing Patent	Filing date	Publication date	Applicant	Title
US8384925 *	Jul 29, 2005	Feb 26, 2013	Sharp Laboratories Of America, Inc.	Methods and systems for imaging device accounting data management
US8386375	Feb 24, 2012	Feb 26, 2013	Metabank	System, method, and program product for foreign currency travel account
US8392299	Oct 26, 2011	Mar 5, 2013	Metabank	Transfer account systems, computer program products, and associated computer-implemented methods
US8392330	Oct 28, 2011	Mar 5, 2013	Metabank	Transfer account systems, computer program products, and computer-implemented methods to prioritize payments from preselected bank account
US8403211	Sep 4, 2009	Mar 26, 2013	Metabank	System, program product and methods for retail activation and reload associated with partial authorization transactions
US8407100	Aug 31, 2012	Mar 26, 2013	Metabank	Machine, methods, and program product for electronic order entry
US8407137 *	Mar 1, 2010	Mar 26, 2013	Propulsion Remote Holdings, Llc	Pay yourself first with user guidance
US8416941	Apr 15, 2011	Apr 9, 2013	Convergys Customer Management Group Inc.	Method and apparatus for managing customer data
US8417627	Dec 12, 2011	Apr 9, 2013	The Western Union Company	Methods and systems for actively optimizing a credit score and managing/reducing debt
US8429006	Jun 18, 2004	Apr 23, 2013	Jpmorgan Chase Bank, N.A.	System and method for offer targeting
US8433659	Jul 20, 2012	Apr 30, 2013	Fisery, Inc.	Systems and methods for determining estimated lead
US8438109	Dec 15, 2011	May 7, 2013	Plati Networking, Llc	times System and method for selection of payment systems
US8452662	Sep 15, 2011	May 28, 2013	Metabank	from a payment system directory to process a transaction System, program product, and associated methods to
US8452687	Jul 31, 2002	May 28, 2013	lgt	autodraw for micro-credit attached to prepaid card Method and apparatus for facilitating and monitoring monetary transactions and rewards in a gaming environment
US8463702	Jul 26, 2011	Jun 11, 2013	Moneygram International, Inc.	Global compliance processing system for a money transfer system
US8464159	Oct 27, 2009	Jun 11, 2013	Net-Express, Ltd.	Personalized internet interaction
US8473377 *	Feb 29, 2008	Jun 25, 2013	Accenture Global Services	Data management system
US8473380	Aug 2, 2004	Jun 25, 2013	Propulsion Remote Holdings, Llc	Pay yourself first budgeting
US8478637	Apr 8, 2008	Jul 2, 2013	Jpmorgan Chase Bank, N.A.	Index for assessing discount potential
US8484046	Dec 15, 2010	Jul 9, 2013	Progressive Casualty Insurance Company	Method and apparatus for internet on-line insurance policy service
US8485441	Jun 28, 2012	Jul 16, 2013	Metabank	System and computer program product to issue a retail prepaid card including a user-designed external face using a chit and related computer implemented methods
US8489497	Jan 27, 2006	Jul 16, 2013	Jpmorgan Chase Bank, N.A.	Online interactive and partner-enhanced credit card
US8494956	Nov 21, 2005	Jul 23, 2013	The Western Union	Internet funds transfer system using ATM pickup
US8494960	May 13, 2009	Jul 23, 2013	Company Metabank	System, program product, and computer-implemented
036494960	Way 13, 2009	Jul 23, 2013		method for loading a loan on a pre-paid card
US8504473	Mar 28, 2007	Aug 6, 2013	The Western Union Company	Money transfer system and messaging system
US8515874	Aug 24, 2006	Aug 20, 2013	The Western Union Company	Airline ticket payment and reservation system and methods
US8527433	Apr 28, 2010	Sep 3, 2013	Genetic Finance (Barbados) Limited	Distributed evolutionary algorithm for asset management and trading
US8533030	Aug 30, 2004	Sep 10, 2013	Jpmorgan Chase Bank, N.A.	In-bound telemarketing system for processing customer offers
US8538874	May 24, 2004	Sep 17, 2013	Propulsion Remote Holdings, Llc	Pay yourself first with auto bill pay system and method
US8538879	May 13, 2009	Sep 17, 2013	Metabank	System, program product, and computer-implemented method for loading a loan on an existing pre-paid card
US8543280	Apr 29, 2011	Sep 24, 2013	Toyota Motor Engineering & Manufacturing North America, Inc.	Collaborative multi-agent vehicle fault diagnostic system and associated methodology
US8543390	Aug 31, 2007	Sep 24, 2013	Qnx Software Systems Limited	Multi-channel periodic signal enhancement system
US8543982	Jun 22, 2007	Sep 24, 2013	Citicorp Development Center, Inc.	Delivering financial services to remote devices
US8554843	Sep 5, 2003	Oct 8, 2013	Dell Marketing Usa L.P.	Method and system for processing email during an unplanned outage
US8555359	Feb 26, 2009	Oct 8, 2013	Yodlee, Inc.	System and methods for automatically accessing a web site on behalf of a client
US8560425	Dec 10, 2002	Oct 15, 2013	Jpmorgan Chase Bank, N.A.	Method and system for adding liquidity to alternative investment transactions
US8566928	Oct 3, 2006	Oct 22, 2013	Georgia Tech Research Corporation	Method and system for detecting and responding to attacking networks
030300920				

Citing Patent	Filing date	Publication date	Applicant	Title
US8577801	Dec 15, 2011	Nov 5, 2013	Plati Networking, Llc	System and method for selection of payment systems from a payment system directory to process a transaction
US8578497	Jan 5, 2011	Nov 5, 2013	Damballa, Inc.	Method and system for detecting malware
US8583515 *	Dec 18, 2008	Nov 12, 2013	Metabank	Transfer account systems, computer program products, and associated computer-implemented methods
US8584934	Oct 8, 2012	Nov 19, 2013	The Western Union Company	Cash payment for remote transactions
US8589295	Dec 18, 2008	Nov 19, 2013	Metabank	Transfer account systems, computer program products, and associated computer-implemented methods
US8596527	Jan 13, 2009	Dec 3, 2013	Lead Core Fund, L.L.C.	Methods for locating a payment system utilizing a point of sale device
US8607138	Jul 15, 2005	Dec 10, 2013	Microstrategy, Incorporated	System and method for OLAP report generation with spreadsheet report within the network user interface
US8612342	May 31, 2005	Dec 17, 2013	Checkfree Corporation	Notification of the availability of electronic bills
US8620782	Aug 31, 2009	Dec 31, 2013	Checkfree Services Corporation	Inter-network electronic billing
US8630946 *	Nov 14, 2002	Jan 14, 2014	The Western Union Company	Systems and methods for providing individualized financial access
US8631489	Jan 25, 2012	Jan 14, 2014	Damballa, Inc.	Method and system for detecting malicious domain names at an upper DNS hierarchy
US8636515	Dec 9, 2011	Jan 28, 2014	Convergys Customer Management Group Inc.	System and method for automated end-user support
US8645214	Aug 28, 2012	Feb 4, 2014	Brink's Network, Inc.	System for and process of facilitating financial transactions at point-of-sale employing electronic drop safes and point-of-sale terminals
US8646685	Jan 13, 2009	Feb 11, 2014	Lead Core Fund, L.L.C.	Device for allocating a payment authorization request to a payment processor
US8657688	Nov 26, 2012	Feb 25, 2014	Moneygram International, Inc.	Promotion generation engine for a money transfer system
US8660929	Apr 6, 2012	Feb 25, 2014	Charles Schwab & Co.	Method and system for building and maintenance watch lists
US8661094	Dec 8, 2008	Feb 25, 2014	Net-Express Ltd.	WWW addressing
US8666855 *	Jun 30, 2003	Mar 4, 2014	Plati Networking, Llc	System and method for a payment system directory
US8672220	Sep 30, 2005	Mar 18, 2014	The Western Union Company	Money transfer system and method
US8694310	Mar 27, 2008	Apr 8, 2014	Qnx Software Systems Limited	Remote control server protocol system
US8706640	Jul 17, 2006	Apr 22, 2014	The Western Union Company	Systems and methods for enrolling consumers in goods and services
US8712795	Sep 14, 2012	Apr 29, 2014	Progressive Casualty Insurance Company	Method and apparatus for internet on-line insurance policy service
US8719078	May 29, 2013	May 6, 2014	Jpmorgan Chase Bank, N.A.	Index for assessing discount potential
US8719161	Dec 15, 2011	May 6, 2014	Plati Networking, Llc	System and method for selection of payment systems from a payment system directory to process a transaction
US8732073	Aug 6, 2010	May 20, 2014	Propulsion Remote Holdings, Llc	Pay yourself first with revenue generation
US8738451	Apr 2, 2009	May 27, 2014	Metabank	System, program product, and method for debit card and checking account autodraw
US8738520	Apr 23, 2012	May 27, 2014	Moneygram International, Inc.	Send and receive side control of money transfer parameters
US8744915	Sep 8, 2010	Jun 3, 2014	Metabank	System, program product, and method for debit card and checking account autodraw
US8751391	Mar 31, 2003	Jun 10, 2014	Jpmorgan Chase Bank, N.A.	System and process for performing purchase transactions using tokens
US8762260	Aug 14, 2012	Jun 24, 2014	Jpmorgan Chase Bank, N.A.	Systems and methods for performing scoring optimization
US8762267	Jun 19, 2013	Jun 24, 2014	The Western Union Company	Money transfer system and messaging system
US8768811 *	Apr 28, 2010	Jul 1, 2014	Genetic Finance (Barbados) Limited	Class-based distributed evolutionary algorithm for asset management and trading
US8781959	Feb 23, 2011	Jul 15, 2014	Checkfree Corporation	Systems and methods for generating payment due notifications
US8788278	Aug 28, 2007	Jul 22, 2014	Moneygram International, Inc.	Consumer database loyalty program for a money transfer system
US8788414	Dec 18, 2008	Jul 22, 2014	Metabank	Transfer account systems, computer program products, and computer-implemented methods to prioritize payments from preselected bank account
US8788417	Dec 15, 2011	Jul 22, 2014	Plati Networking, Llc	System and method for selection of payment systems from a payment system directory to process a transaction
US8794509	Jan 13, 2009	Aug 5, 2014	Lead Core Fund, L.L.C.	Systems and methods for processing a payment authorization request over disparate payment networks
US8814039	Jan 13, 2009	Aug 26, 2014	Lead Core Fund, L.L.C.	Methods for processing a payment authorization request utilizing a network of point of sale devices
US8818887	Dec 18, 2008	Aug 26, 2014	Metabank	Computer-implemented methods, program product, and system for micro-loan product management

Citing Patent	Filing date	Publication date	Applicant	Title
US8820633	Jan 13, 2009	Sep 2, 2014	Lead Core Fund, L.L.C.	Methods for a third party biller to receive an allocated payment authorization request
US8825560	May 15, 2013	Sep 2, 2014	Genetic Finance (Barbados) Limited	Distributed evolutionary algorithm for asset management and trading
JS8826438	Jan 18, 2011	Sep 2, 2014	Damballa, Inc.	Method and system for network-based detecting of malware from behavioral clustering
JS8839144 *	Dec 29, 2010	Sep 16, 2014	Sap Ag	Add and combine reports
JS8850154	Sep 9, 2008	Sep 30, 2014	2236008 Ontario Inc.	Processing system having memory partitioning
JS8851369	Jul 17, 2009	Oct 7, 2014	Lead Core Fund, L.L.C.	Systems and methods for transaction processing using a smartcard
JS8851371	May 17, 2013	Oct 7, 2014	The Western Union Company	In-lane money transfer systems and methods
JS8874480	Jun 4, 2012	Oct 28, 2014	Fiserv, Inc.	Centralized payment method and system for online and offline transactions
US8875990	Jan 13, 2009	Nov 4, 2014	Lead Core Fund, L.L.C.	Systems and methods for allocating a payment authorization request to a payment processor
JS8904400	Feb 4, 2008	Dec 2, 2014	2236008 Ontario Inc.	Processing system having a partitioning component for resource partitioning
US8909570	Jul 15, 2011	Dec 9, 2014	Genetic Finance (Barbados) Limited	Data mining technique with experience-layered gene pool
US8918349	Aug 29, 2013	Dec 23, 2014	Genetic Finance (Barbados) Limited	Distributed network for performing complex algorithms
US8955741	May 18, 2009	Feb 17, 2015	The Western Union Company	Money transfer systems and methods for travelers
JS8960537	Nov 21, 2012	Feb 24, 2015	The Western Union Company	Money transfer systems and methods
JS8977581	Jul 2, 2012	Mar 10, 2015	Sentient Technologies (Barbados) Limited	Data mining technique with diversity promotion
US8995628	Mar 6, 2012	Mar 31, 2015	Microstrategy, Incorporated	System and method for the creation and automatic deployment of personalized, dynamic and interactive voice services with closed loop transaction processing
US9098849	Oct 4, 2013	Aug 4, 2015	The Western Union Company	Cash payment for remote transactions
JS9122575	Aug 1, 2014	Sep 1, 2015	2236008 Ontario Inc.	Processing system having memory partitioning
JS9123044	Jun 29, 2014	Sep 1, 2015	The Western Union Company	Generation systems and methods for transaction identifiers having biometric keys associated therewith
JS9129279	Sep 6, 2013	Sep 8, 2015	Citicorp Credit Services, Inc. (Usa)	Delivering financial services to remote devices
JS9129464	Aug 1, 2006	Sep 8, 2015	The Western Union Company	Staged transactions systems and methods
JS9166994	Aug 30, 2013	Oct 20, 2015	Damballa, Inc.	Automation discovery to identify malicious activity
JS9208213	Oct 14, 2005	Dec 8, 2015	Microstrategy, Incorporated	System and method for network user interface OLAP report formatting
JS9213965	Nov 25, 2009	Dec 15, 2015	Metabank	Machine, methods, and program product for electronic inventory tracking
JS9213976 *	Jul 4, 2013	Dec 15, 2015	Ubiquity Broadcasting Corporation	Multi application smartcard with currency exchange, location, tracking and personal identification capabilities
JS9215421	May 30, 2008	Dec 15, 2015	Avaya Inc.	Open cable application platform (OCAP) and set-top box (STB)-based bill notification and payment application
JS9251511	Oct 8, 2013	Feb 2, 2016	Metabank	Transfer account systems, computer program products, and associated computer-implemented methods
JS9304895	Jul 18, 2013	Apr 5, 2016	Sentient Technologies (Barbados) Limited	Evolutionary technique with n-pool evolution
JS9306969	Aug 30, 2013	Apr 5, 2016	Georgia Tech Research Corporation	Method and systems for detecting compromised networks and/or computers
JS9367816	Jul 16, 2013	Jun 14, 2016	Sentient Technologies (Barbados) Limited	Data mining technique with induced environmental alteration
JS9384476	Mar 17, 2014	Jul 5, 2016	The Western Union Company	Money transfer system and method
JS9443268	Jan 27, 2014	Sep 13, 2016	Consumerinfo.Com, Inc.	Bill payment and reporting
JS9449346	Jul 2, 2015	Sep 20, 2016	Plaid Technologies, Inc.	System and method for programmatically accessing financial data
JS9456346	Mar 5, 2015	Sep 27, 2016	Virginia Innovation Science, Inc	Method and system for improving client server transmission over fading channel with wireless location and authentication technology via electromagnetic radiation
US9477740	Nov 26, 2012	Oct 25, 2016	Microstrategy, Incorporated	System and method for management of an automatic OLAP report broadcast system
JS9495705	Sep 24, 2014	Nov 15, 2016	Brink's Network, Inc.	Process of and system for facilitating cash collections deposits and deposit tracking
US9508067	Mar 25, 2013	Nov 29, 2016	Metabank	System, program product and methods for retail activation and reload associated with partial authorization transactions

Citing Patent	Filing date	Publication date	Applicant	Title
JS9569755	Feb 17, 2012	Feb 14, 2017	Elizabeth Rose Dyor	Financial management system
JS9595023	Jul 2, 2015	Mar 14, 2017	Plaid Technologies, Inc.	System and method for facilitating programmatic verification of transactions
JS9626664	Jan 7, 2013	Apr 18, 2017	Clearxchange, Llc	System and method for transferring funds
JS9659326	Nov 11, 2011	May 23, 2017	Collections Marketing Center, Inc.	System and method for debt presentment and resolution
JS9665855	Nov 4, 2013	May 30, 2017	Metabank	Machine, methods, and program product for electronic inventory tracking
JS9680861	Aug 30, 2013	Jun 13, 2017	Damballa, Inc.	Historical analysis to identify malicious activity
JS9684875	Nov 12, 2014	Jun 20, 2017	Sentient Technologies (Barbados) Limited	Data mining technique with experience-layered gene pool
JS9686291	Dec 4, 2013	Jun 20, 2017	Damballa, Inc.	Method and system for detecting malicious domain names at an upper DNS hierarchy
JS9691056	Jan 7, 2013	Jun 27, 2017	Clearxchange, Llc	System and method for transferring funds
JS9710764	Mar 13, 2014	Jul 18, 2017	Sentient Technologies (Barbados) Limited	Data mining technique with position labeling
JS9734215	Jun 10, 2016	Aug 15, 2017	Sentient Technologies (Barbados) Limited	Data mining technique with experience-layered gene pool
JS9751006	Feb 4, 2014	Sep 5, 2017	Moneygram International, Inc.	Promotion generation engine for a money transfer system
JS9767451	Jul 12, 2013	Sep 19, 2017	Metabank	System and computer program product to issue a retail prepaid card including a user-designed external face using a chit and related computer implemented methods
JS9773067 *	Oct 8, 2014	Sep 26, 2017	Microsoft Technology Licensing, Llc	Personal intelligence platform
JS9785922	Apr 19, 2012	Oct 10, 2017	Metabank	Machine, methods, and program product for electronic inventory tracking
JS20010000541 *	Dec 5, 2000	Apr 26, 2001	Daniel Schreiber	Copyright protection of digital images transmitted over networks
JS20010027420 *	Dec 21, 2000	Oct 4, 2001	Miroslav Boublik	Method and apparatus for capturing transaction data
JS20010029477 *	May 21, 2001	Oct 11, 2001	Chase Manhattan Bank	Method for mortgage and closed end loan portfolio management
S20010029582 *	Jan 29, 2001	Oct 11, 2001	Goodman Daniel Isaac	Method and system for copy protection of data content
S20010044739 *	Dec 19, 2000	Nov 22, 2001	Ndex Systems Inc.	System and method for creating a true customer profile
S20010044776 *	Jun 11, 2001	Nov 22, 2001	Checkfree Corporation	Bill payment system and method with merchant information
JS20010054022 *	Mar 21, 2001	Dec 20, 2001	Louie Edmund H.	Syndication loan administration and processing system
IS20020002535 *	Mar 30, 2001	Jan 3, 2002	Checkfree Corporation	Electronic bill processing with multi-level bill information storage
JS20020013768 *	Dec 13, 2000	Jan 31, 2002	Checkfree Services Corporation	Dynamic biller list generation
JS20020019809 *	Jun 28, 2001	Feb 14, 2002	Checkfree Corporation	Check metaphor for electronic payment authorization
JS20020039921 *	Sep 27, 2001	Apr 4, 2002	Rick Rowe	Method and apparatus for monitoring player loss in a gaming environment
JS20020046157 *	Dec 3, 2001	Apr 18, 2002	Neal Solomon	System, method and apparatus for demand-initiated intelligent negotiation agents in a distributed network
JS20020046165 *	Mar 30, 2001	Apr 18, 2002	Checkfree Corporation	Electronic bill presentment with bill categorization
S20020046167 *	May 31, 2001	Apr 18, 2002	Checkfree Corporation	Electronic bill presentation with terms and conditions link
S20020046168 *	Jun 28, 2001	Apr 18, 2002	Checkfree Corporation	Electronic bill presentment interface
JS20020052825 *	Apr 30, 2001	May 2, 2002	Ndex Systems Inc.	System and method for anonymously matching products or services with a consumer
JS20020055903 *	Dec 3, 2001	May 9, 2002	Neal Solomon	System, method, and apparatus for a cooperative communications network
JS20020062282 *	Dec 26, 2001	May 23, 2002	Checkfree Corporation	Risk based payment method and system
JS20020069134 *	Dec 3, 2001	Jun 6, 2002	Neal Solomon	System, method and apparatus for aggregation of cooperative intelligent agents for procurement in a distributed network
JS20020073023 *	Dec 7, 2001	Jun 13, 2002	Garry Castro	Method and system for interactively delivering business chamber resources via a remote computer network
JS20020077918 *	Dec 14, 2000	Jun 20, 2002	Guy Lerner	System & method for purchasing goods or services via the internet
JS20020078343 *	Nov 28, 2001	Jun 20, 2002	Moshe Rubin	Method and system for copy protection of displayed data content
JS20020082994 *	Oct 2, 2001	Jun 27, 2002	Efunds Corporation	Method and apparatus for managing automated banking machines
JS20020087461 *	Dec 28, 2000	Jul 4, 2002	Ravi Ganesan	Technique for electronic funds escrow
	DCC 20, 2000		First Data Corporation	Method and system for electronic transfer of funds implementing an automated teller machine in conjunction
	Dec 28, 2000	Jul 4, 2002	p	with a manned kiosk
S20020087462 *	Dec 28, 2000 Dec 28, 2000	Jul 4, 2002 Jul 4, 2002	Ravi Ganesan	with a manned kiosk Electronic payment risk processing
JS20020087462 * JS20020087468 * JS20020087471 *			·	
JS20020087462 * JS20020087468 *	Dec 28, 2000	Jul 4, 2002	Ravi Ganesan	Electronic payment risk processing

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JS20020146668 *	Aug 31, 2001	Oct 10, 2002	Burgin Daniel Keele	System and method for automated end-user support
JS20020147669 *	Jun 1, 2001	Oct 10, 2002	Taylor James W.	System and method for offering a financial product
JS20020147671 *	Aug 15, 2001	Oct 10, 2002	Sloan Ronald E.	Financial portfolio risk management
JS20020147848 *	Aug 31, 2001	Oct 10, 2002	Burgin Daniel Keele	System and method for enabling communication between browser frames
JS20020151359 *	Mar 14, 2002	Oct 17, 2002	Richard Rowe	Player account access and management system
JS20020152161 *	Mar 11, 2002	Oct 17, 2002	Fujitsu Limited	Credit transfer method for a computer network capable of transferring amounts of money to a plurality of bank accounts in order of respective priorities
JS20020173986 *	Jun 24, 2002	Nov 21, 2002	Microsoft Corporation	Automatic categorization of financial transactions
JS20020188558 *	Apr 29, 2002	Dec 12, 2002	Nobuyoshi Morimoto	Real-time accounting using wireless traffic control
JS20030004871 *	Jul 31, 2002	Jan 2, 2003	Rick Rowe	Method and apparatus for facilitating and monitoring monetary transactions and rewards in a gaming environment
JS20030040995 *	Aug 23, 2001	Feb 27, 2003	Daddario Donato V.	Benefit provider system and method
JS20030061132 *	Sep 26, 2001	Mar 27, 2003	Yu, Mason K.	System and method for categorizing, aggregating and
JS20030061132 JS20030069856 *	Oct 10, 2001	Apr 10, 2003	First Data Corporation	analyzing payment transactions data Method and system for performing money transfer
7320030009030	OCt 10, 2001	Apr 10, 2003	That Data Corporation	transactions
JS20030071117 *	Oct 16, 2001	Apr 17, 2003	Meade William K.	System and method for determining priority among multiple mobile computing devices to control an appliance
JS20030073411 *	Oct 16, 2001	Apr 17, 2003	Meade William K.	System and method for automatically applying a user preference from a mobile computing device to an appliance
JS20030073412 *	Oct 16, 2001	Apr 17, 2003	Meade William K.	System and method for a mobile computing device to control appliances
JS20030073432 *	Oct 16, 2001	Apr 17, 2003	Meade, William K.	Mobile computing device with method and system for interrupting content performance among appliances
JS20030074301 *	Dec 3, 2001	Apr 17, 2003	Neal Solomon	System, method, and apparatus for an intelligent search agent to access data in a distributed network
JS20030083987 *	Nov 7, 2002	May 1, 2003	First Data Corporation	Method and system for performing money transfer transactions
JS20030084188 *	Oct 30, 2001	May 1, 2003	Dreyer Hans Daniel	Multiple mode input and output
JS20030126067 *	Nov 7, 2002	Jul 3, 2003	First Data Corporation	Systems and methods for price matching on funds transfers
JS20030130916 *	Apr 19, 2002	Jul 10, 2003	American Express Financial Advisors, Inc.	System and method for facilitating investment account transfers
JS20030130920 *	Dec 10, 2002	Jul 10, 2003	Freund Peter C.	Method and system for adding liquidity to alternative investment transactions
JS20030144936 *	Oct 12, 2001	Jul 31, 2003	Sloan Ronald E.	Automated coaching for a financial modeling and counseling system
JS20030144957 *	Mar 6, 2003	Jul 31, 2003	Skinner James Jay	Account transaction notification system
JS20030151622 *	Nov 25, 2002	Aug 14, 2003	Henry Wolfond	Method and apparatus for automated transaction processing
JS20030172087 *	Jun 22, 2001	Sep 11, 2003	Godwin Adrian Michael	Building management
JS20030182240 *	Mar 29, 2001	Sep 25, 2003	Toshihiko Eda	Factoring mediating system
JS20030208427 *	Dec 13, 2000	Nov 6, 2003	Dirk Peters	Automated investment advisory software and method
JS20030208445 *	Dec 13, 2000	Nov 6, 2003	Craig Compiano	Method and apparatus for mapping sources and uses of consumer funds
JS20030212615 *	May 8, 2002	Nov 13, 2003	Regions Financial Corporation	Method, computer program product and system for verifying financial data
JS20030216990 *	Jun 16, 2003	Nov 20, 2003	Onecore Financial Network, Inc.	Systems and methods for performing integrated financial transactions
JS20030220870 *	May 22, 2002	Nov 27, 2003	Afshin Bayrooti	Visual editor system and method for specifying a financial transaction
JS20030233299 *	Jun 17, 2002	Dec 18, 2003	Davis Dara S.	System and method for classifying a financial transaction
JS20030236728 *	Mar 28, 2003	Dec 25, 2003	Amir Sunderji	Method and apparatus for managing a financial transaction system
JS20040010466 *	Jul 11, 2002	Jan 15, 2004	Anderson David F.	Financial instrument system providing multiple transaction information reporting and storing options and fraud and warranty protection
JS20040019559 *	Jul 26, 2002	Jan 29, 2004	Peter Moenickheim	Technique for self-enrollment in an electronic commerce service
JS20040019561 *	May 7, 2003	Jan 29, 2004	Gabriela Isturiz	Electronic billing system utilizing a universal billing forma data transmission
JS20040019568 *	Jul 29, 2002	Jan 29, 2004	Checkfree Services Corporation	Technique for account authentication
JS20040019605 *	Jul 26, 2002	Jan 29, 2004	Blake Keown	Techinque for accessing an electronic payee database
JS20040024671 *	Jun 3, 2003	Feb 5, 2004	Freund Peter C.	Synthetic funds having structured notes
JS20040039695 *	Aug 29, 2003	Feb 26, 2004	Rick Rowe	Method and apparatus for facilitating monetary and reward transactions and accounting in a gaming environment

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JS20040049457 *	May 23, 2003	Mar 11, 2004	Garrison David Lee	Payment remittance processing when account scheming fails
JS20040049473 *	Sep 5, 2002	Mar 11, 2004	David John Gower	Information analytics systems and methods
S20040054610 *	Nov 26, 2002	Mar 18, 2004	Monetaire	Monetaire wealth management platform
JS20040059673 *	Jun 25, 2003	Mar 25, 2004	Bill Kitchen	Dual mode electronic bill availability noticing and payment
JS20040064409 *	Jun 30, 2003	Apr 1, 2004	Kight Peter J.	System and method for bill delivery and payment over a communications network
JS20040073443 *	Jun 10, 2003	Apr 15, 2004	Gabrick John J.	System for automating and managing an IP environment
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* Cited by examiner				Table 1 and Fam. 6. Gale (animals)

CLASSIFICATIONS

U.S. Classification 705/42, 705/33

International Classification G06Q40/00, G06Q20/00, G06Q20/10, G06Q20/18

Cooperative Classification G06Q40/128, G06Q20/108, G06Q20/10, G06Q40/02, G06Q20/18

European Classification G06Q20/10, G06Q20/18, G06Q40/02, G06Q40/108, G06Q20/108

LEGAL EVENTS

Date	Code	Event	Description
May 14, 1998	AS	Assignment	Owner name: CITIBANK N.A., NEW YORK Free format text: (ASSIGNMENT OF ASSIGNOR S INTEREST) RE-RECORD TO CORRECT THE NUMBER OF MICROFILM PAGES FROM 3 TO 5 AT REEL 9183, FRAME 0620.;ASSIGNORS:SCHUTZER, DANIEL;FORSTER, WILLIAM HULL JR.;HU, HUANRUI;AND OTHERS;REEL/FRAME:009400/0491;SIGNING DATES FROM 19980409 TO 19980511 Owner name: CITIBANK, N.A., NEW YORK Free format text: ASSIGNMENT OF ASSIGNORS INTEREST;ASSIGNORS:SCHULTZER, DANIEL, ET AL;FORSTERM WILLIAM HULL JR.;HU, HUANRUI;AND OTHERS;REEL/FRAME:009183 /0620;SIGNING DATES FROM 19980409 TO 19980511
Jan 2, 2003	FPAY	Fee payment	Year of fee payment: 4
Jan 22, 2003	REMI	Maintenance fee reminder mailed	

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Date	Code	Event	Description
Dec 2, 2010	FPAY	Fee payment	Year of fee payment: 12

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