LOTTERY TRANSACTION DEVICE, SYSTEM AND METHOD WITH PAPERLESS WAGERING AND PAYMENT OF WINNINGS

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ABSTRACT
A lottery device, system and method incorporate lottery and non-lottery transaction capabilities within a single device that also provides for paperless wagering and payment of winnings. As part of the present invention, a transaction instrument facilitates typical consumer transactions as well as transactions related to lottery offerings and can use a reader terminal component to associate lottery tickets with the transaction instrument.
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CROSS-REFERENCE TO RELATED APPLICATIONS


FIELD OF THE INVENTION

[0002] The present invention relates to lottery systems, and more particularly to a system, method and device for conducting lottery and non-lottery transactions with paperless wagering and payment of winnings.

BACKGROUND OF THE INVENTION

[0003] Past and modern lottery and gaming systems are beset with problems. Gaming with physical tickets exposes lottery operators and system providers to losses due to theft of tickets and fraud. Physical tickets also require dispensers and/or kiosks within retail environments, which can overburden retailers in their efforts to free up space for saleable merchandise. Kiosks and other physical devices are also expensive and contribute to high infrastructure costs for retailers and lottery and/or gaming service providers who must buy, install and manage these devices. In addition, lottery service providers must build, maintain and upgrade proprietary networks in order to service their customers.

[0004] The processing of lottery purchases and winnings is also an arcane function. When playslips and/or cash are used in the purchase of lottery offerings, the participating retailer must generally provide a manned POS terminal. If a given ticket is a winner and associated with a “low tier” jackpot, the participating retailer must be prepared to make payment to the player presenting the ticket for redemption, even if the ticket was not purchased at the retailer’s location. While the redeeming retailer is reimbursed by the lottery operator (e.g., the state running the lottery), and further while the redeeming retailer can net its lottery proceeds against payouts during a given week or other time period, it is possible that the retailer can be temporarily out-of-pocket for the difference between paid winnings and lottery sales. Further, the retailer must staff the POS to handle the redemption transactions. For high tier winnings, a player must fill out paperwork at a lottery claim center, where the lottery operator performs various background checks to confirm the winner, taxes and other withholding are optionally deducted, and the winner is then issued a check. Such steps are inconvenient to the winner, and add to the cost and oversight requirements of lottery operators.

[0005] In addition to the above, lottery and gaming systems generally involve anonymous players. Not only does this facilitate undesirable behaviors (e.g., addiction, tax evasion), but it does not allow the lottery operator or retailer to know anything meaningful about their market. Demographic and other information could be collected about their players, lotteries and retail distributors could more efficiently and profitably manage their operations.

[0006] Lottery systems are known whereby customers can purchase tickets at a dedicated lottery terminal in a convenience store or similar establishment. Each dedicated lottery terminal communicates with a central lottery server to exchange information and instructions associated with a given lottery transaction.

[0007] In the draw lottery ticket example, users can select one or more numbers actively or have the central lottery server randomly select numbers for them in what is sometimes referred to as a “quick pick” transaction. The dedicated terminal sends selected numbers to the central server to be stored and then receives directions from the central server to print the associated lottery ticket locally for the consumer. The lottery ticket can contain a barcode, serial number or other identifying feature unique to the ticket for validation and fraud prevention purposes.

[0008] In the typical lottery ticket distribution arrangement, convenience stores, liquor stores, grocery and drug stores, among others, act as agents for the lottery system provider, which is usually a governmental body. In such stores, lottery kiosks or terminals are typically physically separated from the main point-of-sale (POS) area where merchandise sales are transacted. Such separation facilitates check-out line movement and the separation of respective merchandise and lottery transactions for accounting purposes.

[0009] Despite the revenue and increased foot traffic received, lottery distributors are finding that they often cannot support the floor or counter space requirements for dedicated lottery terminals. They also find it more difficult to train staff on multiple machines, or to satisfy customers who wish to minimize check-out line waiting while being able to purchase both merchandise and lottery tickets together. Further, governments are finding it more difficult to fund and maintain dedicated lottery terminals, and feel they may be foregoing revenue opportunities because would-be lottery distributors do not have the physical and personnel resources to operate dedicated lottery terminals.

SUMMARY OF THE PRESENT INVENTION

[0010] The present invention, in part, solves the above problems by providing a lottery device, system and method which incorporates lottery and non-lottery transaction capabilities within a single, network-connected device, whereby the device communicates lottery transaction information to a central lottery server, while separately managing non-lottery transaction information, and further permitting paperless wagering and payment of winnings. The system of the present invention provides a lottery network within which one or more devices of the invention can operate. The lottery network includes a back-end transaction processor and an interface for introducing new game types into the lottery system. In this way, a lottery distributor can not only offer a range of
games that changes over time, but the distributor can choose which games to offer from an ever-changing menu of game options over different device types. The present invention also allows for the incorporation of phone card, gift card, loyalty card, player card, transaction card or other desirable retailer processing and delivery capabilities via the POS device.

[0011] In one embodiment of the present invention, a POS device is provided that is capable of conducting lottery and non-lottery transactions, a lottery data processing system is part of, or operatively connected to, the POS device, wherein the lottery data processing system can store and process lottery transaction information, and a lottery gaming server is provided for offering various lottery games to be played and displayed on the POS device. Lottery and non-lottery software for enabling the POS device to conduct lottery and non-lottery transactions and select one or more lottery games for use is also provided. The POS devices include CPUs and monitors or displays to enable touch-screen or keyboard entry of menu selections in typically a browser-based environment.

[0012] In one embodiment of the present invention, each POS device is also in communication with a POS server, which can filter lottery transaction information for the lottery server and can retain merchandise transaction information for local or regional processing depending on the business preferences of the lottery distributor.

[0013] In one aspect, the present invention further provides a claims management system and process whereby a lottery system provider (LSP) such as GTECH Corporation, for example, can interact with a lottery operator (LO), such as a state lottery, and use funds that are pre-paid by the LO and held in an LSP account to pay winnings to a lottery player. In one embodiment of the present invention, winnings can be paid via a transaction instrument such as a debit or other transaction card, which can be a MasterCard™ or Visa™ branded debit card or a privately labeled debit card, for example. The winning funds are transferred by the LO to the LSP at the time of the winner selection process. The LSP pays the winning amount upon presentment, reconciliation and settlement, and the funds are made accessible to the player on the transaction instrument. In one embodiment of the present invention, winnings can be applied to a previously issued transaction instrument that initially had no payment transaction capabilities. For example, a lottery player can be issued a player loyalty card that stores favorize wagers and other personal playing information, and once a player wins on a play, the winnings can be applied to a financial account that is established and associated with the previously issued loyalty card. In this way, the loyalty card is converted to a transaction instrument that can be used for lottery and non-lottery purchases.

[0014] In one embodiment of the present invention, interest on the funds begins to accumulate when the winner selection is made and the monies are transferred from the LO to the LSP. The interest can be divided among entities pursuant to given requirements for the jurisdiction or as the situation dictates. A player is free to use the winnings that are credited onto his or her debit card anywhere, including for purchases of standard consumer (e.g., non-lottery) products and offerings as well as for purchases of lottery offerings. For purposes of the present disclosure, the term “lottery offering” means a government-sponsored lottery or public gaming offering, including traditional lottery games such as instant lottery tickets and online or draw-type lottery tickets, video lottery games and other casino-type games that may be government sponsored, games of chance and games of skill, for example. Also, a lottery transaction means a transaction related to a lottery offering, a lottery player means a player of a lottery offering, and a lottery wager means a wager in connection with a lottery offering.

[0015] In part, the present invention thus provides the lottery player with the convenience of a card, such as a debit card, that can provide a variety of benefits. For example, the user card can be automatically entered into a Visa™ or other branded card affinity program, lottery wagers can be automatically deducted from the account and the card can be used anywhere a creditor debit card is accepted. Further, the player can be entered into a “Player Club” and use the card as a player card for benefits such as, for example, having an account accessible via web site for setting up favorite numbers, developing a syndicate account or accounts, entering into second chance drawings, associating purchased tickets with the account, arranging for automatic payments (i.e., never having to check a hard copy ticket to know if the player is a winner), receiving automatic alerts via e-mail, receiving an IRS 1099 form identifying all non-winners for tax deduction, experiencing express transactions at retail, and experiencing new game content such as fantasy football and other fantasy sports. Even further, the present invention can facilitate self-monitoring and independent monitoring of individual behavior to promote responsible gaming.

[0016] In another aspect, the present invention provides a transaction instrument (TI) such as a multi-purpose transaction card (MPTC), bearing one or more indicia that facilitate standard consumer transactions as well as lottery transactions. For example, in one embodiment of the invention, the MPTC can be provided with: (1) a magnetic stripe for “open network” transactions, such as purchasing groceries, electronics or other consumer items, and (2) a barcode for being scanned by a retailer in connection with a lottery offering for “closed network” transactions, wherein the barcode can be representative of the user’s pre-established account, favorite wager, quick picks, specific numbers, wagering amounts, discounts, benefits, promotions and so forth. When the MPTC has value associated with it, it is a value-applied transaction instrument (VATT).

[0017] In another aspect of the present invention, the MPTC can be issued at different times to different players. For example, the MPTC can be issued for high-tier (or low-tier, or both) winners at the time the winner seeks to redeem a winning play, in which case the MPTC can be formally registered with the individual winner by obtaining and recording player information at the time of redemption. Player information can include name, address, telephone number, e-mail address and other contact information, in addition to other relevant information required for legal or future transactional purposes. The player information can be obtained from a valid driver’s license, for example. Further, the player information can be stored and accessible via the Internet or other network to allow the player to access, update and/or change the player information. The player can select or be provided with a username and password or other known authentication means for preventing unauthorized access to the player’s account information. The player can optionally remain anonymous but still record player-related information such as favorite wagers by having the account associated with the MPTC or other identifier that does not reveal the player’s identity.
Separately, the MPTC can be issued to the player at a point of purchase (POP), whether the player is participating in a lottery offering or not. The player may then use information on the MPTC, such as a code or identification information, to formally register the MPTC in the player’s name or with player-specific information online after leaving the POP. The player may fund the MPTC online or in person at the POP, and may subsequently use the MPTC for general or lottery transactions, as well as to add credit to the account through cash or credit deposits, or through winnings from lottery offerings.

The form factor of the MPTC can preferably be similar to that of a standard credit, debit or stored value card, and can operate similarly thereto. The cards can implement contact technology such as magnetic stripes, and/or contactless technology such as scannable barcodes, radio frequency identification (RFID) tags or Bluetooth™, for example. In one embodiment of the present invention, mobile communications devices can be employed as the T1 or VATI instead of cards, whereby barcodes may be displayed on the visual display of the devices and a communication implementing object other than a magnetic stripe is incorporated for commercial transactions. In a further aspect of the present invention, the T1 or VATI can be the player themselves or a part of the player, wherein the player’s personal biological information (e.g., fingerprint, retina scan, voice or other human biologically unique information) can be recorded and stored with his or her account as part of his or her player information, and then compared with the biometric information measured when the user desires to initiate a transaction using the system of the present invention.

In another aspect of the present invention, rewards and customer relationship management (CRM) features can be incorporated. Thus, whereas the player has traditionally been anonymous, the present invention facilitates knowing what the purchasing and gaming habits are of the card holder, and can allow the card holder to earn rewards and build credits towards desirable products and services, for example. In one embodiment of the present invention, the player can remain anonymous while still earning monetary prizes and/or non-monetary rewards.

In providing the above, the present invention facilitates the operation of a gaming system without kiosks or point of sale terminals necessarily adapted for lottery transactions. Point-of-sale terminals are still employed in one implementation of the present invention, but such terminals can be ordinary retail terminals provided with reader technology to facilitate reading and writing of information to the transaction instrument. Costs of operation for the LSP are lowered, which in turn reduces costs for lottery operators and retailers. Profits are improved as well, with the ability to earn interest from winnings managed in a LSP account as well as the ability to generate revenue through better knowledge of the lottery customer. In this regard, the present invention provides a method for a lottery system operator to derive non-transaction related earnings without providing a fee to the cardholder.

In addition to the above, lotteries and players can employ new lottery offerings using the transaction instrument (e.g., a lottery-branded card). Further, the present invention improves tracking of wagering customer sessions. Even further, the present invention facilitates player convenience and security through the employment of biometric measures as described below.

FIG. 1 is a schematic diagram illustrating one embodiment of a system of the present invention incorporating a lottery system backend and a traditional commercial transaction system backend.

FIGS. 2A and 2B are flow diagrams illustrating transaction instrument issuance and transaction instrument usage process steps in accordance with one aspect of the present invention.

FIG. 3 is a diagram showing one conceptual architectural layout of a sample implementation in connection with the present invention.

FIG. 4 is a diagram a sample architectural layout of a lottery network in connection with the system of the present invention.

FIGS. 5A through 5D are schematics of sample device layouts in accordance with several embodiments of the present invention.

FIG. 6 is a simplified block diagram of the lottery platform architecture layers in connection with one embodiment of the present invention.

FIG. 7 is a block diagram of the operational components of one embodiment of the present invention.

FIG. 8 is a diagram illustrating a sample implementation in accordance with a particular embodiment of the present invention.

FIG. 9 is a diagram illustrating a sample implementation of the present invention across multiple distributor types in accordance with one embodiment of the system of the present invention.

FIG. 10 shows a series of schematic flow diagrams illustrating different embodiments of transaction instrument conversions in accordance with the present invention.

As used in the present application, the term “transaction instrument” can include or be associated with, by way of example and without limitation, a debit card, a credit card, a smart card, a gift card, a pre-paid card, a stored value card, a bank card, a “frequent-player” card, indicia such as a bar code or a magnetic stripe, a human biological identifier, a voucher, a radio frequency identification (RFID) tag or transmitter, an ATM card, a combination card, any other coded indicia, Bluetooth™-enhanced devices, mobile communications devices adapted for use with the above, or combinations of any of the above. The transaction instrument is or can represent a personal identifier specific to an individual person, as exemplified above. The transaction instrument can be associated with a unique identifier such as a credit or debit card number, serial number, IP address, or e-mail address, for example.

The transaction instrument can be credited through an account associated with the transaction instrument, such as by paying cash, transferring funds from another account, and/or transferring winnings from lottery offerings into the account. The account associated with the transaction instrument can be, for example, a debit or credit card account, a bank account, a savings account, a lottery account, a checking account, and/or another financial account. The account can be a financial institution account (e.g., Bank of America™).
checking, savings or brokerage account) or a financial account maintained independently of a financial institution (e.g., lottery account).

[0035] In one embodiment of the present invention, the transaction instrument (TI) takes the form of a multi-purpose transaction card (MPTC) as referenced above. An example such card is shown at 115 in FIG. 1, with a machine readable barcode 116 on one side of the card and a machine readable magnetic stripe 117 on the other side. It will be appreciated that these and other indicia may appear on the same side of the card in an alternative embodiment of the present invention. In one embodiment of the present invention, the MPTC includes indicia in the form of a visible computer chip on one face of the card, which is employed when the MPTC operates as a “smart card” capable of being read and written to by a reader or terminal in accordance with the present invention. The smart card implementation can employ either a local card memory or a complete local central processing unit (CPU) for added data storage and processing capability.

[0036] As further shown in FIG. 1, paperless wagering is facilitated in the system 110 of the present invention, which can operate with or without dedicated kiosks or lottery adapted POS terminals. POS terminal 120 can be a traditional POS terminal with transaction capabilities, employing a terminal processor (i.e., a central processing unit or CPU) 122 and a reader component 124, which, for exemplary purposes, can be in the form of a bar code scanner. The POS terminal 120 is connected via one or more networks 126 to an association network 150 (such as MasterCard™/VISA™ network) and a lottery service provider network 160. In one embodiment of the present invention, communications intended for the association network 150 from the terminal 120 travel over network 160 to lottery host 161 before being sent to the association network.

[0037] The association network 150 manages transactions unrelated to lottery offerings in the customary way through communications between the card issuing bank 152, the transaction acquiring bank 154 and the association 156 (e.g., MasterCard™/VISA™). The card issuing bank can include a bank or financial institution data processing system 155 for managing account transactions. The financial institution data processing system includes programming for, among other things, initiating the opening of a financial institution account. In one embodiment of the present invention, an account can be opened and funded with a balance in the amount of winnings from a lottery offering.

[0038] Lottery service provider network 160 connects to a lottery data processing system 165, which can incorporate lottery host 161, and can further coordinate and/or run various lottery service provider functions such as player and account management component 162, gaming/transaction processing component 164, database 166, customer relationship management (CRM) component 176, favorite wagers component 172, quick picks component 174, loyalty rewards component 170 and sports betting component 168. Lottery host 161 can include, for example, programming for validating winning tickets, generating ticket data, randomizing winners, benefits and prizes, managing lottery offerings and communications. The lottery data processing system 165 can communicate with the financial institution data processing system. In one embodiment, the lottery data processing system 165 communicates the winnings from a lottery offering to the financial institution data processing system in order to fund a newly created financial institution account, as described in more detail hereinafter. Third party application providers 35 are also shown in FIG. 1 in communication with network 126, and such providers can provide additional game offerings for selection by the retailer and/or user depending upon implementation of the present invention, as described more completely below.

[0039] In one aspect, the system of the present invention encompasses the full cycle of transaction card life, from creation and activation of the card as a multi-purpose transaction card, to conversion of the card into a value card (e.g., VATI discussed elsewhere herein) representing winnings from a lottery offering, to enrollment of the card with player, account, transaction and customer relationship management features, to redemption and application of prizes, winnings and other transaction amounts, to end of card life. Further, it will be appreciated that, while it is actually a human player or user who is technically enrolled with the system of the present invention, the player or user is represented in the system by one or more personal identifiers. The personal identifiers can be informational or biometric, as described elsewhere herein. Further, the present invention contemplates that a transaction instrument may first take the form of a traditional lottery player card or loyalty card prior to being converted to a card that can be used to fund lottery and non-lottery purchases.

[0040] Regarding system architecture, the system of the present invention can optionally be established so as to operate using a client-server architecture, a distributed architecture, or a combination of the two. By way of example, for lottery system transactions, in the client-server architecture, using FIG. 1 as an example, the terminal 120 receives information about a transaction such as by scanning or reading a card, and then queries the lottery system host 161 regarding the value, game or reward involved. The data surrounding the transaction is centrally located with the lottery system in database 166, and the effect of reading the card is to essentially point to the lottery system maintained data, such that there is no transaction performed on the card and no value is stored on the card. Every time the card is used, the lottery host 161 queries the lottery system database 166 to determine if prizes, rewards or other benefits must be accommodated. In one embodiment of the present invention, benefits can be in terms of cash (i.e., “prizes” such as $20 credit) or can be in terms of non-cash items (i.e., “rewards” such as coupons, services, physical products, etc.). For example, upon the reading of a card at the terminal 120, the host queries the data for the player associated with the card, and if the player is entitled to a random benefit as a result of using the card, the host instructs the system to issue the benefit in the player’s favor. In this example, if the benefit is a ten percent discount reward for a hotel, the player may receive a message (such as an e-mail to a registered e-mail account associated with the player’s account) indicating what the player has won. Further, the discount information can be electronically associated with the player account (by adding an entry in the data maintained for the player, for example) such that the user need not maintain paper coupons or other hard copy representations of the reward. In the case of a cash prize, the amount can be credited to the player’s financial account for later use.

[0041] In an alternative embodiment, the present invention operates using a distributed system architecture. In this embodiment, the POS terminal 120 and the MPTC transact value at the point of transaction without referring back to the lottery host. The information and the value representation are transferred and processed in real-time or near real-time as the
transaction is occurring. The terminal (or group of terminals, such as in the embodiment where a single retailer has multiple terminals) can have a distributed host (i.e., not the centrally located lottery host 161) which can act to issue rewards, prizes and other benefits locally. Smart cards and contactless cards can be employed in this embodiment, which may increase the cost of deployment, but can also provide greater flexibility in system operation and the ability to meet more individual customer needs.

[0042] The present invention may further offer a combination client-server/distributed system architecture. In this hybrid architecture, the terminal and the MPTC can transact the value at the point of transaction as in the distributed system, but the data collected by the terminal is regularly sent to the lottery host 61 (e.g., in batches) to reconcile the card and central database information with the locally collected information. Such an embodiment may be preferred by retailers with multiple locations, for example, and can deploy smart cards as the preferred MPTC card type.

[0043] It will be appreciated that the POS terminal can be a network-connected personal computer in one embodiment of the present invention, wherein the computer can be located in a retail establishment or even on the user’s person (e.g., a mobile communications device) or in the user’s own home (e.g., a personal computer). Since electronic commerce permits nearly ubiquitous transactions, any electronic communications device that can access the network of the present invention can be considered a POS terminal for purposes of the present disclosure. In another embodiment, the terminal is and/or includes a reader terminal component (i.e., the terminal is a self-contained processing device or terminal that is adapted with a reader unit), wherein the reader component is capable of reading and/or writing to magnetic stripes, chips and/or barcodes but not capable of reading biographical identifiers (i.e., biometric signatures). In another embodiment, the terminal is and/or includes a reader terminal component that can read and/or write to magnetic stripes, chips and/or barcodes as well as biographical identifiers. In a further embodiment, the terminal is and/or includes a reader terminal component that has no magnetic stripe, chip or barcode reading or writing capability but can read biometric information in order to personally identify a user of the present invention.

[0044] Reader components that can be employed as and/or with the terminals of the present invention can include, for example, a magnetic stripe reader, a barcode scanner, a magnetic stripe or other smart card writer for writing information to a card, a fingerprint reader, a retinal eye scanner or other reader types discussed elsewhere herein. The reader component can be employed as and/or with an attended POS terminal in a retail store or other commercial location, a self-contained kiosk in a retail store or other commercial location, or the mobile equivalent of the self-contained kiosk (e.g., a home personal computer or user mobile communication device). The reader component can be interfaced with the terminal by any of a variety of known computer interfaces, including USB port, PCMCIA slot, parallel port, floppy disk slot, infrared IRDA port, RS232 serial port or keyboard, for example.

[0045] The present invention can accommodate specific card-type protocols according to the card-type employed. Thus, for example, the present invention employs barcode and magnetic stripe communication protocols to enable the implementation of a system that can handle MPTCs with barcode and magnetic stripe indicia thereon. Smart card and contactless smart card (e.g., RFID) communication protocols are also provided by the present invention for deployments that involve MPTCs with smart card and/or contactless capabilities. In addition, appropriate memory and processing power are provided depending upon the card and processing system requirements for any given deployment. Further, appropriate security hardware and software measures are employed as will be appreciated in accordance with typical measures provided for electronic commerce transactions.

[0046] In one embodiment of the present invention, the terminal includes a computer processor and reader terminal component, wherein the computer processor is operable to execute instructions for conducting lottery transactions and non-lottery transactions, associating a transaction amount with a transaction card and associating the one or more lottery tickets with the transaction card. The computer processor can further be operable to execute instructions for communicating with a financial institution data processing system having programming for initiating the opening of a financial account associated with the transaction card, wherein the financial institution account is funded with a balance in the amount of the first funding amount. The computer processor can further be operable to execute instructions for applying winnings associated with one or more read lottery tickets with the read transaction card. The executable instructions can be embodied, for example, in the form of a physical memory on a hard drive, floppy disk drive, universal serial bus drive, CD-ROM, downloadable program stored in physical memory and other known physical memory forms, and are not embodied as carrier waves. Some or all of the operations may be performed by one or more processors executing instructions tangibly embodied in a signal. The processing may be implemented using analog and/or digital hardware or techniques, either alone or in cooperation with one or more processors executing instructions.

[0047] The terminal, in whatever form, acts as the link between the user of the personally identifying transaction instrument (e.g., MPTC or biographical identifier) and the computing system that executes the software of the present invention. The software provides the programming for executing the various functions and features of the present invention including, by way of example and not limitation, communications, security, credit or debit card processing via financial institution network and data processing system, benefit operation including rewards and prizes, randomization, virtual ticket book generation, copy/rewriting operation, account management, transaction management, reporting, settlement, point-of-sale, player management, lottery offering management and hardware management. The present invention software is further adapted appropriately to interface with third party software that may accompany any third party hardware used in accordance with the present invention, such as, for example, reader software associated with a hardware reader component.

[0048] As shown in FIG. 2A, cards are issued and used in one embodiment of the present invention. In process 180, a card provider produces the MPTCs as at 182 and distributes them to lottery claim centers as at 184. When there is a high tier winner (or optionally any winner) of a lottery offering, a lottery clerk at the claim center provides a converted MPTC (i.e., making the MPTC a value-applied transaction instrument, or VATI) to the winner as at 186 and the player can select a personal identification number (PIN) for use with the card as at 188. The cards as initially produced can have more
than one transaction-enabling indicia thereupon, such as the magnetic stripe and barcode described above. Such indicia can enable both lottery and non-lottery transactions assuming the cards are active and readable by machines operated as part of a lottery and non-lottery system, for example. However, when initially produced, the cards have no cash value and may not be used for credit, debit or stored value purchases. In one embodiment of the present invention, the winner of any lottery offering can be provided with a card.

When the claims center clerk is notified of the winner of the lottery offering, such as when the winning ticket holder appears to claim the prize winnings, the clerk can verify the ticket through the lottery network as is known in the art, and can then apply the winning amount (e.g., as sent from the lottery operator to the lottery system provider) to the card. For purposes of the present disclosure, applying funds or a funding amount to a card can mean applying funds to an account associated with the card, or directly to the card itself. The funds can be prizes awarded as a result of a gaming event, such as a lottery drawing or instant ticket win (whether high tier or low tier, and whether a virtual or a real world ticket). The funds used to fund the account or the card can optionally be provided through another type of transaction other than a win from a lottery offering, such as, for example, when the user wins a prize associated with a non-lottery purchase as described elsewhere herein (i.e., a non-lottery offering).

The account associated with the card can be a financial institution account established by financial institution data processing system 155. When the prize claimant appears at the claim center, the claimant can establish the account for use with the present invention. The account can be established by a computer associated with the lottery data processing system sending a communication over a communication link such as a communications network, for example, to a financial institution data processing system to open a new account and/or request the opening of a new account. In one embodiment of the present invention, the account is established in the name of the prize claimant. In another embodiment of the present invention, the account is established in the name of an account custodian, which can be the lottery service provider in a specific embodiment. In yet another embodiment of the present invention, the financial institution account is opened using a wagering syndicate identifier so as to permit syndicate wagering as described elsewhere herein. The funds used to open the account can travel directly from the lottery system operator (e.g., the state holding the lottery drawing won by the prize claimant) to the financial institution, such as by wire or other known method. Alternatively, the funds can be delivered from the lottery system operator to the lottery data processing system by wire or other known method. The lottery data processing system can then fund the financial account in the amount of the winnings. In one embodiment of the present invention, the funding amount for the financial account is less than the actual prize winnings, because taxes, expenses, fees and any other deductions may be taken prior to the funds being deposited in the account.

In one embodiment of this aspect of the present invention, a request is issued from a lottery data processing system to a financial institution data processing system to open an interest-bearing financial institution account associated with winnings from a lottery or non-lottery offering. A first funding amount is communicated from the lottery data processing system to the financial institution data processing system based on the winnings in order to fund the account, with the account having a balance initially in the amount of the first funding amount. The first funding amount can be the amount of the total winnings, or a different amount based upon any deductions, expenses, fees, taxes or other deductions having been withdrawn. A card machine as described herein can associate the account with a multi-purpose transaction card by scanning or otherwise transferring information to the card via the card indicia, which enables the card to be used by a consumer (e.g., the winner) for lottery transactions as well as non-lottery transactions.

As the card is used for transactions (e.g., purchases, wagers, top-ups), the account balance can be increased or reduced accordingly. Further, interest earned on the account over time can be applied to a custodian earning account not associated with the consumer. In this way, the present invention provides for the derivation of non-transaction related earnings from a winning game play.

In one embodiment of the present invention, once the funds are in the account, the clerk employs a machine to convert the MPTC to a value-applied transaction instrument (VATI). The machine can be a card writer that writes information to the MPTC via magnetic stripe, bar code, chip or other method, wherein the information associates the financial account with the card to enable the card to be used for purchase and other transactions (e.g., as a debit card). This is illustrated, for example, in process diagram 310 in FIG. 10, where the transaction instrument is shown initially without a lottery or a non-lottery account, and then after processing the winnings to the instrument, it can be used for non-lottery and lottery transactions.

In another embodiment of the present invention, no financial institution account is opened, and the funds are essentially applied directly to the card to enable the card to function as a pure stored value type of card. In this embodiment of the invention, the card is converted to a VATI without an associated financial institution account, and the card acts as a bearer instrument representing the equivalent of cash. In such an embodiment, the VATI can be used in a system operating using a client-server architecture, distributed architecture or combination architecture described above. Depending upon the desired system implementation, the converted VATI card can be such that it only works in a client-server architecture such as described above, or such that it works equally well in any of the system architectures described above.

In another embodiment of the invention where cards are not employed and one or more of the user’s biological identifiers (e.g., eye scan, fingerprint, voice) is used as the transaction instrument, the identifier employed becomes the value added transaction instrument or VATI. In such embodiment, the card can record biometric information from the user at the time of prize redemption, and instead of issuing a converted card to the user, the clerk operates the machine to open the financial account and fund the account in the amount of the winnings. The clerk then associates the account with the recorded biometric information such that, whenever the user employs the biological identifier for the purposes of a transaction, the identifier is, in fact, the VATI, and is capable of depositing and withdrawing funds from the account, as well as participating in the other aspects of the present invention. In one embodiment of the present invention, when the user appears at the claim center to redeem his or her prize, the user can be offered the option of receiving a VATI in the form
of a card as the transaction instrument, a mobile communications device as the VATI, or the user's own biological identifier as the VATI.

[0056] Once established and activated, the user can use the VATI as a type of debit or stored value card, as the card has been credited in the amount of winnings, less any transaction fees, required tax payments or other fees that might apply at the time of redemption. At the time of card issuance, age verification for responsible gaming purposes can occur as well.

[0057] In addition to being activated for transaction purposes, the VATI can be used by the user to establish favorite numbers, favorite wagers, and other personally appealing features using the CRM component of the present invention. In one embodiment, the user can access a web site using the VATI and the user’s PIN for such purposes, and can establish a lottery system account associated with the VATI and/or the player’s name. The user can also elect for any future winnings from lottery offerings or other transactions to be applied to the account.

[0058] With reference to FIG. 2B, on the association network 150, when the player accesses the non-lottery transaction feature of the VATI, such as by having the magnetic stripe on the card swiped at the retail outlet and entering the PIN as at 190, the transaction is routed on an existing network to an issuing bank as at 191 to authorize the transaction, and the normal reconciliation and settlement process occurs as at 192 once the issuing bank approves or denies the transaction.

[0059] On the lottery service provider (LSP) network 160, when the player accesses the lottery feature of the VATI, such as by having a barcode on the card scanned at the retail outlet as at 193, the lottery host sends a payment request to the issuing bank as at 194. The issuing bank approves or denies the transaction as at 195 and the reconciliation and settlement process takes place as at 196.

[0060] In one embodiment of the present invention, a single indicia can be used to conduct lottery and non-lottery transactions (with appropriate split routing to each network) and the card would therefore require no other indicia. Thus, as shown in FIG. 2B, for example, the reading of the bar code 193 can result in lottery transactions moving through lottery network as described above, and non-lottery transactions moving through association network 150 via the dashed arrow. As shown therein, the merchant acquirer routes the transaction to the association as at step 197, the association routes to the issuing bank as at step 198 and the issuing bank approves or denies the transaction as at 199. In an alternative embodiment of the present invention, the magnetic stripe can be used to conduct all types of transactions (e.g., lottery and non-lottery transactions, with appropriate split routing to each network) and the card would therefore require no barcode. In one specific embodiment, the swiping of the magnetic stripe on the card and/or the reading of the barcode on the card would simultaneously divide non-lottery transactions into the association network and lottery transactions into the lottery provider network. In a further embodiment, a single barcode on a mobile communications device can be employed.

[0061] The split routing of transactions with an MPTC and/or VATI benefits the lottery service provider, the lottery operator and the lottery retailer. In one embodiment of the invention, both low tier and high tier winnings can be managed the same way. Optional enrollment features may also include player favorite numbers, auto-pay, loyalty awards and cashless or paperless wager options. In one embodiment of the present invention, different amounts of reward points or loyalty points can be awarded for an open loop transaction versus a closed loop transaction. Thus, for example, if a user has $100 on his or her MPTC and spends $50 on an open loop transaction, he or she may receive fifty loyalty points, whereas if the user spends the other $50 on lottery transactions, he or she may receive one hundred loyalty points. Such differing rewards point amounts can be changed by an administrator of the system based on desired incentives.

[0062] Business rules can determine the revenue distribution from the system. In one embodiment, the lottery service provider keeps the interest that is earned on the funds that are held in the service until they are paid to the winner. In one embodiment of the present invention, the winner may be given the option at the time of receiving the VATI card to either have the card registered in a lottery service provider financial account, whereby the user can maintain anonymity, or registered in the personal name of the user, to facilitate better personalization and qualify the user to receive federal or state tax documentation and recording features (such as, for example, receiving a United States tax form 1099 to deduct wagering losses). Further, the transaction processor may keep any transaction fees that are paid. Service charges are a further source of potential revenue. Inactive accounts can be turned over to the government at time periods that vary from jurisdiction to jurisdiction.

[0063] In a further embodiment of the present invention, some or all prizes for a particular game can be designated as payable exclusively via a card as provided in accordance with the present invention. Further, a prize can be increased if a person puts the prize on a VATI card rather than asks for cash. (e.g., $100 winner becomes $105 if payment is made via debit card). Payment via card reduces the risk of fraud associated with paper tickets and paper validation receipts.

[0064] In this regard, the present invention contemplates additional consumer protection and/or fraud prevention measures that can be employed with or without the VATI described herein. With regard to online games, an identifier (e.g., a random symbol generated by the lottery host) can be automatically assigned to a player at the outset of an online game, and this identifier follows the physical game ticket (where employed) through the game play process. According to this aspect of the present invention, a player receipt would have any type of randomly generated identifier (such as a three letter sequence (e.g., “ABC”)) printed on the top of the ticket receipt, and a copy of the ticket identifier would be stored in the transaction record. In one embodiment of this aspect of the present invention, upon the reader terminal component reading a transaction card, the terminal can direct a printer to print the player’s name on the wager receipt if his or her name has been stored in connection with the card account. Further if a player has stored favorite wagers with the account, he or she can identify favorite wagers to be played, whereupon the system of the present invention recalls the favorite wagers upon reading the card, and further prints the player’s name on the ticket receipt. If the ticket is a winner, the winner selection process would copy this identifier to the winner’s file and the identifier would be printed on the validation when the customer presented the ticket for validation. In an alternative embodiment of this aspect of the present invention, the player could use a single identifier on their card, which can be scanned by the retailer at the time of the transaction each time the player purchases an online game.
ticket. In this embodiment, the retailer simply scans the card using a barcode reader, and the personal identifier enables the player to be sure that the retailer is returning the correct validation receipt.

Regarding the presentation and reading of the card at a point-of-sale or other terminal, the present invention incorporates reader technology as disclosed above. In one embodiment of the present invention, as shown in FIG. 1, for example, one or more reader terminals 120 are provided in communication with the lottery data processing system and the financial institution data processing system. The reader terminal is capable of reading at least a portion of the VATI and communicating a transaction amount to the financial institution data processing system in order to change the balance in the financial institution account. For example, if the user of the VATI is purchasing $50 worth of merchandise, the reader can scan a barcode or read the magnetic stripe on the card and communicate with the financial institution data processing system to deduct $50 from the financial account balance. Any associated and/or other transaction fees accompanying transactions contemplated by the present invention will be assumed to be present, but will not be discussed in detail, such as fees are ordinarily accommodated and understood with credit and debit transactions. The reader terminal can operate equally well in handling account deposits (such as where the user wishes to “top up” his or her account using other funds, which may be cash or another credit card, for example), account withdrawals, lottery transactions, non-lottery transactions, application of prize amounts to the account balance and other transactions. A top-up or deposit transaction is illustrated in diagram 312 of FIG. 10, where the instrument is already tied to a lottery and non-lottery account, and funds are deposited and associated with the lottery or non-lottery account. When applying prize winnings, the terminal can first communicate with the lottery data processing system via lottery network in order to validate the ticket or game identifier associated with the winnings before credit the associated account. Also, in the embodiment where no financial account is employed but wherein the VATI holds the cash equivalent value of the balance, the reader terminal can conduct the same types of operations (i.e., withdrawals, deposits, etc.) through the VATI.

With regard to lottery transactions, the reader terminal can read at least a portion of the VATI in order to associate a wager with the VATI without paper or cash. This can occur, for example, by sending a communication over the lottery network to the lottery data processing system 165, whereupon the wager is noted and associated with the player’s lottery system account. The reader can further read at least a portion of the VATI in order to initiate a winning wager redemption process without paper or cash. This can occur, for example, by communicating a query to the lottery host to determine whether the winning ticket or wager representation is valid, and if so, the host can authorize the terminal to communicate either with the card or the financial account associated with the card in order to apply the winnings. In one embodiment of the present invention, the lottery data processing system communicates the winning amount to be applied to the financial account directly, without communicating back through the terminal. In a further embodiment of the present invention, the POS device 122 incorporates the processing, memory and functionality of lottery data processing system 165 without the need for network 126.

Employing Biometrics

In a further aspect of the present invention, biometric equipment and processes are employed to streamline ticket sales as well as to promote gaming wager data entry and ticket validation at the retailer. This aspect of the present invention provides a method and device for automated entry of wager data and subsequent validation of the winning data between a player and an online gaming terminal using an electronic online database and at least one player-bid biometric sample.

Biometric techniques and equipment have been employed for rapid and accurate identification and authentication of individuals within fields such as border control, building access control, identity verification for computer login privileges and authorizing electronic transactions, for example. Biometric techniques provide convenience for the individual by eliminating the need for carrying a physical form of identification and allowing fast identification by automated devices. They also provide security due to the complexity and difficulty involved in trying to replicate biometric data for live presentation. In some cases, biometric techniques are combined with other security processes (e.g., informational processes) to provide a multi-factor authentication/identification system.

Within the lottery field, many online lottery games use pre-printed paper forms or bet slips for the player to manually record their desired wager data for machine entry prior to a lottery drawing. These bet slips are supplied by the gaming system provider and represent an incremental expense for each point of sale transaction. Once the wager data is accepted by the online lottery system, a receipt or ticket representing the valid entry of the data to the system is printed by an online terminal printer at the point of sale. The ticket paper is also preprinted with lottery messaging and security numbers for tracking. These tickets also represent an additional incremental expense to the lottery provider for each transaction.

According to this aspect of the present invention, a fingerprint scanner (or other biometric information reader) is attached as a peripheral to a lottery terminal for the purpose of capturing a player's fingerprint (or other biometric information) at the point of sale. Also as an option, an alpha/numeric keypad is incorporated as either an additional peripheral or as part of the fingerprint scanner. During the registration process, bet slips are manually filled out by the player and scanned into the lottery terminal for assignment to the simultaneously collected fingerprint data. The resulting fingerprint scan are then forwarded to a lottery host or middleware server for storage in a database. It will be appreciated that a fingerprint scanner need not be the sole operative biometric device used in accordance with this aspect of the present invention. Other biometric equipment and techniques employed by the present invention can include, for example, iris recognition, retinal recognition, hand prints, voice recognition, facial recognition, signature stroke recognition or any combination thereof. The stored biometric imprint along with the stored wager entries allow for automated entry of wager data and subsequent validation of the winning data.

In one embodiment, this aspect of the present invention can employ a process flow as follows:

[a] In a player registration step, the player registers at a wagering terminal to an on-line database at least one registration biometric sample read from a biometric sensor, and at least one set of wager data. As an option, at least one set of player identification data (such as a personal identification number (PIN), password or the last four digits of a phone
number, for example) can also be registered. This step can be part of the designation of the biological identifier as a VATI as described above. Alternatively, the step can occur at the time a simple player card is issued.

To initiate a wager transaction, a player provides to the on-line terminal biometric sensor a player bid biometric sample collected from the player's person and as an option, player bid identification data, which are electronically forwarded to the online lottery server or host database.

On the server or host, a comparator engine (e.g., transaction processor) compares the bid biometric sample with at least one previously registered biometric sample for producing either a successful or failed identification of the player.

As an option, the comparator engine also references the player's identification data with a player's registered identification data for further producing either a successful or failed identification of the player or to improve the level of confidence in matching the biometric comparisons.

Once the on-line database successfully identifies the player, the database system presents to the terminal the option to (1) select submission from the previously stored wager entry data or (2) automatically submit the previously stored wager data as a transaction to the host wagering system.

The host wagering system processes the wager entry and issues at least one set of transaction confirmation data which is stored in the database as a record for the associated player.

For validation of the winning data for a prize claim by a player, the player bid biometric sample is collected from the player's person and electronically forwarded to the online database. As an option, player bid identification data (e.g., as represented on the card) is also electronically forwarded to the online database.

The comparator engine or transaction processor attempts to identify the player's biometric signature and, if successful, submits to the host any associated and previously stored transaction receipt data for the purpose of winning validation by the host wagering system.

It will be appreciated that, where appropriate, use of modern data encryption and digital signature techniques such as those used by the public/private key infrastructure (PKI) can be used throughout all the transaction paths to ensure complete end-to-end data integrity and security and protection of privacy. Further, the player's actual identity (such as name, age, or address) can remain completely anonymous to the system for the purposes of these applications. As an option, the player's age can be registered to the system to ensure age eligibility for wagering with online agents and self-service gaming machines. Account based wagering, where the player has a financial account on the wagering system can also be tied to this method of play for payment transactions.

A further aspect of the present invention permits a player to associate purchased lottery tickets with his or her transaction instrument during a customer session. In this process, the player's instrument is scanned at a reader terminal or otherwise identified by the system of the present invention, and then the player's desired ticket purchases are also scanned at a reader terminal or otherwise identified by the system of the present invention. The identified tickets are then associated with the player's instrument and therefore, the player's account. The tickets can be paid for via automatic deduction of the funds in the player's account as described above. Further, the player can be credited for having purchased the tickets for purposes of receiving benefits, points, rewards, eligibility for other jackpots and related benefits as identified herein. Once the purchase activity is over, the customer session can then be terminated by the player or a POS operator where appropriate. Further, the player can then track his account and activity using the system of the present invention, and can optionally request that the system of the present invention generate a 1099 form for tax purposes at a designated time during the year. In another embodiment of this aspect of the present invention, the player can bring the tickets purchased in this manner to a lottery service provider terminal for instant validation. While the tickets in this embodiment can be played in the traditional physical sense (e.g., by the player scratching off areas of the ticket), the payment of winnings is handled electronically and without paper.

In one embodiment of the present invention, winnings can be applied to a previously issued transaction instrument that initially had no payment transaction capabilities. For example, a lottery player can be issued a player loyalty card that stores favorite wages and other personal playing information, and once a player wins on a play, the winnings can be applied to a financial account that is established and associated with the previously issued loyalty card. In this way, the loyalty card is converted to a transaction instrument that can be used for lottery and non-lottery purchases.

As shown in FIGS. 3 through 9, another embodiment of the lottery system 10 of the present invention can be used to enable various lottery service providers (e.g., state lotteries) to implement their lottery network and to enable distributors to better handle lottery transactions. In part, the present invention assists in the implementation of a platform for lottery system administration, lottery retailer or distributor transaction management, reporting, and integration and communication with lottery service providers and third party application developers.

As shown in FIG. 3, a plurality of POS terminals 15 such as might be found in a retail establishment 12 are operatively connected to a POS network 20, which can be a wireless or wired network operating using TCP/IP protocol, for example. The POS terminals include processors that can execute instructions programmed into memory for conducting lottery and non-lottery transactions. The POS network 20 can include a POS server 25 for managing information transfer pertaining to all transactions for accounting and reconciliation purposes. The POS server also filters or separates non-lottery transactions from lottery transactions, and forwards lottery-specific information to lottery data processing system 165. Lottery data processing system 165 can be a separate computing facility apart from POS server 25 and/or POS devices 15 as shown, or lottery data processing system 165 can be integrated within POS server 25 and/or a POS device (not shown).

The POS server 25 is linked to a retail management system 33 and a lottery management system 30 via network 35 in accordance with one aspect of the present invention. Network 35 can be any of a number of network-types capable of data communications, including public switched data network (PSDN), integrated services digital network (ISDN), packet-switched network (e.g., TCP/IP), private data communication network, wireless network or other suitable network. Retail management system 33 allows lottery distributor management personnel to view and account for transactions pro-
cessed at the POS devices and is operable for all types of retail trade styles, including single store as well as multiple store trade styles, for example.

It will be understood that the POS server 25 and lottery data processing system 165 each include a central processor/CPU, database, RAM and ROM for processing and storage of data and programs. They further include respective communication ports for communicating with the POS devices, between each other, and with external devices such as a lottery printer or combined receipt and lottery ticket printer, as will be described hereafter. Further, the POS devices can communicate over networks 20 and 35 with association network (not shown) as described above in connection with FIG. 1.

POS devices 15 are also provided with a central processor/CPU, database, ROM, RAM, and communications port. It will be appreciated that POS devices can be those operated behind a traditional retail counter as well as self-service kiosks and other devices not operated behind the retail counter. The POS device 15 includes a monitor or display screen for displaying information to the cashier or device operator. In some cases, as in self-service kiosks, the device operator can be the lottery player. Several display devices well-known in the art, including LCD, LED, flat screen, plasma, CRT and others can be incorporated into the display device of the present invention. The POS device is also adapted to receive input via several methods, including keyboard, touch-screens and touch-screen overlays, mouse, barcode scanners, buttons and similar input mechanisms. Transaction processor instructions are stored by the device database and read and executed by the POS device processor to process the transaction types involved in the present invention. At least one printer can also be provided in communication with the POS device of the present invention, to allow purchased lottery tickets to be printed.

As shown in FIG. 4, the lottery POS device 15 of the present invention is integrated with the lottery data processing system 165 which can include, in this embodiment, a lottery engine or host component (indicated generally at 161), a message exchange component 44, a transaction processing component 164, an acquirer component 48, a commerce services component 60, a system services component 80, and a channel processing component 90. In one embodiment, the platform used in association with the present invention is based on the Model-View-Controller (MVC) architecture, known to those skilled in the art. MVC is the core architectural model for any Java 2 Enterprise Edition™ (J2EE) based system. The channel component 90 represents the “View”, the commerce services component 60 represents the “Model”, and the transaction processing component 164 represents the “Controller” of the system. In addition to serving lottery-integrated retailer point-of-sale (POS) devices as described herein, the present platform provides a common architecture and channel components for such other actors as Internet users/players, thick or thin client retail POS devices, interactive televisions, and non-gaming transaction processors.

The POS devices 15 can be implemented using specific hardware as described, or using existing in-store POS devices and servers. For establishments with existing computerized POS devices in communication with an in-store or store-centralized POS server, the existing devices may be programmed to incorporate the system and functionality of the present invention. In one embodiment, such incorporation can involve ensuring a browser software program such as Microsoft Internet Explorer™ is capable of running on a software operating system such as Linux™ or Windows XP™, for example, so that the operator can view and execute programs stored either locally or in a centralized file server accessible via network 35.

The lottery sales agent POS devices or other lottery terminals can be “thin” client or “thick” client terminals. In a thin client implementation, a web browser such as Microsoft Internet Explorer™ resides on the POS device and accesses appropriate gaming applications available on the network from an application server (or combination web server and application server). When a transaction occurs, inputs from the thin client are transmitted to the application server where they are processed and transmitted to the lottery central system for logging. The serial number is then transferred back to the IP server at the agent location, where the lottery ticket is printed. Optionally, the lottery ticket serial number can be associated with a transaction instrument as described elsewhere herein. In a thick client implementation, a complete lottery application resides on the POS terminal and the data can be communicated throughout the network such as from the lottery terminal to the central system. It will be appreciated that the present invention can be used by current lottery service providers having an existing thin or thick client topology in place. It will further be appreciated that the present invention can accommodate a variety of input and output devices.

FIGS. 5A through 5D show example hardware and software implementations. 15a through 15b, associated with the POS device of the present invention. As shown in FIGS. 5A through 5D, third party software applications 18 or a standard Internet browser 19a can provide the user interface for lottery activities. In either case, the POS terminal 15 can additionally integrate a transaction handler 19a and a peripheral server 19c. The purpose of the transaction handler 19a is to abstract system communications and security details from the third party application 18, which is necessary to keep future updates or modifications to system communications and/or security isolated to one controllable component. To do this, the transaction handler 19a provides an interface that the third party application 18 must conform to. The interface defines how and what data will be exchanged with the transaction handler 19a. The transaction handler exchanges data with the retailer channel 90 in a defined format, as will be understood in the art. The transaction handler 19a, browser 19b and peripheral server 19c can all communicate with the channel 90 shown in FIG. 4. In the present invention, the channel 90 will typically be a retailer channel from the retailer operating POS terminals in accordance with the present invention.

The transaction handler 19a can have different functionality depending upon the user interface used. In one embodiment, the transaction handler can provide methods for passing sales information only, while in another embodiment, methods for exchanging data for all lottery activities can be provided. The peripheral server 19c provides services to devices such as printer 19d. The peripheral server can be local to the printer and can be running in the device itself, in the POS or in a “black box” type of device separate from device 15, as shown in examples 15a and 15b in FIGS. 5A and 5D, respectively. The server can provide security and services for printing tickets, for example. The peripheral server 19c can
communicate with devices 15 using a space serial (e.g., RS232) port and does not require any interaction with the third party application 18.

[0093] Device 15 can be designed with a browser interface that accesses the appropriate channel server when lottery functionality is desired. The channel server then provides the lottery user screens that are displayed on the POS device. In one embodiment, the POS device can be provided with touch screen input capabilities, allowing the retailer to perform the normal lottery sales transaction by touching areas on the screen. The lottery transaction is then processed through the IP network 35, channel server 90, acquirer 48 and the transaction processing engine 164. The transaction is processed and logged in the same secure manner, and then sent back through the secure system directly to the secure lottery printer where the ticket is presented to the retailer.

[0094] In one embodiment of the present invention, the lottery data processing system 165 include a series of PC servers which individually handle transaction processing, communications, data storage, game management and network management functions. For example, the transaction processing engine 164 processes, logs, and stores all transactions on a real-time basis. The transaction processing engine can communicate using Internet protocol (IP) over one or more secure local area networks (LANs) or wide area networks. In one embodiment, the communications servers can integrate the variety of communications networks (POTS, dial-up, frame relay, x.25, Internet) used by the lottery service provider and provide the interface to the lottery terminals.

[0095] FIGS. 6 and 7 are diagrams illustrating an example specific lottery data processing system 165 for use in connection with the present invention. As shown in FIG. 6, this system 165 can be logically comprised of three separate software layers. The base layer 140 (Layer 1) is the system interface layer, which defines the communication and hardware functions and other system components. The base layer can comprise a network of servers 142 which facilitates communication between PC-based client terminals and a transaction processing engine. In one embodiment, the base or network layer can include a proprietary IP (Internet protocol) network 145. In an IP-based network, a server on the network logically and dynamically supplies POS device addresses. Data packets are routed/switched within the network based upon source and destination information contained within each packet. An IP network such as can be used in the present invention provides inherent flexibility in deploying client terminals and routing transactions throughout the network. Full redundancy of the network, advanced recovery mechanisms, and network operations and customer support services ensure the continuous network availability necessary for lottery service providers. In one embodiment of the invention, the core network can be a virtual private network (VPN).

[0096] At the base or network layer, security can be implemented in order to provide authentication, authorization, and integrity services for data carried on the network. Such security can assist in protecting the network and its users from network-based attacks, which may be conducted by outsiders attempting to read data, modify data, deny service such as by exhausting network resources, and probe network configurations. Such protection against external attacks can be provided, for example, by firewalls, IP filtering, IP tunneling, hub authentication and line encryption, as well as by the physical and logical protection of the associated servers and routers within the lottery sales agent and lottery service provider equipment.

[0097] As shown in FIGS. 6 and 7, the middle layer 200 (Layer 2) is the gaming platform services layer, which resides above the base or network layer. With a secure, reliable network in place, the present invention can securely transfer information for lottery service providers. The gaming platform services layer is the middleware layer that provides the most commonly needed middleware services for a lottery system. This includes the transaction processing engine 164 and can further include capabilities for network management 210, sales agent management 220, communication services 230, game management 240, reporting 250, security 250 and other management functions such as system administration, hotline application administration, point of sale administration, and retail management functionality. Gaming platform services 200 connect to the transaction processing engines over LANs or WANs and host all instant and online game validation, retailer management, accounting, instant ticket distribution management and reporting functions. This is the lottery service provider's direct interface into the lottery system. For the lottery service provider, gaming platform services can include adding and removing lottery sales agents, adding and removing game applications, adding and removing back-office business applications, restoring faulty network connections, and monitoring the security and efficiency of the lottery system. The lottery transaction processing engine can host traditional lottery applications and can process, log, and store lottery transactions from each lottery sales agent for the lottery service provider. In one embodiment of the present invention, the transaction processing engine can be a ProSys™ or AlphaGOLSTM transaction processing engine.

[0098] The middle layer for each lottery service provider can include a web server, an application server, a message exchange component and a lottery engine or transaction processing engine as described. The application server and web server can comprise a channel component 90 as described earlier. The message exchange component takes data delivered via Internet protocol and makes it interpretable by the lottery transaction engine component. The web server can act as an HTTP server, thereby serving as a conduit for devices (e.g., 15) containing browsers for accessing applications as provided by the present invention. The application server provides the applications for use with the present invention, including lottery game applications in the thin client embodiment of the present invention. Lottery game applications can alternatively be stored on a separate lottery server. In one embodiment of the invention, the application server functions are allocated across numerous application servers.

[0099] As described earlier, the application server is, in one embodiment, J2EE (Java 2 Enterprise Edition) compliant. Typically, the application server can interface with system databases in order to retrieve and store transaction information. The web servers and application servers can operate in a variety of operating systems, including Windows™, Linux™ or Unix™ operating systems, and can interface with various types of commercially available databases, including Sybase™, Oracle™, Informix™, IBM™ and Microsoft SQL™.

[0100] As further shown in FIG. 6, the top layer (Layer 3) is the application or gaming platform API layer 300. The top layer 300 provides the communication methods for accessing
the gaming platform services layer. It is at this layer that third party developer applications 350 can communicate and be integrated with the system of the present invention.

[0101] At the lottery sales agent level, the system administration capabilities depend upon the sales agent and the types of lottery dispensing technologies employed. For example, a particular retailer may have stores in multiple locations and may desire to centrally manage the lottery operations of each store. As shown at 33 in FIG. 4, such a lottery sales agent can be provided with system and network management capabilities, reporting and interfaces for non-lottery third party applications.

[0102] Lottery sales agents can communicate directly with their particular state lottery via private network or over a public network such as the Internet. The communications between the state lottery service provider and the lottery sales agent generally pertain to the purchase and recordation of lottery drawing tickets. For example, a particular state lottery may offer instant scratch tickets as well as various types of lottery drawing games, including a Pick-3 game, a Pick-4 game, a SuperLotto game, and a multi-state game. For the lottery drawing games, it is necessary to record different fields of information to determine the ultimate cash prize distributions. Thus, the communication from a particular sales agent may include the purchase’s selected numbers, the store in which the purchase was made, the game related to the purchase, and the date and time of purchase. Once sent to the lottery service provider, this information is processed by the game’s transaction processing engine and stored in a database, and information is sent back to the lottery sales agent for the printing of a lottery ticket receipt.

[0103] A channel (e.g., 90) is the interface to the lottery backend in connection with the present invention from a user-device access perspective. The channel operates based on the system actor, the device being used and the communication method. Upon receiving requests from the point of contact device, the channel identifies the type of request, validates the input, and routes the request to the appropriate acquirer. The channel is also responsible for managing user session data and will pass any errors back to the point of contact device.

[0104] The lottery engine or host 161 can comprise one or more different types of lottery hosts. Lottery hosts such as the AlphaGOLSTM, EuroGOLSTM and ProSysSTM systems are examples of hosts for use with the present invention. EuroGOLSTM, AlphaGOLSTM and ProSysSTM are commercially available from GTech Corporation, West Greenwich, R.I., USA. EuroGOLSTM and AlphaGOLSTM hosts provide online and instant ticket processing functions, and ProSysSTM provides video lottery processing functions for lottery games such as bingo, blackjack, poker and keno, for example.

[0105] The transaction processing engine 164 ensures the integrity of the system of the present invention by automating the transfer of data between the back-end lottery host and storage components and the front end point-of-contact devices. In part, the transaction engine can cache and asynchronously send requests when the host is unavailable, and can also cache responses. The transaction engine includes a series of acquirers 48 corresponding to a respective channel component 90. A transaction acquirer acquires transactions and processes them with a suitable processor 164. The acquirer is responsible for identifying the message request from the channel and forwarding the message to the appropriate processor. In one embodiment, the acquirer exists in the form of a command and is the placeholder for the business logic for authentication and coordination of game play. The command locates the correct game processor for the request and forwards the game option information to that processor.

[0106] A transaction processor 164 manages and account for the products used in accordance with the present invention. The role of transaction processors is product management. In one embodiment of the present invention, the games use a transaction processor, which is the placeholder for the business logic for wagers, validations, and cancellations. The current generation of processors is lightweight and most of the transaction processing is done at an external host that is connected to the system of the present invention. These processors delegate their processing functions to external systems through message exchange. For example, lightweight processors can delegate their processing functions to external systems through message exchange component 44. In one embodiment, processors can include a sports processor, numbers processor, lottery processor, PowerBall processor and Instant game processor.

[0107] Message Exchange (MX) 44 provides the interface between the internal processing in accordance with the present invention and the external processing systems such as message exchange component 44. Message Exchange (MX) 44 can be based on an application programming interface/service provider interface (API/SPI) model. SPI is the programming interface for interfacing with the external processing systems. In one embodiment, a product routing code can direct the system to route the transaction to the transaction engine via Message Exchange (MX), for example, whereupon a timer can be set for transaction timeout while waiting on the transaction engine. Message Exchange (MX) is a communications protocol that enables the transaction engine to communicate with a lottery host. In one embodiment, the MX resides partially on the lottery host 161 and partially on the transaction engine 164. The MX can take data received via Internet protocol (IP) and makes it interpretable by the lottery host 161 and vice versa. The MX client/server architecture supports both push and pull message flow models, allowing both client and server systems to initiate message traffic and act as senders and receivers of messages. The client and server side processes implemented via MX are well-known in the art and do not necessitate detailed explanation.

[0108] System services component 80 can include a system database, e-mail server, Java naming and directory interface (JNDI) server, and business object repository, as well as other system services elements such as policy server and database management programming. The database tables used by the present invention can include the retailer profile, game parameters, and device profile, for example. Retailer profile can contain values for agent, teller, terminal number, wager units, validation units, and CDC date. Game parameters can contain values specific to each game and device profile contains information about the terminals connected to the system.

[0109] The commerce services 60 in connection with the lottery management system can provide for a claims and settlement system in connection with the acquiring processor or transaction engine. The claims and settlement system pro-
vides transaction settlement, auto-reconciliation, and claims management for retail operators and service providers. The system also performs adjustments processing, transaction fee processing, and balancing, monitoring and reporting functions, while further supporting multiple settlement entity types, such as institutions, interchanges, banks, merchants, operators and terminals. The commerce services component further provides for the management of user and device profiles, accounts, product catalogs, electronic wallet functionality and electronic fund transfer.

FIG. 8 is a diagram showing a sample implementation of one embodiment of the present invention. As shown therein, a commissioned lottery retailer 275 (shown with doorway 285) such as a gas station can have as part of its existing infrastructure a plurality of transaction devices including cashier POS devices 315, a self-service kiosk 320 such as convenience stores, and self-service gas pump credit processing centers 322. The existing infrastructure can be in the form of system hardware, software, network connectivity and related services. Devices 315, 320 and 322 are connected via network connection to retailer server 325, which can communicate with retailer manager system 333 and lottery system 330 as described above.

In one embodiment, the level of interaction permitted by a specific retailer can be determined by the lottery provider commissioning the specific retailer. Lottery or game players 365 can interact at any of devices 315, 320 or 322 to enjoy the game offerings, buy and print tickets and conduct non-lottery transactions, such as paying for gasoline, merchandise or other items available. In one embodiment, the lottery interface allows the users to track winnings, track account information and view other player information.

As shown in FIG. 9, the lottery backend system 165 can simultaneously serve multiple retailers and/or lottery distributors, including retailer 12a having multiple POS devices (similar to gas station retailer 275 in FIG. 8), retailer 12b having multiple POS devices 15 in a single location (such as a supermarket, for example), and distributor 12c having a plurality of stand-alone kiosk devices 320 spread over a region, for example.

It will be apparent to one skilled in the art that any computer system that includes suitable programming means for operating in accordance with the disclosed methods also falls well within the scope of the present invention. Suitable programming means include any means for directing a computer system to execute the steps of the system and method of the invention, including for example, systems comprised of processing units and arithmetic-logic circuits coupled to computer memory, which systems have the capability of storing in computer memory, which computer memory includes electronic circuits configured to store data and program instructions, programmed steps of the method of the invention for execution by a processing unit. Aspects of the present invention may be embodied in a computer program product, such as a diskette or other recording medium, for use with any suitable data processing system. The present invention can further run on a variety of platforms, including Microsoft Windows™, Linux™, Sun Solaris™, HP/UX™, IBM AIX™ and Java compliant platforms, for example.

The foregoing description of the specific embodiments will so fully reveal the general nature of the invention that others can, by applying current knowledge, readily modify and/or adapt for various applications such specific embodiments without departing from the generic concept.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiments are therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the claims of the application rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein. It is to be understood that the phrasing of terminology employed herein is for the purpose of description and not of limitation.

1. A retail POS device, comprising:
   a reader terminal component for reading a transaction card and reading indicia on one or more lottery tickets; and
   a computer processor in communication with the reader terminal component and operable to execute instructions for:
   conducting lottery transactions and non-lottery transactions;
   associating a transaction amount with a transaction instrument; and
   associating the one or more lottery tickets with the transaction instrument.

2. The device of claim 1 wherein the computer processor is further operable to execute instructions for displaying an interface associated with at least one non-lottery-related retailer function and for displaying an interface associated with at least one lottery-related retailer function.

3. The device of claim 1 wherein the computer processor is operable to execute instructions for controlling lottery game selection.

4. The device of claim 1 wherein the computer processor is operable to execute instructions for communicating with a financial institution data processing system having programming for initializing the opening of a financial account associated with the transaction instrument, wherein the financial institution account is funded with a balance in the amount of a funding amount.

5. The device of claim 4 wherein the reader terminal component is capable of reading at least a portion of the transaction instrument and the computer processor is operable to execute instructions for communicating a transaction amount to the financial institution data processing system that changes the balance in the financial institution account associated with the transaction instrument.

6. The device of claim 1 wherein the computer processor is operable to execute instructions for applying winnings associated with one or more read lottery tickets with the read transaction instrument.

7. A method, comprising:
   communicating, from a lottery data processing system, a funding amount to a financial institution account associated with a transaction instrument based on winnings from a lottery offering; and
   providing a retail POS device having:
   a reader terminal component for reading the transaction instrument and reading indicia on one or more lottery tickets, and
   a computer processor in communication with the reader terminal component and operable to execute instructions for associating the one or more lottery tickets with the transaction instrument.
8. The method of claim 1, wherein the computer processor is operable to execute instructions for applying winnings associated with one or more read lottery tickets with the read transaction instrument.

9. The method of claim 1 wherein the computer processor is operable to execute instructions for conducting lottery transactions and non-lottery transactions.

10. A retail POS device, comprising:
    a reader terminal component for reading a transaction instrument; and
    a computer processor in communication with the reader terminal component and operable to execute instructions for:
    conducting lottery transactions and non-lottery transactions;
    associating a transaction amount associated with a winning lottery event with a financial institution account associated with the transaction instrument.

11. The device of claim 10 wherein the executable instructions can display an interface associated with at least one non-lottery-related retailer function and can further display an interface associated with at least one lottery-related retailer function.

12. The device of claim 10 wherein the computer processor is operable to execute instructions for controlling lottery game selection.

13. The device of claim 10 wherein the computer processor is operable to execute instructions for communicating with a financial institution data processing system having programming for initiating the opening of a financial account associated with the transaction instrument, wherein the financial institution account is funded with a balance in the amount of a funding amount.

14. The device of claim 13 wherein the reader terminal is capable of reading at least a portion of the transaction instrument and the computer processor is operable to execute instructions that communicate a transaction amount to the financial institution data processing system that changes the balance in the financial institution account associated with the transaction instrument.

15. The device of claim 10 wherein the computer processor is operable to execute instructions for applying winnings associated with one or more read lottery tickets with the read transaction instrument.

16. A method, comprising:
    providing a retail POS device having:
    a reader terminal component for reading a transaction instrument used with lottery transactions, and
    a computer processor in communication with the reader terminal component and operable to execute instructions for conducting lottery and non-lottery transactions, and for applying funds to a financial institution account associated with the transaction instrument.

17. The method of claim 16 wherein the computer processor is operable to execute instructions for applying winnings associated with one or more read lottery tickets with the read transaction instrument.

18. A transaction processing system, comprising:
    a POS terminal having a processor and a display, wherein the processor is operative to: display a first interface associated with at least one non-lottery-related retailer function on the POS terminal display; and display a second interface associated with at least one lottery-related retailer function on the POS terminal display; and
    a lottery management and transaction processor in communication with the POS terminal processor and one or more third party game application providers, wherein the lottery management and transaction processor hosts a plurality of available lottery games selectable by a user of the POS terminal, and wherein the available lottery games include third party game applications provided from the one or more third party application providers.

19. A method, comprising:
    providing a POS terminal having a processor and a display, wherein the processor is operative to: display a first interface associated with at least one non-lottery-related retailer function on the POS terminal display; and display a second interface associated with at least one lottery-related retailer function on the POS terminal display; and
    providing a lottery management and transaction processor in communication with the POS terminal processor and one or more third party game application providers, wherein the lottery management and transaction processor hosts a plurality of available lottery games selectable by a user of the POS terminal, and wherein the available lottery games include third party game applications provided from the one or more third party application providers.

20. A computer readable medium including instructions that, when executed on a processor, perform a method for processing lottery and non-lottery transactions, the method comprising:
    providing a POS terminal having a CPU and a display, wherein the CPU is operative to: display a first interface associated with at least one non-lottery-related retailer function on the POS terminal display; and display a second interface associated with at least one lottery-related retailer function on the POS terminal display; and
    providing a lottery management and transaction processor in communication with the POS terminal CPU and one or more third party game application providers, wherein the lottery management and transaction processor hosts a plurality of available lottery games selectable by a user of the POS terminal, and wherein the available lottery games include third party game applications provided from the one or more third party application providers.