(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2021/0256516 A1**
Garrett (43) **Pub. Date:** **Aug. 19, 2021**

(54) **COMPUTER-BASED SYSTEM AND METHOD FOR TARGETING FINANCIAL GOALS VIA ELECTRONIC CODE OR COUPON AUCTIONS**

(71) Applicant: **Peter Garrett**, Mill Valley, CA (US)

(72) Inventor: **Peter Garrett**, Mill Valley, CA (US)

(21) Appl. No.: **17/156,389**
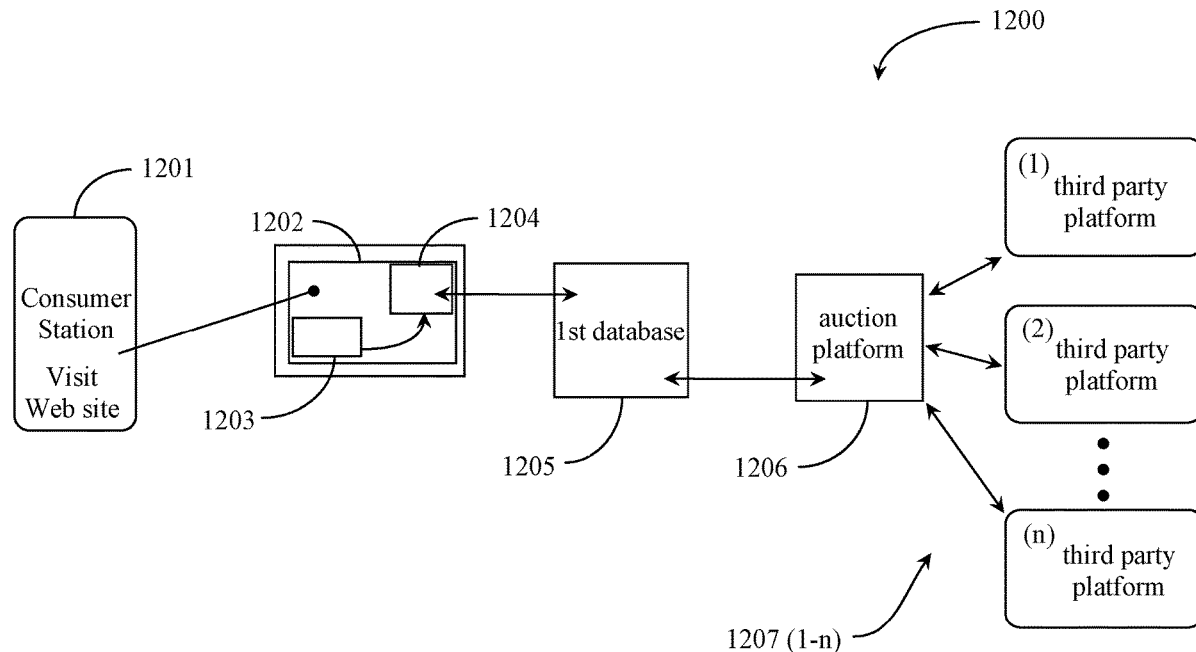
(22) Filed: **Jan. 22, 2021**

Related U.S. Application Data

(60) Provisional application No. 62/977,651, filed on Feb. 17, 2020, provisional application No. 62/991,835, filed on Mar. 19, 2020.

Publication Classification

(51) **Int. Cl.**
G06Q 20/40	(2006.01)
G06Q 20/42	(2006.01)
G06Q 20/38	(2006.01)
G06Q 20/02	(2006.01)
G06Q 30/02	(2006.01)

(52) **U.S. Cl.**
CPC *G06Q 20/401* (2013.01); *G06Q 20/425* (2013.01); *G06Q 30/0207* (2013.01); *G06Q 20/02* (2013.01); *G06Q 20/3829* (2013.01)

(57) **ABSTRACT**

A financial transaction network includes a first and second server platforms connected to the network the first server holding and managing a consumers financial account data and functioning to advance financial goals set by the consumer via communication with the second server functioning as an auction platform the first server including a server interface distributed over the network to authorized connected computing appliances the server interface functioning as a communications bridge between the auction platform and the first server when the consumer is transacting. The server interface invoked by the consumer visiting a Web page to channel winning coupon or coupon codes from providers at auction selected by the consumer to transact with the first server, the first server directing the activity based on financial goals set by the consumer for accounts and rules-based execution commands or routines associated with the goals of those accounts.
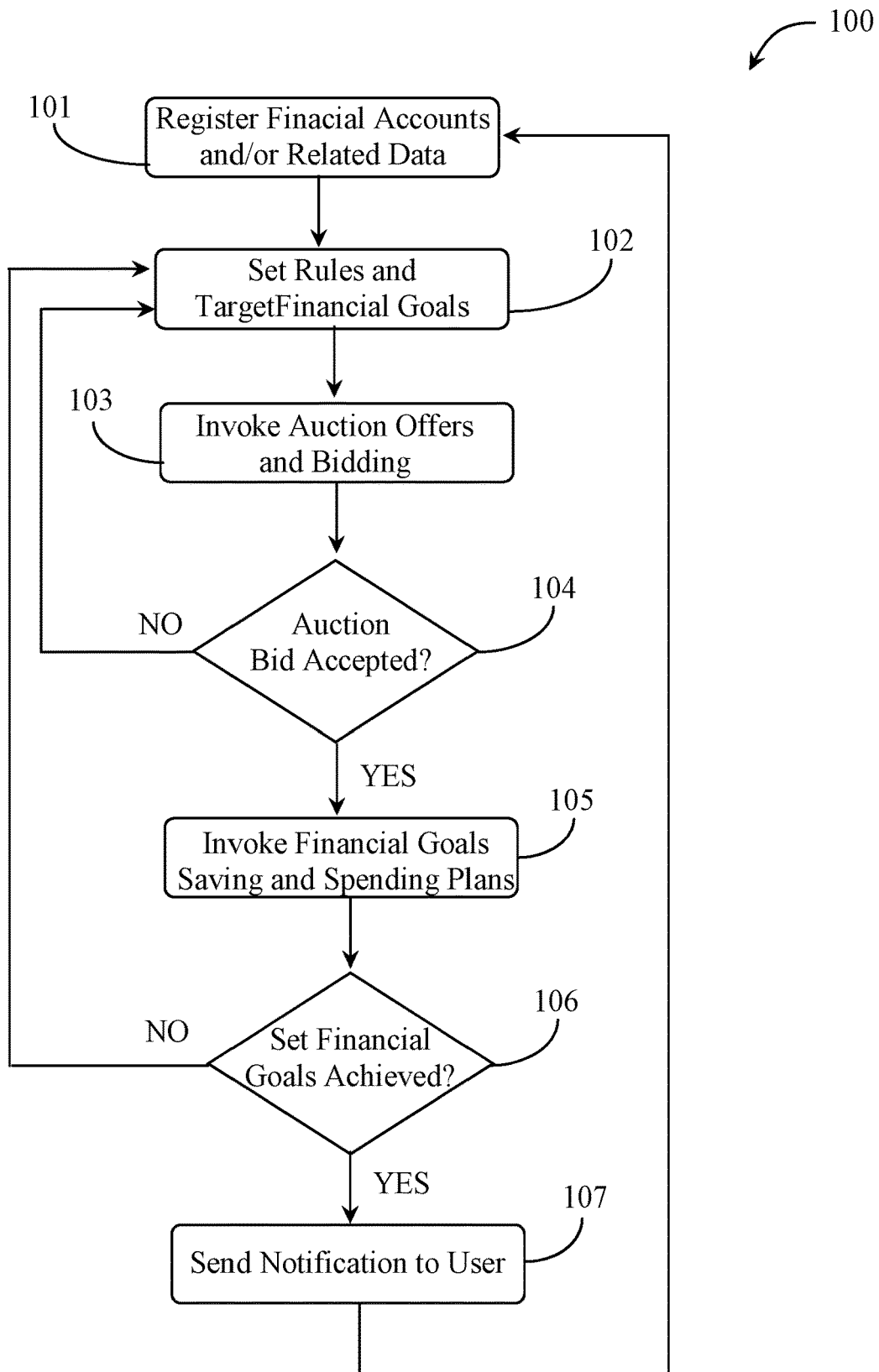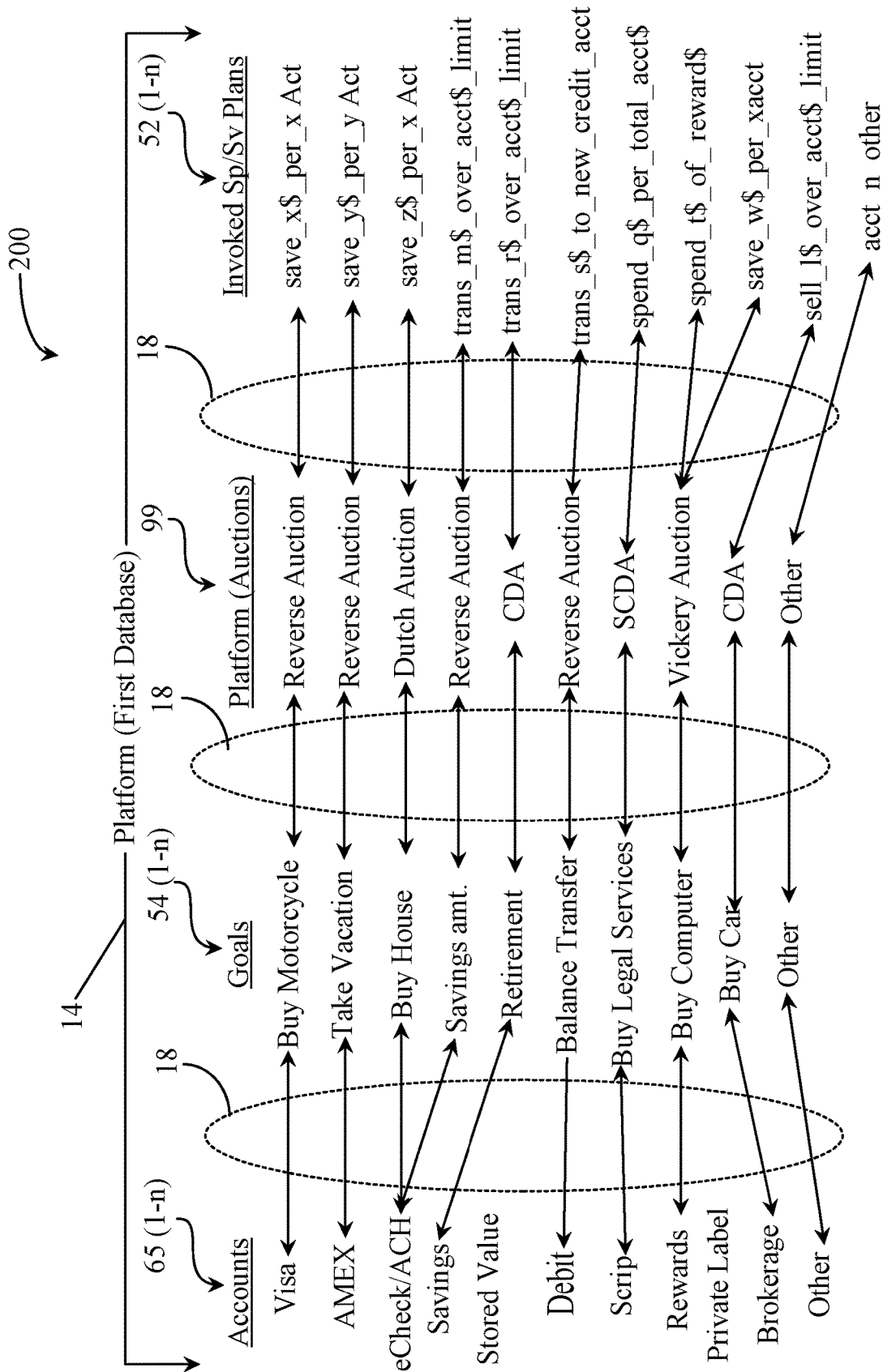
100

101

Register Finacial Accounts
and/or Related Data

Set Rules and
TargetFinancial Goals

102

103

Invoke Auction Offers
and Bidding

NO   Auction
Bid Accepted?

104

YES

Invoke Financial Goals
Saving and Spending Plans

105

NO   Set Financial
Goals Achieved?

106

YES

Send Notification to User

107

Fig. 1

Fig. 2

300

Data Platform

67

15

Registery (User A)

65

Financial Account #1 (Consumer A)

Pattern Data   54

Tgt-Goal $Amt
Tgt-Goal TTL
Set Tx $ Amt
% Tx $ Amt
FIN acct NUM
Find acct NUM
Graphic
n pattern data

Exe Commands

Auct Notify
Opportuities
Inv Auct
Inv Acct
Prog Notify
Target Goal
n Exe Comm

52

50

Rules Base

Rules Base

65

Financial Account #n (Consumer A)

Pattern Data   54

Tgt-Goal $Amt
Tgt-Goal TTL
Set Tx $ Amt
% Tx $ Amt
FIN acct NUM
Find acct NUM
Graphic
n pattern data
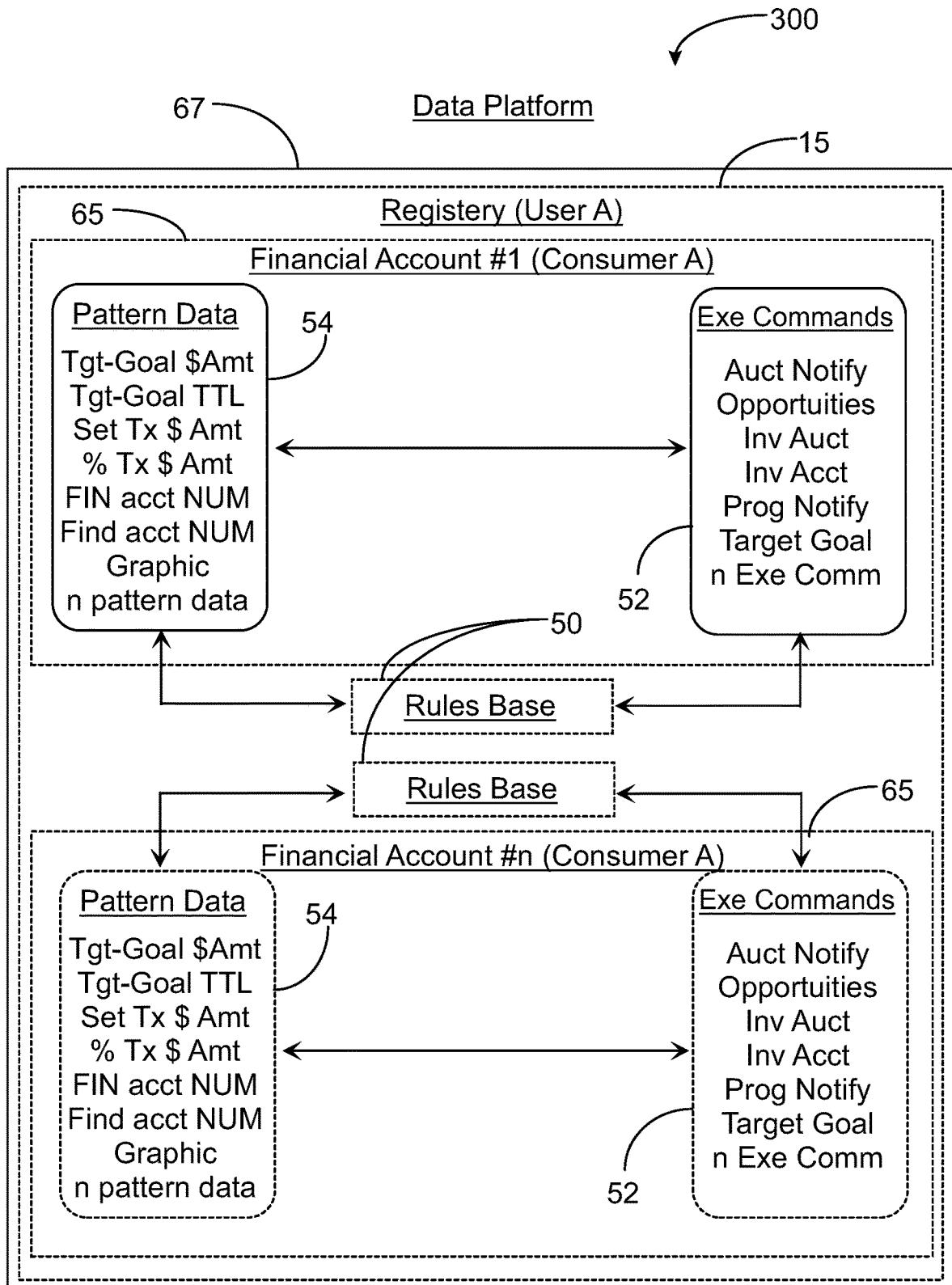
Exe Commands

Auct Notify
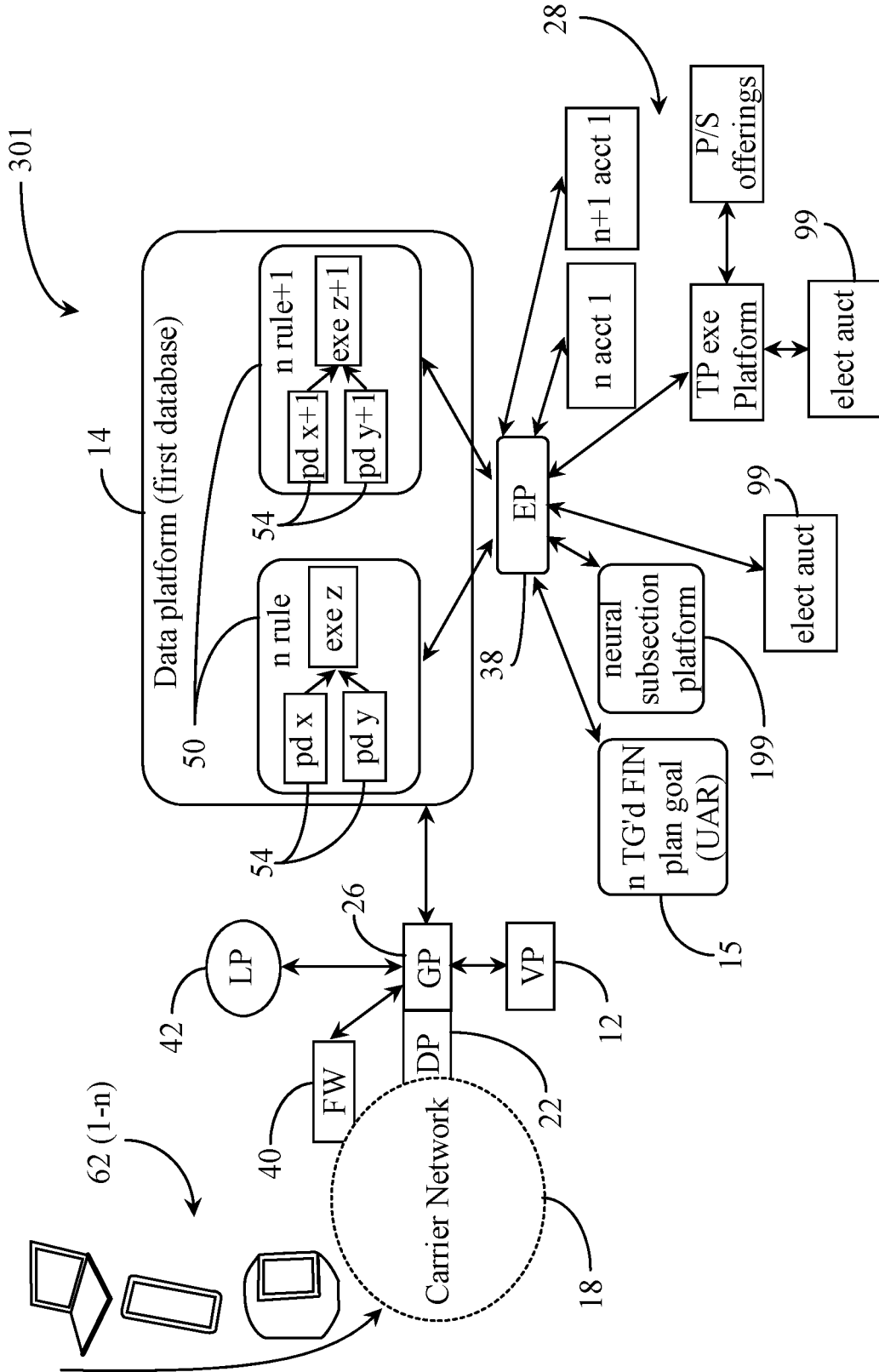Opportuities
Inv Auct
Inv Acct
Prog Notify
Target Goal
n Exe Comm

52

Fig. 3A

Fig. 3B

Fig. 4

Fig. 5

Fig. 6A

Fig. 6B

Fig. 6C

First Database

65

14

701

ISP/Gateway

702

www.nexpay.com.

1

Credit Approved

select accounts (add)

○ add all accounts

65

Add to FD

62

700

Fig. 7

800 —

14 —

Authorized Party

801

Rules Invocation/Edit Module

Access Authority Module FIN accounts/Data

Data Access Layer

802

Neural Network Processors

Predictive Algorithm Engine

Data Mining Patterns Analyzer

Accounts Activity Analyzer

Rewards Analyzer

Fraud Protection Module

Data Processing Layer

803

Progress Reports Savings/Spending

Overview Reports (merchantizing)

Activity Reports Billings/Payments

Activity Reports Auctions/Arbitrations

Activity Reports Exchanges/Conversions

Activity Reports Rewards/Bonuses

Pattern Data Feedback Loop

Reports Rules Management

Fraud Reports Spendng/Localities

Data Reporting Layer

First Data Base

Fig. 8

Fig. 9

1000

1001

Train Predictive Model Leveraging
Pattern Data from Feed Back Loop

1002

Store predictive model for
Later Access

1003

Obtain Data for Instant
Transaction

1004

Invoke Stored AI Model
for Instant Transaction

1005

Output Predictive
Data Results

Fig. 10

Fig. 11

1200

(1) third party platform

(2) third party platform

(n) third party platform

auction platform

1206

1207 (1-n)

1st database

1205

1204

1202

1203

1201

Consumer Station

Visit Web site
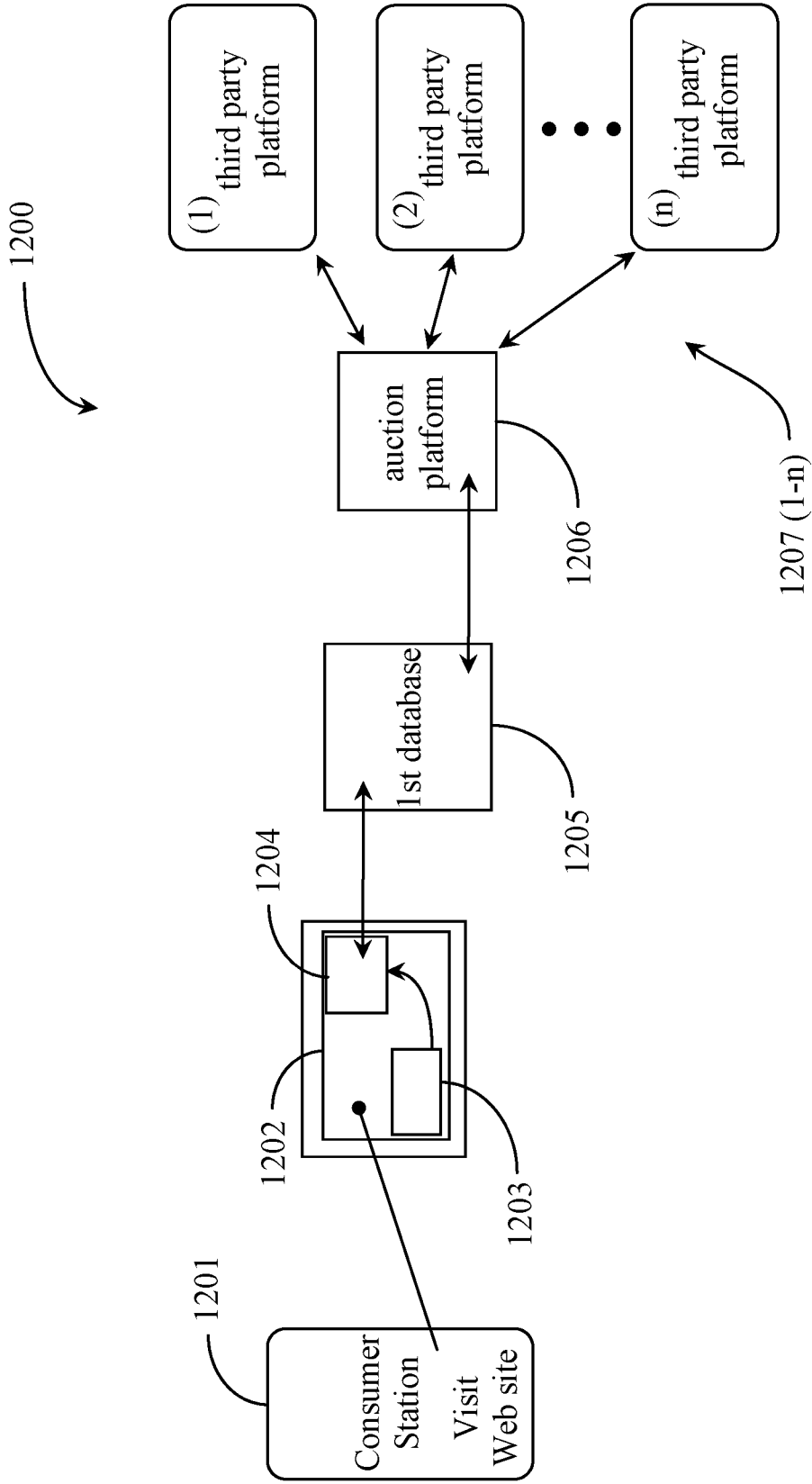
Fig. 12

COMPUTER-BASED SYSTEM AND METHOD FOR TARGETING FINANCIAL GOALS VIA ELECTRONIC CODE OR COUPON AUCTIONS

CROSS-REFERENCE TO RELATED DOCUMENTS

[0001] The present invention claims priority to a U.S. provisional patent application Ser. No. 62/977,651, filed on Feb. 17, 2020, entitled "Computer-Based System and Method for Targeting Financial Goals via Electronic Auctions" and U.S. provisional patent application Ser. No. 62/991,835 filed on Mar. 19, 2020 entitled "Computer-Based System and Method for Targeting Financial Goals via Electronic Code or Coupon Auctions". The disclosures of both of the above mentioned provisional patent applications are included herein at least by reference.

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0002] The invention relates generally to computer methods and systems for processing electronic data related to finance, more specifically, to achieving targeted financial goals through electronic auctions.

2. Discussion of the State of the Art

[0003] In the arts of financial management much evolution has occurred toward enabling a typical consumer to achieve basic goals of consumerism and consumer protection such as reducing the number of steps required to complete transactions, making financial data more readily available to the user, allowing the user easy access to price comparison analysis, improving the user's general experience relative to products and services sought by the consumer, improving fraud detection on behalf of users, and so on.

[0004] More recently in the art users may store financial related data on third party platforms that may perform specific services for users who engage in online consumer practices. Such data may be downloaded by the user and written to dynamic transactional cards or devices for use in transacting. Such third-party platforms, generally referred to herein as money pay services may provide transactional management services to users including management of purchases made, receipts accrued, rewards points accrued, tax deductibles, purchase categorizations, spending analysis, purchase history management, and so on.

[0005] Relationships between issuers of consumer accounts and these third-party platforms enable aggregation of financial related data of user's accounts registered with those platforms and make it more convenient for users to make purchases and perform tasks with less effort. However, much improvement is needed to further refine consumer goals such as use of earned points, application of discounts, competition in comparing offers, ease of distributing and accepting payments, and other tasks that currently require a user to access more than one platform, service provider, account issuing entity, and user interface.

[0006] Likewise, companies who offer online services and products seek to improve and develop new ways to advertise to consumers, retain consumer loyalty, and improve access to more consumers they may add to their client bases. Providers use memberships, loyalty programs, bonus pro-

grams, temporary price reductions, discounts for quantity programs, etc. in efforts to compete against other providers for consumer business.

[0007] Therefore, what is clearly needed is a computer-aided system and methods for optimizing consumer financial goals in consumer relative transacting through the use of online auctions held for providers of products and services in real time.

BRIEF SUMMARY OF THE INVENTION

[0008] According to an embodiment of the present invention, a financial transaction network is provided and includes a first server connected to the network, the first server coupled to at least one data repository containing financial account data belonging to individual ones of consumers, a second server connected to the network, the second server coupled to at least one data repository containing data supporting one or more types of electronic auctions, a server interface to the first server distributed over the network to individual ones of computing appliances connected to the network as end nodes, the computing appliances operated by the consumers, and a non-transitory medium resident on the first server, the non-transitory medium containing machine-readable code thereon, the code executable and instructing the first server to (a) register financial account data for the individual ones of consumers in a consumer account registry on the first server, (b) solicit financial goals in the form of savings goals and or spending goals of the consumers relative transaction activity by the individual ones of consumers through the server interface and associating those goals to individual ones of the consumer's financial accounts, (c) creating one or more rules-based executable routines or commands and associating them to individual ones of the consumer accounts and goals of (b), (d) upon invocation by individual ones of the consumers of the server interface to the first server, sending a bid request to the second server requesting least one electronic auction event, the request including information defining the one or more financial goals of the consumers solicited in (b) to the second server, the auction event held among product and or service providers notified of the event by the second sever, and (e) upon selection by the consumer of a winning bid associated with one or more products or services offered by the providers, performing one or more calculations to achieve or to advance one or more of the consumer's financial goals.

[0009] In one embodiment, the financial accounts may be one or a combination of a rewards account, a scrip account, an electronic coupons or coupon codes account, a checking account, a credit account, a brokerage account, a savings account, a previously paid account; an insurance account, or a bartering account. In one embodiment, the server interface to the first server is a browser extension or a meta browser extension nested in a browser application residing on the individual ones of the computing appliances. In one embodiment, the individual ones of the computing appliances include a laptop computer, a smart phone, a tablet computer, a smart watch or ornament, a smart card, or a desktop computer.

[0010] In one embodiment, the electronic auction types may include a forward or ascending auction, a reverse auction, a Dutch or descending auction, a Vickrey or uniform second price auction, a continuous double auction (CDA), and or a synthetic continuous double auction (SCDA). In one aspect, in (a) registration includes genera-

tion of and assignment of a unique user account registration code and or a unique personal verification code for each consumer registering accounts. In a variation of this aspect, the browser extension or the meta-browser extension is nested in a Google Chrome browser, Opera browser, Microsoft Explorer browser, Apple Safari browser, or a Mozilla Firefox browser.

[0011] In one embodiment, the network is the Internet including one or more sub networks connected thereto. In this embodiment, connected sub networks include one or more of a cable network, a wireless network, a land-line phone network, an intranet network, a local area network, a wide area network, an electronic positioning network, a satellite network, and or an X.25 network. In one embodiment, in (b) savings or spending goals address a set financial amount and or a set range of financial amounts. In one embodiment, in (c) one or more rules-based executable routines or commands are adapted to predict or detect and notify the consumer of fraud pattens across accounts. In one embodiment, in (d) invocation of the server interface of the first server occurs when the consumer is visiting a third-party Web page to engage in at least one transaction. In one embodiment, in (e) the one or more calculations trigger invocation of a surcharge on one or more transactions, the surcharge based upon a formula enabling the consumer to save or to spend an amount of funds or units of value. In this embodiment, the consumers' financial goals are advanced over a set interval of time within which a frequency of transactions occur.

[0012] In one embodiment, in (e) a financial goal encompasses one or a combination of increasing value of one or more consumer accounts, improving credit score of individual ones of consumers, and or distributing, donating, or rerouting a percentage of one or more financial transactions. In an embodiment wherein the consumer transacts from a Web page the third-party Web page includes a coupon field, the field auto filled with a winning coupon or code value subtracted from the consumer's check out price.

[0013] In one embodiment, in (b) the financial goals are one or a combination of instant goals achieved during one transaction and longer-term goals achieved over a number of transactions. In one embodiment, the financial transaction network further includes a step (f) for predicting patterns of the consumer through monitoring of consumer activities. In this embodiment, in (f) the patterns include one or a combination of a pattern of fraud, a pattern of search for products or services, a pattern of clicking on or hovering over interactive Web page advertisements or interactive Web page content, a pattern of purchasing, a preference pattern for a transaction type, a pattern of account selection, a pattern of redeeming rewards and or coupons, a pattern of preferences for electronic auction types, a pattern of consumer geographic locations associated with consumer activities, a pattern of geographic locations of consumer frequented retail locations, and a pattern of costs in processing a transaction.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0014] FIG. 1 is a flow chart depicting steps for registering financial-related data through auction until a targeted financial goal(s) is/are met.

[0015] FIG. 2 is a block diagram depicting configurations of the first database, some optional components thereof, including financial account rules and auction rule associations.

[0016] FIG. 3A is a block diagram depicting a data platform adapted for working with financial relative data including user registration data and financial account management.

[0017] FIG. 3B is a block diagram depicting the first database of FIG. 2 and several components thereof and interactions with third-party platforms.

[0018] FIG. 4 depicts a line graph plotting a representative growth rate of a user's financial wealth over a period of time toward a user-set financial goal.

[0019] FIG. 5 is a block diagram depicting a distributed architecture 500 networks connecting redundant first databases, subset databases, third-party platforms, and user computers.

[0020] FIG. 6A is a screen shot depicting a third-party Web page presenting access to a browser extension invoked to access the first database according to an embodiment of the invention.

[0021] FIG. 6 B is a screen shot of the third-party Web page of FIG. 6A depicting secure transfer of data from the first database to the end device browser.

[0022] FIG. 6C is a screen shot of the third-party Web page of FIG. 6A depicting secure transfer of data from the end device browser to the first database.

[0023] FIG. 7 is an architectural diagram, depicting the auto-population of financial accounts into the first database of FIG. 2 authorized by credit approval.

[0024] FIG. 8 is a block diagram depicting general processing, analytical components, and process categories in the first database SW.

[0025] FIG. 9 is a block diagram depicting processing on a neural subsection platform.

[0026] FIG. 10 is a process flow chart depicting steps for training the AI model of FIG. 9.

[0027] FIG. 11 is a block diagram depicting intelligent processing of instant transactions using the AI model of FIG. 9.

[0028] FIG. 12 is an architectural view of the network interaction between a consumer and competing third party platforms.

DETAILED DESCRIPTION OF THE INVENTION

[0029] In various embodiments described in enabling detail herein, the inventor provides a unique system and methods for setting and achieving targeted financial or value goals for a consumer through manipulating data and conducting real time auction activities during consumer activities online. The method and system of the present invention may be described herein in terms of functional block components, flow charts, screen shots, optional selections, and various processing steps. It should be appreciated that such functional blocks may be realized by any number of hardware and/or software components configured to perform the specified functions. For example, the present invention may employ various platforms comprising software and hardware components like memory elements, processing elements, logic elements, look-up tables, and so on, which may perform dedicated functions under the control of one or more microprocessors or other control devices. The present invention is described using the following examples, which

3

may describe more than one relevant embodiment falling within the scope of the invention.

[0030] Referring now to FIG. 2, a block diagram 200 depicts exemplary configurations of a platform 14 also referred to herein as a first database 14 hosted on a network 18 and accessible to a consumer from a personal computing appliance 14 connected to the network. Platform 14 may be accessible to a consumer having a personal computing appliance able to connect to and browse the network 18 employing a browser and a browser extension or meta-browser the consumer may invoke when visiting a provider website. Platform 14 is a distributed database in one implementation of the present invention that may include mirror servers, proxy servers and data storage facilities that may be separated by the network 18.

[0031] Network 18 may be a wide-area-network (WAN) like the Internet that includes sub-networks connected thereto including wireless and wired data networks accessible to a consumer computing appliance, for example, an Ethernet LAN or a wireless communications carrier network. Network 18 logically represents all of the above network types including financial network channels using secure transaction settings.

[0032] First platform 14 may include the domain of a cloud-based payment service sub platform where a consumer may register financial accounts 65 (1-n) and receive account services relative to transacting online or offline. Financial accounts 65 (1-n) may include Visa, AMEX, eCheck/ACH, Savings, Stored Value, Debit, Scrip, Rewards, Private Label, Brokerage, and other account types (n). Consumer accounts 65 are accessible to the consumer operating a computing appliance, in one implementation, through a Website and a meta browser extension, or in another implementation, through a thin client SW application running on a wireless device like a cellular phone. In one implementation, platform 14 may be an account issuer of some or all of financial account 65(1-n) of a consumer, wherein the platform may operate as a financial institution like a bank or credit issuer and or a rewards provider for the consumer.

[0033] Platform 14 includes a sub platform 99 for holding auctions, sub platform 99 is separated by network 18 from the consumer account sub platform hosting registered consumer accounts 65(1-n). Sub platform 99 may hereinafter be referred to as auction platform 99. Auction platform 99 may be adapted to service business-to-business (B2B), business-to-consumer (B2C), and consumer-to-consumer (C2C) bidding activity and secure transaction activity. Auction platform 99 may be a Third Party (TP) platform that may be considered a different platform from platform 14 without departing from the spirit and scope of the present invention.

[0034] Platform 14 includes memory storage facilities such as data repositories implemented in memory and controlled by one or more servers. Such repositories may hold data generally defined as pattern data 54(1-n) representing, in this implementation, goals a consumer practicing the present invention may desire to achieve over a short period or longer period dependent at least in part by the particular type of goal and if the goal is to be repeated. Goals may be associated to one or more than one financial account 65(1-n).

[0035] Goals 54 may be any designated goal of the user typically in the form of any product and or any service. General examples of a targeted financial goal may include buying a car, raising a down payment for a house, taking a vacation, setting a retirement fund dollar amount, donating an amount to a non-profit charity, reducing credit card debt, reducing credit card interest rates by transferring balances to new credit cards, purchasing legal services, buying a computer, buying inventory or supplies for a factory or office, buying a concert ticket or gym membership, saving on a layaway plan for purchasing a motorcycle, and or buying insurance for life, disability, or long-term care.

[0036] Goals 55(1-n) may be dynamic and may be implied or suggested in some implementations of the present invention by system monitors such as monitors of online activity, search activity, messaging activity, and SM preferences and activities. Goals 55(1-n) may also be input into platform 14 by a consumer directly. In still another implementation, goals 54(1-n) may be predicted based on data mining and analysis of aggregated activity data including browsing data patterns, search data patterns, and social media patterns.

[0037] In this embodiment, goals 54(1-n) are all associated with individual ones of consumer accounts 65(1-n), for example, a consumer goal 54(1) (buy motorcycle) is a targeted goal associated with a consumer-registered visa account 65(1). Further to the above, a target goal 54(2) (take a vacation) has direct association to consumer account 65(2), which is an (AMEX) account. Other consumer driven goals listed include 54(3) (buy house), associated with a consumer registered account 65(3) (eCheck/ACH). Other goals set include Saving of an amount of money, retirement (may be date dependent), balance transfer, buy legal services, buy a computing appliance, buy a motor vehicle, these goals associated to the various accounts under accounts 54 (I-n), which are listed further above.

[0038] Platform 14 may include execution commands 52(1-n) provided for executing transactional routines related to savings and to spending plans. It is assumed in this embodiment that parties including consumers and providers that wish to either originate or receive financial transactions are registered to access platform 14 through an associated verification program and be recorded and profiled in a user account registry. The exact verification requirements and financial information registered with platform 14 for a given user depends somewhat upon the mode desired to originate or receive settlement.

[0039] A user, which may be an individual consumer or a corporate entity, may register at least one unique user code (UUC) (not illustrated here, and optionally a personal verification code (PVC), also not illustrated here. Data such as a plurality of Financial Accounts 65(1-n) may be associated with at least one Execution Command 52(1-n) that may execute routines adapted to access, deposit, display, deduct, and disburse financial data belonging to at least one financial account 65(1-n).

[0040] A consumer's financial goal may be detailed and associated to one or more accounts (65(1-n) and an invitation to bid (IFB) notification may be transmitted over the network 18 by the consumer (or other user profile) or on behalf of the consumer (or another user profile) to auction platform 99 to a specific auction type, if desired and available. An IFB invitation may invoke or trigger TP providers of goods and services that most pertain to an associated consumer goal or goals 54(1-n). For example, if a consumer has an image or a textual or audio description of a specific motorcycle they desire to buy (goal 54(1)), the IFB generated may include specific details like make, model, year, cost or budget, payment terms, a time deadline, and other rel-

evant factors and minimum qualifications that could influence and inform prospective TP providers of motorcycles who may want to bid in an electronic auction to determine who will have first access to the consumer.

[0041] An IFB Invoked and transmitted directly to the auction platform may function to reduce the time required for the auction platform **99** to invoke a bidding process and complete an electronic auction. A consumer may refine the decision process by choosing the most qualified bidder with the lowest-priced bid. Bidders may focus more narrowly on estimating the potential costs associated with providing the product or service which most closely pertains to the goal or goals of the consumer and may, with more expedience, produce a bid. In one implementation, a consumer's target financial goal is just an overview, or is somewhat general relative to rich description or specific consumer requirements. In such a case, a request for proposal (RFP) may be transmitted by a consumer or on behalf of the consumer to auction platform **99**.

[0042] Auction platform **99** may host a variety of electronic auction genres including but not limited to reverse auctions, continuous double auction (CDA), or a synthetic continuous double auction (SCDA), and Vickery auctions. Third Parties are registered users who compete for the business of the consumer.

[0043] Referring now to FIG. **1**, a flow chart **100** depicts steps for consumer registration of financial data and through holding auctions, realizing targeted financial or value goals of the consumer. At step **101**, a consumer may register one or more financial accounts or financially relative data with the first database or as it is called platform **14**. A verification program secures the data to the consumer. A consumer may be an individual person or a corporate entity. The consumer may create or may be issued at least one unique user code (UUC) and optionally a personal verification code (PVC).

[0044] At step **102**, the consumer may set rules for financial accounts along with financial goals relative to those registered accounts and associate executable commands relative to those accounts and targeted goals. A targeted goal may be created by a user or in one embodiment may be inferred based on history data or patterns of the consumer.

[0045] At step **103**, the consumer may invoke auction offers and bidding. There may be differing types of auctions held like a forward or ascending auction, a reverse auction, a Dutch or descending auction, a Vickrey or uniform second price auction, a continuous double auction (CDA), or a synthetic continuous double auction (SCDA). In one embodiment the consumer may view data and or implements and execution commands related to any financial accounts by interacting with a pop-up window invoked by a Web browser extension or a Web meta-browser extension of the first database of platform **14** without requiring application programming interface integration with any web site, and without requiring a form re-direct away from any website.

[0046] At step **104** it is determined if a bid has been accepted. If an auction bid has not or will not be accepted by the consumer, then the process may resolve back to step **102** and the consumer may, if desired, modify goals and or rules. Auction types may be offered to the consumer for approval. Third Party providers participate in the auctions to win transaction right to the consumer for provision of the products or services offered to that consumer.

[0047] In one embodiment, the platform **14** includes a processing capability to aggregate and process data relative

to the consumer, the analysis occurring on platform **14**. This sub process may include steps (a) accessing a plurality of Web browsing data and or financial data of the user, (b) quantifying and interpreting the data to reveal data patterns that may be used as metrics, and (c) presenting such refined analysis of the discovered patterns to the consumer on the consumer's personal computing device **62**.

[0048] If at step **104** if a bid is accepted by the consumer. The consumer or an agent of the consumer (SW) may invoke an execution command at step **105** the execution command (**52** 1-(*n*) FIG. **2**) operable to calculate and invoke an automated financial plan for saving and or for spending. This enables the consumer to achieve the targeted financial goal set. Sub processing in this step may include but should not be limited to (a) electronically transmitting the targeted financial goal amount over the network to a third-party platform or database of a provider of services and or products subject to the bidding and relative to the goal, (b) presenting offered services and or products which relate to the consumer's targeted financial goal to the consumer through a user interface (UI), which may be a meta browser, or a client application, (c) invoking an electronic auction via the first database for enabling the user to select at least one of the offered products and or services, (d) completing the electronic auction defined as selection by the consumer of at least one of the offered products and or services subject in the auction, (e) determining the correct automated financial plan for savings or spending, and (f) invoking the automated financial plan of the consumer.

[0049] If at step **106**, the system may determine if the stated financial goal relative to a spending plan or savings plan associated with one or more registered accounts of the consumer has been achieved. If at step **106**, the system determines the ultimate goal was not achieved, the process may loop back to step **102**. If at step **106**, it is determined that the consumer's target goal has been achieved, then at step **107** the platform may send notification of the completed or otherwise satisfied goal to the user over the network and optionally to the winning product/service provider.

[0050] Referring now to FIG. **3**A, a block diagram **300** depicts a data platform adapted for working with financial data, user registration data, and providing financial account management. A data platform **67** may be considered a sub-platform limited to the consumer's financially relative data registered in a database on platform **14**. Data platform **67** includes predetermined monetary unit value which is legal tender or a legal tender-equivalent such that a consumer's purchase, expenditure, or usage of these units results in the consumer's purchase or sale of goods or services. Financially relative data may be equated to value and may be expressed in terms of units of currency, minutes of telephone calling time, miles towards earning a free airplane flight, points towards a free gallon of gas, and other equivalencies that may be accumulated toward a targeted goal.

[0051] Consumer account registry **15** resides on the data platform **67** and includes all of the registered accounts of the consumer. Within financial accounts **65** of a consumer A, for example, pattern data **54** and execution commands **52** are dependent on a rules base **50**. Pattern data **54** may be referred to as actions and target goals associated with a specific account. Different consumer accounts may have different sets of pattern data. Here pattern data **54** for a financial account number **1** includes targeted goal dollar

amount, target goal time deadline (TTL), set transaction dollar amount, percentage of transaction dollar amount, financial account number, blind account number, a graphic like a picture, emotive, drawing, or logo, and other n pattern data.

[0052] Execution commands **52** are associated to the consumer account and set targeted goals associated to the account and may include but are not limited to notification of the consumer of auction opportunities, invocation command to invoke an option to hold an auction, invocation of set savings or spending amounts, progress notifications relative to goal achievement, and other executable n. In this example, consumer account **65** (*n*) is depicted and holds the same basic examples of pattern data **54** and executable commands **52**. Rules base **50** may hold the general rules identified for each registered account.

[0053] The consumer may authorize a financial transaction using relative to individual ones of accounts **65** either at a merchant point of sale (POS) terminal or over the Internet. Providers may bid in auction to transact with the consumer or provide the consumer with repetitive membership services. In a preferred embodiment, the consumer may override a winning bid and accept a lower bid without departing from the spirit and scope of the present invention.

[0054] Referring now to FIG. 3B, architecture **301** depicts an overview of functionality and connection between components of the system of the invention. A consumer makes connection to the system from any computing device or appliance **62**(1-*n*) having network access capability through a carrier network of network **18** and typically an Internet Service Provider (ISP). Data platform **14** includes an electronic verification platform **12** to verify consumers and or third-party platforms attempting to access the platform. A fire wall (FW) **40** may be provided to filter out or reject messages that are not from a verified consumer using a personal computing appliance **62** (1-*n*).

[0055] A decryption platform **22** (DP) may be provided to decrypt consumer messages and data for security purposes in validating the origin computing device or appliance used. In a preferred embodiment, all messages the data platform **14** receives with the exception of those not transmitted via a UIA **16** comprise a UIA-VC **204** sequence number and a message authentication code (MAC). MACs, also known as cryptographic check sums, are well known in the computer industry, and are used to assure that any changes to the content of the message will be detectable by the entity receiving the financial transaction.

[0056] The decryption platform (DP) **22** validates the message's MAC and checks the sequence number for that particular UIA **16**. If the Decryption Platform **22** determines that both the MAC and the sequence number are valid, the DP **22** uses the unique secret key for that particular UIA **16** to decrypt the message. For the decryption to function properly, the decryption platform **22** must comprise a copy of each UIA's **16** DUKPT key table. In a preferred embodiment, the incoming messages to data platform **14** are decrypted by the decryption platform (DP) **22**. Once decrypted, the verification of parties to the transaction is preferably determined using the electronic verification platform (VP) **12**.

[0057] In one implementation, the data platform **14** including the first database may be conjoined, co-located and or integrated with VP **12** and the user account registry (UAR **15**) in any combination thereof. Elements of data platform **14** may be conjoined, co-located and or integrated with a user computing appliance and with a third-party platform **28**. In one implementation, a logging platform (LP facility) **42** is adapted to log all electronic financial transaction attempts whether successful or not to write-once media (memory) so that a record is kept of each financial transaction and each error that has occurred during the operation of the verification platform **12**. A gateway platform (GP) **26** is provided at the input head of data platform **14** as a database coordinator and message processor.

[0058] GP **26** serves as an intermediary between redundant VP **12** and redundant in-house registry **15** (see FIG. 3A) and is charged with routing electronic financial transactions and or electronic transmissions from platforms on overload to platforms that have available capacity (distribution). GP **26** also periodically queries platforms to ensure that are operative and to alert data platform **14** or authorized TP platform **28** administrators if a server is inoperative. In a preferred embodiment, the FW **40** may be a local Internet or sub-Internet router that only handles electronic messages destined for the GP **26** nodes.

[0059] On the first database, rules base **50** is depicted as rules **50** governing handling of pattern data **54** and execution commands **52**. For example, n rule **50** governs handling of PD X and PD Y using EXE Z. N+1 rule **50** governs handling of PD x+1 and PD Y+1 using EXE Z+1 and so on. UUC and optionally PVC documentation may apply to each electronic process on consumer data or TP data.

[0060] An Execution Command **52** is preferably invoked by Pattern Data **54** with which it is associated. Execution Commands **52** are executed by an execution platform (EP) **38**. EP **38** enables automated transmission of electronic messages necessary for depositing, displaying, deducting, and or disbursing financial data associated with consumer accounts (**65** 1-*n*) and optionally, TP platform **28**, such as an issuing bank. Consumer accounts **65** may be arranged within the consumer's user account registry (UAR) **15**. UAR **15** may be identified by a user account registry code (UAR-Code) at the "shopping cart" level of a secure transaction site or at a POS terminal. In a preferred limitation, the UAR-Code does not identify a specific consumer account **65** or a specific financial account number belonging to the consumer. It also does not depend upon a specific financial account that might be tagged as a primary account.

[0061] In general process, execution command **52** associated with a rule **50** causes an electronic financial transaction to be executed by the execution platform **38**. The Execution Platform **38** may be on a platform which is located within the data platform **14** (master first database) or it may be co-located with a TP platform like TP **28** that is external to data platform **14**. In the event that a designated TP platform **28** cannot be contacted for the electronic financial transaction to be completed, the financial transaction is "declined".

[0062] In one embodiment, if an account issuer approves a transaction, the EP **38** returns a transaction number to the consumer's UAR **15**, and the consumer's financial account **65** is adjusted through either a credit or debit action. The transaction number is returned to the UTA **16**, which lists the transaction on a daily transaction summary report. The consumer need take no further action since financial transactions are automatically settled, at which point a calculation is made to automatically adjust the consumer's designated account **65**.

[0063] In one implementation, a neural network platform **199** or a predictive data modeling platform may be provided as an optional system that may mine aggregated data to produce relevant patterns and relationships between the consumer and entities across multiple variables. Although it is a preferred embodiment, neural platform **199** is not required in order to practice the basic methods of the present invention. Attributes of platform **199** are described further below.

[0064] In one implementation, VP **12** platform is physically separate from, but associated and registered with, the data platform **14** (master first database). In one embodiment, UAR **15** platforms may be conjoined with VP **12** within platform **14**.

[0065] Alternatively, to the above state, they may be housed in independent platforms or joint platforms. In another embodiment, data platform **14** is separately located from UAR **15**. UAR **15** is conjoined with a TP **28** and associated and registered with data platform **14**. In another embodiment, VP **12** is physically integrated with data platform **14** and the UAR **15**, whereby VP **12**, data platform **14** and UAR **15** are physically interconnected and integrated together within one server or server platform. In these embodiments, communications among them may occur via many different methods using varying protocols well known in the art. The exact architectures depend partly on the particular communication networks already deployed by an organization or company that deploys an electronic financial transaction authorization system.

[0066] In one embodiment, VP **12**, data platform **14** and UAR **15** are connected by Ethernet network **18** to a Local router in turn connected to a network operations center (NOC) via frame relay lines. Messages are sent among the VP **12**, data platform **14** and the UAR **15** using TCP/IP over network **18**. In another embodiment, network **18** may be a cellular digital packet data (CDPD) modem network maintained by CDPD provider that may provide TCP/IP connectivity from the VP **12** to an Intranet **18** to which at least one data platform **14** is connected.

[0067] It may be noted herein that the VP **12**, data platform **14** (master first database) and the UAR **15** hardware platforms are highly reliant platforms well known in the art such as those available from Sun™, Compag™, Tandem™, and IBM™. Furthermore software (SW) running on VP **12**, database **14**, and registry **15** may incorporate scalable platform architecture known in the art such as those available from Oracle™, Sybase™ Informix™, Red Hat™ or the like SW packages.

[0068] Also, in one embodiment, an execution command optionally requires the data platform **14** and EP **38**, to communicate with at least one external third party computer or platform **28** to conduct a consumer's financial transaction. For example, EP **38** may need to communicate with a banking or credit card entity, a merchant's purchasing incentives platform, a financial computer of another party to determine the correct "other" financial party account for financial disbursal. A local or subset database, image of database **14** may be created within a remote TP platform like platform **28**.

[0069] Referring now to FIG. **4**, a line graph **400** is depicted, the graph plotting a representative growth rate of a user's financial achievement of a set financial goal over a period of time toward a goal target level. Graph **400** is a two-dimensional line graph having a horizontal x axis representing time (t) and a horizontal y axis representing value in dollars ($).

[0070] Intersect **401** (t(0),$(x)) represents the point in time that a consumer registers an account with the system and establishes rules for the account. Intersection **402** (t(x),$(y)) represents a point in time when an auction between provider entities is completed and a provider's products or service has outbid the other provider entities and is accepted by the consumer. Intersection **403** (t(y), $(z)) represents progress made over time t to achieve the goal set by the consumer for that account.

[0071] Referring now to FIG. **5**, a distributed system architecture **500** is depicted for processing financial transactions by way of subset data platforms **17** under the master data platform **14**, the subset databases being distributed remotely over the Internet **18**. Architecture **500** supports payment processors at TP platforms **28** to control returning authorization messages to a merchant accessing the TP platforms **28** through gateways to payment networks like Visa™, MasterCard™, Discover™, Interlink™ and American Express™) and or the TP platforms **28** defined as consumer account issuing institutions.

[0072] Distribution in this embodiment includes hardware and SW and processing capability. Distributed processing allows for a reduction in latency in transacting over the network making it possible for goals to be realized in some aspects in real time while a consumer is making a purchase or otherwise conduction a transaction for goods, services, or for value retention.

[0073] In one embodiment, as depicted in FIG. 3B, an execution command **52** optionally requires the first data platform including the master first database **14** and the EP **38** to communicate with at least one external or TP computer or platform **28** to conduct a consumer's financial transaction. EP **38** may need to communicate with a TP entity like banking or credit card entity. Referring now back to FIG. **5**, consumer appliances **62** (**1**-*d*) may access subset data platforms **17** (**1**-*n*) through networks **18** (**1**-*n*) (local access/carrier) via gateway platforms (GP) **26** (**1**-*n*). In one aspect access may be achieved via an Internet multiplexor network **18** (**1**), or a LAN/WAN network **18** (**2**), or through a wireless carrier network or cable network **18** (*n*).

[0074] It is duly noted herein that communications between the data platform **14**, subset platforms **17**, consumer appliances **62**-, and third-party platforms **28** may be accomplished through any suitable network **18** like a telephone network, intranet network, Internet network, etc. Consumer points of interaction may include POS terminals, network connected appliances (**62**) or devices including, personal digital assistant (PDA), cellular or smart phone, kiosk, smart watch, or another smart wearable. Interaction may include online embodiments, offline embodiments, wireless embodiments, etc.

[0075] One skilled in the art will appreciate that any databases, platforms, or domains of the present invention may consist of any or a combination of databases, and other mentioned components located singularly with respect to location or distributed (preferred embodiment) at a plurality of locations. Suitable transaction security may include any of various suitable security features and protocols, such as firewalls, access codes, tokens, encryption, decryption, compression, decompression, etc.

7

[0076] Referring now to FIG. 6A, a screen shot depicting a third-party Web site **53** (Target) includes access to a browser extension **2** invoked to access the first database or first data platform (**14**) or a subset thereof via a meta browser interactive pop-up window **51**. Extension **2** is invoked, which invokes an act **110** that brings up for display the meta browser window **51** displaying a menu of a plurality of visible account signatures **81** in the form of an icon or text representing a consumer financial account **65** registered in the first data platform **14** for presentation to the consumer in the displayed window **51**. The consumer may select one of the displayed account signatures to designate that account from accounts **65** for invocation by the first data platform **14** as the account that would be used to complete the transaction.

[0077] The menu (window **51**) may include current interest rates, available credit lines, expiration dates, and current balances. Window **51** may also include an advertisement **3** personalized to the consumer based on data mining and analysis of the consumer's data (**67**) resulting perhaps from tracking the consumer's browsing and purchase patterns across a plurality of the consumer's browser-based appliances (**62**). Other consumer profiling methods may also be used in combination with or separate from tracking browsing activity. Rule modules or simply rules (**50**) are adapted among other things to invoke preferences, tagging, and rankings **111** of consumer accounts including designated default consumer accounts and a private code, which the user may select at registration and which may be presented by the first data platform to the consumer on the consumer's personal appliance to confirm that the user is accessing the authentic database **14** and any authentic third party platform registered with or recognized by the first data platform. In a preferred embodiment, the predetermined criteria for ranking **111** may include improving a transaction benefit for a payee like a merchant, or for the consumer. Ranking **111** may be equivalent to improving a transaction benefit to increase efficiency, reduce latency, thus increasing speed of the transaction, increase profit, increase security, decrease cost, increase reward incentive, and invoke a surcharge predetermined by the consumer.

[0078] Referring now to FIG. 6B depicting a screen shot of the third-party Web page of FIG. 6A highlighting a secure transfer of data from a first data platform (**14**) (first database) to the end device browser application of the consumer.

[0079] FIG. 6B is a screen shot of the third-party Web page of FIG. 6A depicting secure transfer of data. An act performed by the consumer with pop-up window **51** open, referred to herein as act **112** invokes a discount network **59** from within the pop-up window **51**, such that clicking on the discount network **59** icon invokes coupon-codes which are auto-filled into the checkout boxes of the Web page **53** to reduce the cost of the consumer's selected product or service. In this instance, the first data platform **14** may connect by way of network (**18**) to a third-party platform (**28**) that is adapted to provide a service for aggregating electronic coupon codes. In an act **113**, an auto-fill function is invoked to auto fill one or more checkout data entry boxes on the Web page **53**. This may be accomplished without requiring an application program interface (API) the third-party Web page in the consumer's browser, or a form navigation re-direct away from Web page **53**.

[0080] Referring now to FIG. 6C depicting a different third-party Web page adapted to practice the present invention. This screen shot highlights a secure data transfer of data from the end device or appliance of a connected consumer to the first data platform (first database). A consumer may invoke discount network icon **59** in pop-up window **51**. This action enables the consumer to simply hover with mouse or other selection device to hover over any data presented on web page **53** to automatically invoke and display images and other information about a product or service offered at competitive or discounted pricing from other Web sites through meta browser window **51**. In this way, a consumer may easily ascertain whether they are getting the best value for the same product prior to committing to a purchase.

[0081] It may be noted herein that a web browser extension or a web meta browser includes a computing program from the first data platform (**14**) that extends the functionality of a web browser in some distinct way. Depending on the browser and the version, the term may be distinct from similar terms such as plug-in or add-on. Some extensions are authored using web technologies such as HTML, JavaScript, and CSS. Browser extensions can change the user interface without directly affecting viewable content of a web page. For example, a "widget" is a click-able graphical user interface object that may be added. One with skill in the art will appreciate that each browser type has its own architecture and APIs to build an extension which may require different code and defined tasks for each extension.

[0082] Development frameworks such as Extension Maker or Crossrider may be used to build cross-browser extensions with only one code base and one API. This limits or obfuscates the need to develop a different extension version for each of the popular browsers like Internet Explorer, Firefox, Chrome, Safari, and Opera.

[0083] Referring now to FIG. 7, we see an architectural diagram **700** depicting auto population of financial accounts into the first data platform (database) of FIG. **2** from a consumer device **62**. In this view a consumer operating cell phone device **62** with a thin client application **65** may populate the first data platform **14** with one or more financial accounts **65**. In a preferred embodiment, this is authorized by credit approval. The consumer may use device **62** and may select and upload accounts through ISP gateway **702**, network backbone **701** and into the first database **14**.

[0084] A screen shot depicts device **62** and a credit-approval notification setting the consumer up for adding financial-related data. A selection option for choosing accounts **65** to add to platform **14** is included as well as an option to fully load all of the financial accounts. Another option at the bottom of the screen shot allows submission to the database of the selected accounts. In process, an electronic credit report of a consumer may be accessed and vetted, then the approved accounts may appear in the screen shot for add. The first database may electronically extract payment-related data from a displayed graphic or picture representing an account added.

[0085] Referring now to FIG. **8**, a block diagram **800** depicts general processing, analytical components, and process categories in the first database SW. Diagram **800** depicts layers of SW functionality segregated into a data access layer **801**, a data processing layer **802**, and a data reporting layer **803**. A consumer's financial account data may be accomplished through the user account registry (UAR) **15** previously described. Access functions may include but are not limited to querying, editing, and transacting with the financial relative data (**67**).

[0086] In one embodiment, an authorized party, user, or consumer, may gain access to financial data through an access authority module wherein a query may be accompanied by invoking a rules module (**50**) that may result in among other things, a presentation of advertisements or rewards incentives to the consumer while the consumer is querying their financial accounts (**65**). Invocation of any rule through rule module in data access layer **801** may trigger neural network processor functions in processing layer **802**. Various processors may launch pan-portfolio analysis, wherein a consumer may access their user account registry and invoke rules by performing a key-word search. Returns may include processed data such as reports including report on any activity in their financial accounts, report on spending by category of expenditures, a report on the chronology of expenditures, a report on items that may be tax deductible expenditures, etc.

[0087] Processing layer **802** may include dedicated processors for predictive analysis (predictive algorithm engine), data mining (patterns analyzer), activity detection (accounts activity analyzer), rewards calculation (rewards analyzer) and fraud protection (fraud protection module). Data reporting layer **803** may include results of the various processes occurring in the data process layer **802** including but not limited to progress reports on savings and spending, overview reports (merchandising), activity reports on billings and savings, activity reports (auctions and arbitration), activity reports (exchanges and conversions), activity reports (rewards and bonuses), reports on rules management, fraud reports (spending), and a feedback mechanism for feeding back pattern data to help refine the processing layer functions.

[0088] Referring now to FIG. **9**, a block diagram **900** depicts processing on a neural subsection platform. In one embodiment, a neural network processing platform **199** is provided. A predictive AI model **600** is provided that may be a rules based trained model **600** and neural platform **199** may be provided within the first data platform which include rules governing predictive fraud, predictive purchasing patterns, predictive rewards redemption, predictive risk-management tools, predictive account preferences, predictive impact on the consumer resulting from advertisements, and the like.

[0089] Predictive Model **600** includes a set of input variables VAR (**1**-n) representing a set of n potential single actions for processing. Model **600** may use predictive algorithms supported by rules in a rules base to produce probability statistics as output of a given action (actions A-Z). Output is expressed as p(action A) through p(action Z) where the statistics point to the potential or probability for actions to occur with specific accounts. In one implementation, actions A-Z represent actions where exhaustive enumeration may occur during processing, for example partitioning of numerous complex actions.

[0090] In one embodiment, a constraint optimization may be performed in calculation to normalize statistical probabilities (sum up to 1). However, normalization may be avoided in one embodiment by constructing individual predictive models to estimate the marginal probability for each individual complex action predicted. An implicit segmentation may be imposed by setting a low threshold for each marginal probability. For example, let R be a segment of the population for which P(action A) is less than a specified threshold (TsubA). The desired segmentation might be

obtained through scoring the pan-portfolio data (all of the accounts in the UAR). The probability given a complex action may be computed either by using the predictive model estimate or by using a prior probability statistic associated with an action. The prior probability for a population segment may be calculated as the probability to pay, given all possible actions, whose marginal probabilities exceed the corresponding thresholds Tsubl, TsubJ TsubK and so on. As more and more data are gathered about the actions, the prior probability statistic may be modified to reflect the latest statistic citing probable success or failure of the action in benefiting the consumer.

[0091] In one embodiment, neural platform **199** includes a tracking agent that is able to take data from the consumer's existing ad preferences and online activity patterns to periodically recommend to the consumer new information that may lead to a bolstering or to a reduction of the consumers broad pattern data and to a modification, addition of, or deletion of current execution commands based upon algorithmic projection of what the consumer's online preferences and activities may look like in the short term or longer term future.

[0092] In a preferred implementation, neural platform **199** learns from a training process that may include (1) Repeatedly inputting samples of a particular input or output task to a neural network model, (2) Repeatedly comparing the actual data output from the model to the desired output of the model and quantifying error, and (3) Modifying model weighting constants where exposed to reduce error. The steps are repeated until further iteration fails to decrease the error values. Once training is completed, neural platform **199** may better predict outcomes for new data inputs. Known programs or software systems adapted to run platforms like platform **199** may include Neural Designer™ Neuroph™, Keras™, Tflearn™, and NVIDIA DIGITS™.

[0093] In another embodiment, an execution command **52** may be adapted to trigger an intelligent tracking agent to acquire and process data acquired about the consumer's Internet browsing to provide personalized recommendations to the consumer relative to new products and services available from any number of Internet Web sites or Internet money or value account issuing sites. An execution command example might be a command to track and record new types of music, books, and investment opportunities discovered and that reflect the consumers preferences. Recommendations may be preselected based upon the aggregation of and comparison of prices from various third-party platforms.

[0094] In another embodiment, an execution command **52** may be adapted to trigger a data tracking agent or screen scraping application to track and record data in a consumer's calendar or schedule and then after analysis, to provide the consumer with customized recommendations on offerings for products, services, or upcoming events based on the.

[0095] Other execution commands cover presenting and displaying information to the consumer based on real time scheduling and activities including location. A consumer may see consumer rewards incentives, customized advertising. For example, the consumer may see an ad for ski apparel when the consumer's schedule indicates a ski trip departure, location arrival, or in time reserved before the trip is scheduled. A consumer might see an advertisement for new coffee flavors from the consumer's preferred vendor during the consumer's morning work session. An execution command may be created for displaying information relative

to a consumer activity program the consumer connects to using an Internet capable device like a fitness tracking device or an exercise machine or station where presented data may include prior statistics and recommended time and task performance steps or repetitions to enhance or improve the consumer's progress toward a longer-term goal. There are many possible use case scenarios.

[0096] As described further above in this specification, an execution command **52** executes a routine or series of events including transactions based on one or more rules from a rules base described as rules module **50** containing rules associated with exe commands. In another embodiment, an execution command may cause an account issuer to contribute money or value to a different account issuer based upon a consumer's purchases. In such transactions, units of currency or value are electronically debited from the consumer account maintained at the first issuer and electronically credited to a designated consumer account maintained by the second issuer. An example might be a consumer purchase with Citibank™ Visa™ invokes a Rule that Citibank™ contributes 1% of the consumer's purchase amount to the American Lung Association™ registered third party account. Alternatively, Citibank™ credits 1% to the consumer's purchase amount from towards frequent flier miles in the consumer's Star Alliance™ rewards account. In the first instance, the transfer is from a consumer account to a third-party account that is not the consumer's account (pay). The second instance is a transfer from a consumer account to another consumer account.

[0097] Referring now to FIG. **10**, a process flow chart **1000** depicts steps for training the predictive model **600** of FIG. **9**. At step **1001**, the predictive model is trained using pattern data and new input variables. Training under step **1001** may include (1) Repeatedly inputting samples of a particular input or output task to a neural network model, (2) repeatedly comparing the actual data output from the model to the desired output of the model and quantifying error, and (3) modifying model weighting constants where exposed to reduce error as referenced above in FIG. **9** referencing predictive model **600**.

[0098] At step **1002**, the predictive model may be stored in data platform **14** for later access during transaction events or activities that rely on the model to make decisions for and send recommendations to a consumer. At step **1003**, the first data platform may obtain data relative to an instant transaction in process. An execution command invokes the predictive model during the transaction process offline (POS) or online (Checkout) transaction activity of the consumer.

[0099] At step **1004**, the predictive model may be invoked and executed for the transaction in progress. At step **1005**, the predictive model outputs predictive results relative to the current activity including options available to the consumer. In one embodiment, the predictive model may be used to make recommendations which may pop up as notifications in the meta browser window (**51**) of the consumer. In one embodiment, the predictive model output data may according to one or more rules in a rules base (**50**), trigger an execution command (**52**) to perform a selection, invoke a program, highlight a specific account as a priority account, invoke an account, auto fill dialog boxes or the like.

[0100] The predictive model is not required in order to practice the present invention, however it functions to improve and fine tune the consumer's experience and helps to predict, in a general sense, the needs of the consumer

moving forward and aids in some instances in advising the consumer or working on behalf of the consumer to accelerate achievement of a financial goal set by the consumer.

[0101] Referring now to FIG. **11**, a block diagram **1100** depicts intelligent processing of instant transactions using the AI model **600** of FIG. **9**. FIG. **9** illustrates overall functional architecture of the neural platform (NP) **199** of the data platform (first database) **14**. Neural platform **199** is broken down into components including a neural model **1101**, a neural network **1108**, and transaction processing platform **1102**.

[0102] Neural model **1101** uses past data **1104** to build neural network **1108** containing information representing learned relationships among a number of variables. Together, the learned relationships form a model of the behavior of the variables. Although a neural network is used in the preferred embodiment, any type of predictive modeling technique may be used without departing from the spirit and scope of the invention.

[0103] In this implementation, transaction processing platform **1102** performs three functions. A first function may be to make a prediction of profitability of fraud for each transaction made. Data may be fed into the neural network **1108** by feeding input data from various sources. Property data **1105** may be fed into the transaction process **1102** and into the neural network **1108** according to the direction of the arrows.

[0104] Prior pattern data **1106** may be fed into transaction process **1102** and into the neural network **1108**. Neural network **1108** may process data using rules and may output data results into the transaction process **1102** in near real time resulting in output data **1107** from the transaction process **1102**. In one embodiment, transaction process **1102** may create records and output those back into a data base or store containing the prior pattern history of transactions that summarize the past transactional patterns of the consumer. Regular updating occurs with each transaction completed.

[0105] Neural model **1101** may further comprise software (SW) adapted to form learning tasks through repetitive exposure to data such as past data **1104** and adjustment of internal weights that may be provided as constants in rules-based equations. The system promotes rapid model development and automated data analysis. Moreover, neural networks provide at least one statistical modeling technique that is capable of building models from data containing both linear and non-linear relationships.

[0106] While similar in concept to regression analysis, neural networks are able to capture nonlinearity and interactions among independent variables without prior specification. More particularly, while traditional regression analysis requires that nonlinear metrics and interactions be detected and specified manually, neural platform **199** performs these tasks automatically. For a more detailed description of neural networks, see D. E. Rumelhart et al, "Learning Representations by Back-Propagating Errors", Nature v. **323**, pp. 533-36 (**1986**), and R. Hecht-Nielsen, "Theory of the Backpropagation Neural Network", in Neural Networks for Perception, pp. 65-93 (**1992**), the teachings of which are incorporated herein by reference.

[0107] Referring now to FIG. **12**, an architectural view **1200** of the network interaction between a consumer and competing third party platforms is depicted. In this embodiment, a consumer operating from a consumer station **1201** using a computing appliance connects to the network and

visits a Website **1202** having an E Coupon field **1203**. An electronic coupon (e-coupon) bidding transaction begins with the user visiting the merchant Website **53** hosting the e coupon field.

[0108] A meta browser extension **1204** is invoked by the consumer to connect with a first database **1205**. In this process, the meta browser extension may look for and store the consumers' cookies to help determine the consumer's Web browsing and buying history, including the consumer's interests, demographics, and the like. This data is transmitted over the network to the first database **1205**. This helps determine which e-coupons may be most relevant to the consumer, and some of these may be presented to the user on the consumer's display device within the pop-up window afforded by the meta browser extension.

[0109] Once the consumer clicks on or hovers over a product or service, this may trigger a bid request invoked and communicated by the meta browser extension **1204** from the database **1205**. The bid request may include various pieces of data such as the product name, vendor, features, and product retail price. The bid request enables third party platforms **1207** (1-n) to assign a value to their c-coupon with specificity for an auction held between the TP platforms.

[0110] The bidding request is communicated from the 1st database **1205** to an auction platform **1206**. The auction platform **1206** submits the bid request and any accompanying data to a plurality of third-party platforms **1207** (1-n). Each notified platform may automatically submit e coupon bids in real-time to auction platform **1206**. The objective is to win at auction and be allowed to place their e-coupons and or c-coupon codes in c-coupon code entry field or form **1203** on the merchant's website **1202**.

[0111] The e-coupon providers bid on each product or service being clicked on or hovered over by the consumer as it is entered into to the first database by the Web browser extension or meta browser extension **1204**. The c-coupon placement right goes to the highest bidder, for example, the provider of the largest discount on the advertised product or service. The winning e coupon or e coupon code is served to the first database and forwarded by proxy to the e coupon form or field **1203** on the Web page **1202**. The discount s calculated at the Web page resulting in a new price of the product at check out.

[0112] In a preferred embodiment, the bidding happens automatically between digital auction services and the third-party e coupon providers. Statistical probability models can be used to determine the probability for a conversion by the consumer, defined as the consumer accepting the e-coupon code to apply the purchase given the consumer history data based upon the consumer's browsing and buying patterns stored in the first database (first data platform). This probability value may, in one embodiment, help providers to determine the amounts of their bids for competing to fill the e-coupon placement field on the Web page order.

[0113] It will be apparent with skill in the art that the coupon auction system of the present invention may be provided using some or all the elements described herein. The arrangement of elements and functionality thereof relative to the coupon auction system of the invention is described in different embodiments each of which is an implementation of the present invention. While the uses and methods are described in enabling detail herein, it is to be noted that many alterations could be made in the details of the construction and the arrangement of the elements with-

out departing from the spirit and scope of this invention. The present invention is limited only by the breadth of the claims below.

1. A financial transaction network comprising:
   a first server connected to the network, the first server coupled to at least one data repository containing financial account data belonging to individual ones of consumers;
   a second server connected to the network, the second server coupled to at least one data repository containing data supporting one or more types of electronic auctions;
   a server interface to the first server distributed over the network to individual ones of computing appliances connected to the network as end nodes, the computing appliances operated by the consumers; and
   a non-transitory medium resident on the first server, the non-transitory medium containing machine-readable code thereon, the code executable and instructing the first server to;
   (a) register financial account data for the individual ones of consumers in a consumer account registry on the first server;
   (b) solicit financial goals in the form of savings goals and or spending goals of the consumers relative transaction activity by the individual ones of consumers through the server interface and associating those goals to individual ones of the consumer's financial accounts;
   (c) creating one or more rules-based executable routines or commands and associating them to individual ones of the consumer accounts and goals of (b);
   (d) upon invocation by individual ones of the consumers of the server interface to the first server, sending a bid request to the second server requesting least one electronic auction event, the request including information defining the one or more financial goals of the consumers solicited in (b) to the second server, the auction event held among product and or service providers notified of the event by the second sever; and
   (e) upon selection by the consumer of a winning bid associated with one or more products or services offered by the providers, performing one or more calculations to achieve or to advance one or more of the consumer's financial goals.

2. The financial transaction network of claim **1**, wherein the financial accounts may be one or a combination of a rewards account, a scrip account, an electronic coupons or coupon codes account, a checking account, a credit account, a brokerage account, a savings account, a previously paid account; an insurance account, or a bartering account.

3. The financial transaction network of claim **1**, wherein the server interface to the first server is a browser extension or a meta browser extension nested in a browser application residing on the individual ones of the computing appliances.

4. The financial transaction network of claim **1**, wherein the individual ones of the computing appliances include a laptop computer, a smart phone, a tablet computer, a smart watch or ornament, a smart card, or a desktop computer.

5. The financial transaction network of claim **1**, wherein the electronic auction types may include a forward or ascending auction, a reverse auction, a Dutch or descending auction, a Vickrey or uniform second price auction, a continuous double auction (CDA), and or a synthetic continuous double auction (SCDA).

6. The financial transaction network of claim **1**, wherein in (a) registration includes generation of and assignment of a unique user account registration code and or a unique personal verification code for each consumer registering accounts.

7. The financial transaction network of claim **3**, wherein the browser extension or the meta-browser extension is nested in a Google Chrome browser, Opera browser, Microsoft Explorer browser, Apple Safari browser, or a Mozilla Firefox browser.

8. The financial transaction network of claim **1**, wherein the network is the Internet including one or more sub networks connected thereto.

9. The financial transaction network of claim **8**, wherein connected sub networks include one or more of a cable network, a wireless network, a land-line phone network, an intranet network, a local area network, a wide area network, an electronic positioning network, a satellite network, and or an X.25 network.

10. The financial transaction network of claim **1**, wherein in (b) savings or spending goals address a set financial amount and or a set range of financial amounts.

11. The financial transaction network of claim **1**, wherein in (c) one or more rules-based executable routines or commands are adapted to predict or detect and notify the consumer of fraud pattens across accounts.

12. The financial transaction network of claim **1**, wherein in (d) invocation of the server interface of the first server occurs when the consumer is visiting a third-party Web page to engage in at least one transaction.

13. The financial transaction network of claim **1**, wherein in (e) the one or more calculations trigger invocation of a surcharge on one or more transactions, the surcharge based upon a formula enabling the consumer to save or to spend an amount of funds or units of value.

14. The financial transaction network of claim **13**, wherein in (e) the consumers' financial goals are advanced over a set interval of time within which a frequency of transactions occurs.

15. The financial transaction network of claim **1**, wherein in (e) a financial goal encompasses one or a combination of increasing value of one or more consumer accounts, improving credit score of individual ones of consumers, and or distributing, donating, or rerouting a percentage of one or more financial transactions.

16. The financial transaction network of claim **12**, wherein the third-party Web page includes a coupon field, the field auto filled with a winning coupon or code value subtracted from the consumer's check out price.

17. The financial transaction network of claim **1**, wherein in (b) the financial goals are one or a combination of instant goals achieved during one transaction and longer-term goals achieved over a number of transactions.

18. The financial transaction network of claim **1** further including a step (f) for predicting patterns of the consumer through monitoring of consumer activities.

19. The financial transaction network of claim **18**, wherein in (f) the patterns include one or a combination of a pattern of fraud, a pattern of search for products or services, a pattern of clicking on or hovering over interactive Web page advertisements or interactive Web page content, a pattern of purchasing, a preference pattern for a transaction type, a pattern of account selection, a pattern of redeeming rewards and or coupons, a pattern of preferences for electronic auction types, a pattern of consumer geographic locations associated with consumer activities, a pattern of geographic locations of consumer frequented retail locations, and a pattern of costs in processing a transaction.

* * * * *