SYSTEM FOR PAYMENT VIA ELECTRONIC WALLET

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ABSTRACT
A method includes receiving a request to process, against an electronic wallet, a portion of a transaction, an electronic wallet optionally comprising a sub-wallet, the transaction processed against the wallet and/or sub-wallet. The method further includes identifying one or more electronic value tokens in the e-wallet and/or sub-wallet that, when used together, will cover the portion of the transaction. The method further includes applying the electronic value tokens to the portion of the transaction.
Electronic Wallet 10

Authorization Information/Identification Information 801

Rules 802

Sub-Wallet 807 (e.g., Credit Card-related)
  Rules 817
  Electronic Value Token 827

Sub-Wallet 808 (e.g., Debit Card-related)
  Rules 818
  Electronic Value Token 828

Sub-Wallet 808 (e.g., Stored-Value Card-related)
  Rules 819
  Electronic Value Token 829

FIG. 1B
CARD ISSUER X

FIG. 3A

CARD ISSUER Y

FIG. 3B

CARD ISSUER Z

FIG. 3C
Receive request from point of sale terminal.

Determine if request is for value token redemption or value token addition.

Identify/determine applicable wallet(s).

Access E-Wallet and examine rules.

Select and apply value tokens based on rules.

Receive confirmation message from card issuer.

Update E-Wallet in datastore.

Update transaction log.

Forward confirmation message to point of sale terminal.

Reconcile accounts of merchants, card issuers, etc.

End

FIG. 4A
Begin

E-Wallet Aggregator System receives request from point of sale terminal.

Stored Value Card Transaction System receives request from E-Wallet Aggregator System.

Determine if request is for value token redemption or value token addition.

Identify/determine applicable wallet(s).

Add Token to Add Token E-Wallet. Contact Card issuer.

Access E-Wallet and examine rules

Select and apply value tokens based on rules.

Receive confirmation message from card issuer.

Update E-Wallet in datastore.

Update transaction log.

Forward confirmation message to E-Wallet Aggregator System.

Reconcile accounts of merchants, card issuers, etc.

End

FIG. 4B
FIG. 5
FIG. 6A
Adding a card Nickname is a useful way to distinguish this card from other cards in your Wallet.

For example: Nordstrom, Sears, Visa.
SYSTEM FOR PAYMENT VIA ELECTRONIC WALLET

CROSS-REFERENCE TO RELATED APPLICATION


BACKGROUND

[0003] The electronic transaction market is currently filled with many types of credit cards, debit cards, store value cards, and loyalty cards, all of which may be offered by different issuers, vendors, and providers. Some of the cards are tailored to be redeemed from a retailer while others may be redeemed by financial institutions. Other cards have promotions attached to them, e.g., loyalty cards. However, the increasing quantity and complexity of the cards makes organization and redemption increasingly difficult, thus potentially hindering the growth of the market. For example, a user may not know or remember that the user has a stored value card for a specific store during a purchase at that store because the user has too many stored value cards. Also, a user may not understand the various types of promotions available to him using a card in combination with a loyalty card, and as such, may not benefit from promotions applicable to the user’s purchase. Historically, cards have been embodied in a tangible medium such as plastic, and thus are susceptible to loss, theft, or simply being left at home when needed. With the continued growth in card-based transactional offerings provided to consumers, many consumers are faced with the burdensome task of organizing, managing, tracking, transporting, and storing all of their credit, debit, stored-value, loyalty, and other types of merchant, vendor, and provider issued cards. What today’s consumers need is a more efficient, secure, and effective way of accessing and using their card-related assets.

SUMMARY

[0004] Disclosed herein are computer implemented methods and systems including, in an embodiment, a computer implemented method and system for implementing an electronic wallet, and including functionality such as adding/redeeming value tokens to/from the electronic wallet or a portion thereof (e.g., a sub-wallet) is described. In one embodiment, a method includes receiving a request to process, against an electronic wallet or sub-wallet, a portion of a payment transaction, and receiving value tokens in the wallet or sub-wallet, all or a portion of a payment transaction. The method further includes identifying one or more value tokens in the wallet or sub-wallet that, when used together, will cover all or the portion of the payment transaction. The method further includes applying the electronic value tokens to all or the portion of the payment transaction.

[0005] In another embodiment, a non-transitory machine-readable storage device comprises executable instructions that, when executed, cause one or more processors to receive a request to process, against an electronic sub-wallet, a portion of a payment transaction, an electronic wallet comprising the sub-wallet, the payment transaction processed against the wallet. The processor is further caused to identify one or more value tokens in the sub-wallet that, when used together, will cover the portion of the payment transaction. The processors are further caused to apply the electronic value tokens to the portion of the payment transaction.

[0006] In another embodiment, a system comprises one or more processors and a memory coupled to the one or more processors. The memory comprises executable instructions that, when executed, cause the one or more processors to receive a request to process, against an electronic sub-wallet, a portion of a payment transaction, an electronic wallet comprising the sub-wallet, the payment transaction processed against the wallet. The one or more processors are further caused to identify one or more value tokens in the sub-wallet that, when used together, will cover the portion of the payment transaction. The one or more processors are further caused to apply the electronic value tokens to the portion of the payment transaction.
In an embodiment, an electronic value token transaction computer comprises a point-of-sale interface and a sorting unit, and a datastore coupled to the stored-valued card transaction computer comprises an electronic wallet unit. The point-of-sale interface receives requests, and the sorting unit identifies one of the requests as an electronic wallet request comprising authentication information. The electronic value token transaction computer accesses an electronic wallet, via the electronic wallet unit, associated with the authentication information. The electronic value token transaction computer examines rules associated with the electronic wallet and selects, based on the rules, value tokens in the electronic wallet that, when used together, will cover the electronic wallet request. The electronic value token transaction computer applies the electronic value tokens to the electronic wallet request.

**BRIEF DESCRIPTION OF THE DRAWINGS**

FIGS. 1A, 2A, 2B, and 2C are schematic representations of an electronic value token transaction processing system in accordance with at least one embodiment.

FIG. 1B illustrates an exemplary embodiment of an electronic wallet.

FIGS. 3A, 3B, and 3C are front perspective views of representative individual proxy cards in accordance with at least one embodiment.

FIG. 3D is a front perspective view of a representative personal digital in accordance with at least one embodiment.

FIG. 4A is a flowchart depicting exemplary processes utilized by an electronic value token transaction computer for creating an electronic wallet or adding/redeeming value tokens to/from the electronic wallet in accordance with at least one embodiment.

FIG. 4B is a flowchart depicting exemplary processes utilized by an electronic value token transaction computer for creating an electronic sub-wallet or adding/redeeming value tokens to/from the electronic sub-wallet in accordance with at least one embodiment.

FIG. 5 illustrates a particular machine suitable for implementing the several embodiments of the disclosure.

FIGS. 6A-D illustrates a series of user interface screens and prompts in accordance with at least one embodiment.

**DETAILED DESCRIPTION**

Disclosed herein is an efficient, secure, and effective method for organizing, managing, transporting, storing and using all manner of assets related to credit, debit, loyalty, and stored-value type cards, the disclosed method of which incorporates an electronic wallet ("e-wallet"). As shown in FIG. 1B, an e-wallet is an electronically maintained data file which may comprise authentication information, rules for use, sub-wallets (e.g., for separately maintaining credit-card related information, debit-card related information, and stored-value card-related information), and electronic value tokens (e.g., electronic representations of the monetary and/or other value associated with the credit-card related information, debit card-related information, and stored-value card-related information contained in the e-wallet sub-wallet). In certain embodiments, as reflected in FIGS. 6A-D, a user may create an e-wallet, establish rules for the e-wallet, provision the e-wallet, and access the e-wallet to facilitate electronic transactions.

Also disclosed herein, as shown in FIGS. 1A, 2A-B, and 4A-B, an electronic value token transaction processing system provides users, merchants, vendors, issuers, providers, and other interested parties an efficient, secure, and effective system for facilitating the organization, management, transportation, storage, and use of the aforementioned e-wallets and electronic value tokens in financial transactions.

As will be more fully described herein, there are certain basic concepts and functions employed by e-wallets and e-wallet enabled systems. These concepts include the creation of an e-wallet, provisioning the e-wallet (e.g., converting tangible cards into electronic value tokens and associating the electronic value tokens to an e-wallet or requesting an electronic value token be associated with the e-wallet), accessing the e-wallet, and establishing rules for the e-wallet's use.

Moreover, as will be more fully detailed herein, the e-wallet may be used in a system wherein the e-wallet provider manages the entirety of the e-wallet's contents (e.g., the primary e-wallet, any sub-wallets or secondary wallets, and associated electronic value tokens therein). Alternatively, the e-wallet may be used in a system wherein the e-wallet provider manages only a portion of the e-wallet's contents (e.g., the primary e-wallet and electronic value tokens therein) and delegates the management of one or more (or all) sub-wallets or secondary wallets to a third-party's electronic value token transaction processing system.

As will be further detailed herein, either of the two described management systems may be configured to allow the systems' user to fully manage the functionalities of the user's e-wallet; participate in value added/bonus programs offered by issuers, vendors, and/or other electronic value token-related parties; participate in card exchange activities (e.g., wherein a user exchanges an electronic value token maintained in its e-wallet for an electronic value token not in the e-wallet); and participate in savings programs offered by issuers, vendors, and/or other electronic value token-related parties.

FIG. 1A illustrates an exemplary electronic value token transaction processing system 100. Specifically, FIG. 1A illustrates an electronic value token transaction computer 150 configured for communication with point of sale devices 111, one or more authorization systems 160 (e.g., retailer, bank, and credit card), and datastore 180. Moreover, FIG. 1A illustrates that the point of sale devices 111 are in communication with a proxy card 200 (which will be shown below to represent an embodiment of a means for a user to access an e-wallet) and that the datastore 180 comprises an e-wallet unit 199, which in turn comprises e-wallets 10.

FIG. 1B illustrates an electronic wallet 10 in accordance with one embodiment, and it is to be understood that the details of e-wallet 10 may be employed in any of the various embodiments disclosed herein (e.g., as e-wallet 10 of FIGS. 1A, 2A, and 2B) and the maintenance of said e-wallet 10 may be wholly performed by a single e-wallet system (e.g., electronic value token transaction processing system 100) or may distributed across multiple e-wallet systems (e.g., electronic value token transaction processing systems 1100 and 1200 and E-Wallet Aggregator System 1000). Specifically, FIG. 1B illustrates an electronic wallet 10 comprising authentication information 801, rules 802, electronic value tokens
804, sub-wallet 807 for credit card electronic value tokens, sub-wallet (with corresponding rules 817 and electronic value tokens 827), sub-wallet 808 for debit card electronic value tokens (with corresponding rules 818 and electronic value tokens 828), and sub-wallet 809 for stored-value card electronic value tokens (with corresponding rules 819 and electronic value tokens 829). FIGS. 1A and 1B may be further understood from the above discussion.

[0023] In order to eliminate the increasing complexity in organization, transport, security, and redemption, transaction cards are stored electronically as value tokens in electronic wallets. As used herein, a value token refers to an electronic identifier that may be used to transact business with a party willing to accept the electronic value token, for example as tender for a purchase. Examples of such value tokens include electronic representations of, or associated with, stored value cards (also referred to as prepaid cards) and other physical representations of value of a variety of types such as credit cards, debit cards, gift cards, prepaid telephone cards, loyalty cards, membership cards, tickets or ticket cards, entertainment cards, sports cards, prepaid cards, coupons, admission passes, prepaid or pre-purchased goods or services, and the like. In an embodiment, a value token includes cash or currency. In an embodiment, the electronic value token includes a credit or debit card or account. In an embodiment, a value token includes a preexisting account such as a merchant account, bank account, etc. In an embodiment, a value token includes a merchant-issued and/or accepted credit, points, coupon or promotional value. In an embodiment, a value token is associated with a prepaid card or account, and unless otherwise indicated it is to be understood that the various embodiments described herein may be carried out in the context of a prepaid card or account such as a merchant gift card.

[0024] A physical credit card, debit card, stored-value card, or other physical representations of value may be converted into a value token to be added to the electronic wallet. For example, physical gift cards or other physical representations of value may be transformed into value tokens in a user's electronic wallet via a point-of-sale device, cellular phone, a computer, short messaging service (“SMS”), and the like. Once so transformed, the electronic value tokens may be redeemed by the user, after authentication, without possession of the physical representation such as gift cards by accessing the user's electronic wallet during purchase. In this way, the use of the form value token herein refers to electronic representations and physical representations that can be transformed into electronic representations. In at least one embodiment, the physical gift card is inoperable after transformation. In an alternative embodiment, the physical gift card is inoperable after redemption of the electronic value token using the electronic wallet or the physical gift card.

[0025] Consumer use of value tokens typically involves a vendor, a redeeming merchant or retailer, and an issuer. In various embodiments, the vendor, redeeming merchant, and issuer may be the same, different, or related entities. The point of sale where value tokens are purchased or otherwise made available for inclusion in an electronic wallet may be referred to as the vendor. Thus, the vendor sells the electronic value tokens themselves although the electronic value tokens may be redeemed at another place of business. An entity that will accept a value token for business transactions, for example as tender for a purchase, may be referred to as a redeeming merchant or retailer. For example, a grocery store may sell the electronic value token of an apparel store. The grocery store is the vendor and the apparel store is the redeeming merchant or retailer. An entity that provides the financial backing and/or payment processing for a given value token such as a prepaid card or account may be referred to as the issuer. Issuers include direct issuers of value tokens such as store-branded value tokens (e.g., store branded prepaid cards or tokens issued directly by the merchant, sometimes referred to as closed-loop prepaid cards), and in some embodiments the vendor may also be the issuer and/or the redeeming merchant (e.g., a prepaid card or token issued, sold, and redeemed by the same merchant). Issuers also include financial institutions such as banks, VISA, MasterCard, American Express, etc., and value tokens issued by such institutions may be readily accepted by a number of redeeming merchants to conduct transactions such as purchases (sometimes referred to as open loop prepaid cards or tokens since they may be redeemed at a number of different merchants). Issuers may also be the providers of branded electronic wallets such as Google, Facebook, Twitter, and the like, and in some embodiments such branded wallet contains value tokens associated with the issuer (e.g., Google “cash” or credits, Pay Pal currency, Facebook electronic currency, etc.) and may contain or be associated with a sub-wallet containing gift card-related value tokens, a sub-wallet containing credit card-related value tokens, a sub-wallet containing debit card-related value tokens, or a combination thereof.

[0026] Generally, an electronic value token transaction computer 150 credits or debits (or takes other actions of the type described herein) the accounts associated with the electronic value tokens contained within an electronic wallet or sub-wallet. The electronic value token transaction computer 150 may generate or forward messages to authorization systems 160 so that the authorization systems 160 can credit or debit (or take other action of the type described herein) the accounts associated with the electronic value tokens. Confirmation messages are returned to the electronic value token transaction computer 150 and POS device 111, and the electronic wallet 10 or a sub-wallet is updated as necessary.

[0027] In at least one embodiment, transaction information is separate from authentication information. For example, information about a purchase item, purchase price, purchase location, etc. is considered transaction information and is separate from authentication information such as an authentication token, PIN, account number, etc. Among other things, keeping the information separate allows for separate processing and routing, allowing for greater efficiency and privacy. For example, in applying the electronic value tokens according to the configurable rule, the priority may be based on a transaction information variables such as physical location of a retailer originating the electronic wallet request; transaction amount; type of retailer; time of day; day of week; week of month; month of year; department of retailer originating the electronic wallet request; lane of retailer originating the electronic wallet request; identification of checker; parent company of a retailer originating the electronic wallet request; value of value tokens; and type of the electronic wallet request in various embodiments. Such transaction and/or authentication information may be used by the systems described herein in conjunction with rules based decision making (e.g., checking such transaction data to validate and apply a promotion associated with the transaction), for secu-
rity purposes (e.g., checking such transaction data against pre-determined profiles to assist with fraud detection), and the like.

[0028] In at least one embodiment, the wallet provider stands in for the purchaser, and redemption of the electronic value token occurs after the purchase. However, this time mismatch creates a discrepancy in the retailer’s records. Specifically, the retailer records a transaction between the retailer and the wallet provider. The retailer records a later redemption via value token, seemingly for no purchase. In these instances, a third party administrator is required that can connect the redemption with the transaction.

[0029] There can be many ways to provision or add value tokens to an electronic wallet. For example, a user may pay the vendor for a value token, and the vendor may insert the electronic value token into the user’s wallet. Alternatively, the user may obtain a physical representation of the electronic value token from the vendor (e.g., a card, chip, printed receipt, etc.) and may subsequently add the value to the electronic wallet (for example, via a phone or internet accessed user interface). The user may have a choice of many different retailers affiliated with the vendor. In other words, a given vendor may offer a plurality of tokens associated with different retailers. For example, a retailer may offer promotions to compete for the user’s business when purchasing a value token such as a prepaid account.

[0030] Each retailer may mandate a specific format for value tokens. For example, one retailer may require a 16 digit card number plus a 4 digit month/year expiration date. Other retailers may require pin numbers, access numbers, card verification value numbers, card security code numbers, and the like. Each piece of information for different retailers may have a different format as well as a different name. As such, an electronic wallet provider or host (for example, a primary e-wallet provider) would benefit by allowing third party administration for electronic representations of value tokens have a variety of formats such as stored value cards, credit cards, debit cards, loyalty and promotion cards, and other subsets of value tokens for which administration by the primary e-wallet provider would be more expensive.

[0031] In an embodiment, value tokens associated with prepaid cards or accounts may be associated with a sub-wallet within the electronic wallet (for example, a sub-wallet of a primary, branded electronic wallet such as a Google electronic wallet), and a third party may administer the sub-wallet on behalf of the primary/principal electronic wallet host or provider. For example, during a transaction involving value tokens associated with prepaid cards or accounts (e.g., electronic or virtual stored value cards), the provider of the electronic wallet allows a sub-wallet associated with such value tokens to take control of a portion of the transaction, sometimes referred to as a sub-transaction. In an embodiment, a sub-transaction comprises a transaction associated with an electronic prepaid card or account such as redemption, value addition (e.g., topping up), activation, closure, fraud detection, etc. Specifically, the third party administrator can quickly and cheaply administer the transaction, including but not limited to determining and/or providing the proper formatting for the sub-transaction, and further execute the sub-transaction independently and/or in cooperation with the primary electronic wallet host or provider. Such formatting may relate to the particulars of information/data contained upon or associated with a given value token (e.g., type of card number, security code, etc.) and/or the formatting of information or data associated with a particular transaction (e.g., the characteristics, organization, packaging, etc. of data such as card type, transaction type, security code, etc. into messaging fields or other data formats for receipt/transmission while processing a transaction). For example, the third party administration can pass the proper transaction formatting template to the primary wallet provider. In at least one embodiment, the third party administrator determines from the request, or requests from the user, the identity of the retailer associated with the transaction. Preferably, the third party administrator maintains a database of a plurality of transaction formats associated with a plurality of retailers. After determining the identity of the retailer associated with the transaction, the third party administrator identifies the associated transaction format for the identified retailer using the format database and all subsequent processing is performed using the retailer-specific transaction format and vocabulary. In an embodiment, a user may wish to add a value token to an electronic wallet using a physical stored value card. The user is requested to identify the retailer associated with the stored value card, for example via a user interface located at a point of sale (including, in an embodiment, a point of sale associated with a personal computer such as on-line shopping via websites). In another embodiment, the user provides information associated with the stored value token via a web-based or personal digital assistant interface (e.g., a mobile phone app). Accordingly, based upon the user provided data, the appropriate format may be referenced from the database and the user may be shown a pictorial representation or other mockup representation of the physical stored value card with the specific input information highlighted on the mockup. As such, the user knows exactly which inputs are required to add the electronic value token to the electronic wallet. The user inputted information derived from the mockup will be in the proper format and/or may be further modified, packaged, etc. by the third party administrator to meet further formatting requirements. While the example described is simple, more complex transactions are also possible. As will be described more fully herein, transactions relating to (i) using value tokens in primary and/or sub-wallets for portions of transactions is similarly handled as is (ii) exchanging value tokens in primary and/or sub-wallets for other types of value tokens or value tokens associated with other retailers. For example, a user may wish to exchange a value token associated with a retailer the user does not frequent for a value token associated with a retailer that the user does frequent. Moreover, the third party administrator may use the transaction format associated with the identified retailer for financial reconciliation of the transaction or sub-transaction (e.g., debiting and crediting a prepaid account). In this instance, use of the proper transaction format is not only convenient but often required.

[0032] As indicated above, an electronic sub-wallet is a specifically defined portion of an e-wallet located in or associated with a specific e-wallet (e.g., a primary or principal wallet). A sub-wallet may be administered/maintained by the primary or principal e-wallet’s administrator, processor, and/or provider or may be administered by another party, system, process, processor, subroutine, or server. The separate administration of the electronic sub-wallet allows the primary e-wallet provider and user to take advantage of economies of scale. For example, all electronic value tokens may be stored in one sub-wallet while credit and debit cards are stored in the primary e-wallet or a separate electronic sub-wallet. As such, the provider of the primary e-wallet may administrate/perform
transactions concerning value tokens associated with credit and debit cards residing in the primary e-wallet while allowing a third party to administrate/perform transactions concerning value tokens associated with electronic value tokens residing in an electronic sub-wallet, freeing the third party from costly banking and credit regulations. Moreover, the third party administrator may use the economies of scale to receive payment for its services via arbitration, commission, pay per transaction, or the like.

[0033] Via the separate administration of a sub-wallet, the third party administrator (e.g., administrator of an electronic sub-wallet associated with electronic prepaid accounts) provides convenience to both the user and the primary electronic wallet provider. Often, the third party administrator is the only entity with the knowledge and expertise (e.g., a database of required transaction formats) to process financial reconciliations or other transactions associated with an electronic prepaid account associated with a given issuer. For example, a third party administrator may be the only entity capable of matching a particular transaction on the retailer's book to a particular use of a value token or electronic wallet. As discussed in more detail herein, in some embodiments, the third party administrator carries out, implements, and/or is responsible for all or a portion of the functionality described in conjunction with the electronic value transaction computer 150. For example, in the context of administering one or more electronic sub-wallets (e.g., an electronic sub-wallet associated with electronic prepaid accounts such as closed loop accounts issued on behalf of one or more merchants) for the primary host or provider of an electronic wallet such as a branded electronic wallet.

[0034] Access to the electronic wallet may be gated or protected by an authentication token or other means for securely accessing an electronic wallet, examples of which include a proxy card or a personal digital assistant or mobile device such as a smart phone. Other embodiments for access to the electronic wallet include cardless access such as a number/password combination, a number without a password, and the like. Biometric information may also be used for authentication and access purposes, e.g., a fingerprint or iris print. Near field communication technology may also be used to implement authentication tokens. Near field communication technology may be implemented at a physical point of sale or in association with an online transaction. In either context, the near field communication technology may be implemented by a user via a proxy card (e.g., 200, 201, or 203), personal computer, personal digital assistant, smartphone 204, or other online transaction-related device. Thus, the authentication token may be tangible, intangible, or a combination thereof. In an embodiment, the authentication token may be generated, created, and/or formed at the initiation of an electronic transaction to uniquely identify the electronic transaction. In an embodiment, the uniquely generated authentication token may comprise elements of an electronic wallet identifier, a merchant identifier, a point of sale identifier, an electronic value token identifier, an electronic value token issuer identifier, an electronic value token transaction processor identifier, or combinations thereof. In another embodiment, the uniquely generated authentication token may be wholly unique and not comprise any portion of any previous identifier.

[0035] Examples of proxy cards are depicted in FIGS. 3A, 3B, and 3C. FIG. 3A depicts a proxy card 200 in which the authentication information 211 is encoded on the card 200 by means of a bar code capable of being read by an optical scanner. FIG. 3B depicts a proxy card 201 in which the authentication information 211 is encoded on a magnetic strip located on the card 201. FIG. 3B depicts a proxy card 203 in which the authentication information 211 is encoded on a near field communication chip on the card 201. In some embodiments, the proxy card may have a magnetic stripe and a bar code (or a plurality of magnetic strips and/or bar codes), and one or more of such may contain the authentication information 211. The proxy cards 200, 201, and 203 are fabricated from a suitable first material, such as plastic, paper, a plastic-coated paper, laminates, or combinations thereof. The proxy cards 200, 201, and 203 are typically made in a thickness range of from about 0.005 to about 0.040 inch. The proxy cards 200, 201, and 203 each bear authentication information 211, for example an account number, serial number, authorization code, digital signature, electronic key or key code, RFID chip/data, etc. corresponding to an e-wallet. The proxy card authentication information 211 is unique to the proxy card and associates the proxy card to an electronic wallet, and in an embodiment such association is stored in a database accessible by an administrator of the e-wallet. The authentication information 211 may be encoded in a bar code as depicted in FIG. 3A on proxy card 200, a magnetic strip as depicted in FIG. 3B on proxy card 201, a near field communication chip as depicted in FIG. 3C on proxy card 203, a series of numerals, a series of letters, or a combination thereof. The proxy cards 200, 201, and 203 may also be fashioned with personal identification numbers, or PINs, to be entered during the course of the transaction, that correspond to the authentication information 211 and allows access and/or use of the electronic wallet. In an embodiment, the PIN may be encoded in a bar code, a magnetic strip, a series of numeral, a series of letters, or a combination thereof. In an embodiment, the PIN may be obscured from view by packaging, by an obscuring material such as a scratch-off strip or peel-off label, or combinations thereof. In some embodiments, the proxy card may comprise a card security code (CSC), a card verification value (CVV or CV2), a card verification value code (CVVC), card verification code (CVC), verification code (V-code or V code), card code verification (CCV), credit card ID (CCID), or combinations thereof, and such codes (along with any other authentication data or token described herein) may be employed in an authorization or authentication transaction, for example initiated at a point of sale in conjunction with an e-wallet payment for a purchase transaction.

[0036] FIG. 3B depicts a proxy card 201 in which the authentication information 211 is encoded on a magnetic strip located on the card 201. The magnetic strip may be made conventional construction, such as one deposited from a slurry, positioned on the card 201 so that it can be scanned in magnetic strip reading equipment such as a Tranz terminal made by Verifone. For additional security, the authentication information 211 may also be subjected to an encryption algorithm prior to encoding on the magnetic strip.

[0037] In at least one embodiment, the proxy card 200 comprises a bar code, such as a UPC code (e.g., a GS1-128 or UCC/EAN-128), positioned on the proxy card 201 so that it can be scanned by well-known bar code reading equipment. Encoded in the bar code on the proxy card is a representation of the authentication information 211.

[0038] In other embodiments, series of numerals, series of letters, or combinations thereof, may be placed on the proxy
cards 200 and 201 to be read or interpreted by a human or a device, i.e., optical character recognition device, configured to interpret a series of shapes corresponding to the package identifier. Any suitable authentication token as described herein such as virtual or cardless authentication tokens, mobile phones, etc. may be employed in the various embodiments described herein.

In further embodiments, e.g., proxy card 203, near field communication technology, radio frequency identification (RFID) tags, microprocessors, and/or microchips may be placed on the proxy card to be interpreted by specifically configured devices. The RFID tags, microprocessors, and/or microchips may be used in addition to or in place of the bar code 255 on proxy card 200 and magnetic strip 256 on proxy card 201, or may be used in combination with these or other means of encoding the authentication information on the proxy card. Alternatively, such RFID or other means such as near field, Bluetooth, etc. may be employed by a user operated device (e.g., a personal digital assistant such as a smart phone) to provide electronic wallet access and/or authorization functionality. In an embodiment, the authentication token is associated with a personal digital assistant such as a smart phone 204, as depicted in FIG. 3D. For example, an electronic wallet stored in and/or accessed via a phone may include an authentication token, or the phone itself may contain hardware and/or unique electronic data (e.g., authentication data such as serial number, MAC address, SIM card, digital signature, electronic key, user ID, phone number, passcode, etc.) that serves as the authentication token. Such a phone may use near field communication to communicate data associated with the authentication token with a point of sale device for authentication and transaction purposes. For example, the phone may be passed near the point of sale device and transfer user and/or wallet information and authentication information to the point of sale device using near field communication protocol. The phone may transfer all or a portion of the wallet and/or authentication information, leaving the point of sale device to determine which portions are applicable to the current transaction, or the phone may transfer only presently applicable portions of information, i.e. information to be used during the current transaction, to the point of sale device. That is, logic as to the transfer of wallet and/or authentication information to/from the authentication token (e.g., phone) and the point of sale device may reside on the authentication device, on the point of sale device, or both. In an embodiment, the phone may provide hardware and/or software for authenticating a user, for example a camera or scanner and associated application for confirming biometric data associated with the user, and upon authenticating the user, the phone would convey the successful authentication to the point of sale device. The point of sale device may communicate with the wallet host or provider (e.g., a primary e-wallet host) and any sub-wallet hosts or providers, e.g., third party administrators. In another example, the point of sale device may communicate with only the wallet host or provider (e.g., a primary e-wallet host), and the wallet host or provider may communicate with third party administrators, for example a sub-wallet host or administrator. Despite multiple configurations to enable communication, the transaction may still occur in real time with no delay to the customer because the parties use scalable architecture.

In an embodiment, the authentication device is a proxy card. Although a proxy card is not a physical card, the proxy card’s similar appearance to a credit card, debit card, and/or stored-value card will help adoption of and access to electronic wallets because consumers know how to use electronic value tokens. As such, consumers may come to think of proxy cards as multiple cards rolled into one or simply think of a proxy card as an electronic wallet itself, despite being a physical representation. Authentication tokens may take and/or be associated with tangible or intangible embodiments such as a mobile device, a personal identification number, a phone number plus a personal identification number, a password, a username plus password, biometric identifier, and the like. Authentication tokens contain, provide and/or are associated with authentication information (e.g., electronic authentication data or information), which associates a user with an electronic wallet. As such, multiple value tokens contained in the electronic wallet (or a sub-wallet thereof) are associated with the user.

Returning to FIG. 1A, an electronic value token transaction computer 150 accesses electronic wallets 10 from datastore 180. The prepaid or stored value card electronic value tokens may include electronic representations of gift cards, loyalty cards, promotions, and the like. The POS device 111 obtains authentication information from an e-wallet user via an authentication token such as a smart phone or the proxy card 200 and sends the authentication information (and is some instances, rules for allocating the contents of the e-wallet for the requested transaction) to the electronic value token transaction computer 150 along with purchase information and/or value token information as part of a transaction request. The electronic value token transaction computer 150 uses the authentication information to locate the correct electronic wallet 10 or sub-wallet in the datastore 180 and acts upon the electronic value token (e.g., adds a value token to a primary wallet or sub-wallet, activates a value token, debits a value token, tops-off a value token, checks the balance of a value token, etc.) or examines rules (received with the request, associated with the e-wallet by the electronic value token transaction processing system 100, 1100, 1200, or a combination thereof) in light of the request’s information. For example, for a purchase transaction the electronic value token transaction computer 150 selects the electronic value tokens that cover the purchase based on the rules, for example rules associated with the order or priority in which to apply or redeem value tokens to cover the purchase price.

As shown in FIGS. 2A and 2B, the electronic value token transaction computer 150 comprises a rules unit 159. The rules unit 159 provides processing, management, associating, and implementing functionalities for e-wallet (and sub-wallet) rules as provided, selected, and/or required by e-wallet users, e-wallet providers, e-wallet accepting merchants, electronic value token issuers, e-wallet transaction system administrators, and combinations thereof. The rules unit 159 may function to associate provided, selected, and/or required rules with e-wallets and sub-wallets maintained in the database 180 and/or e-wallet unit 199. The rules unit 159 may comprise a rules engine for deriving rules to be applied to a transaction in the absence of (or in place of) any particular rule provided or selected by any other rule providing entity. The rules unit 159 may provide for e-wallet/sub-wallet rules data to be populated via (i) e-wallet user input (e.g., via kiosk, smart phone, personal digital assistant, and internet accessible user interface); e-wallet provider input; (iii) e-wallet system administrator’s input; (iv) or any combination thereof. For example, an e-wallet user may, via kiosk 189 interfacing, provide the electronic value token transaction computer 150
with specific, customized rules detailing the manner in which electronic value tokens contained in the e-wallet should be prioritized for use in satisfying transactions. Alternatively, the same e-wallet user could simply select the types of rules applicable to the e-wallet from a list of options provided by the kiosk’s 189 display. In addition, there may be instances, e.g., in a savings context, wherein certain laws, regulations, and/or policies require that an e-wallet be limited to a given number of selected transactions per period (e.g., transfers from a savings-dedicated e-wallet).

In an embodiment, the rules can be created and configured by the user as a flowchart for selection of value tokens based on purchase information. For example, a rule may comprise selection of a closed loop-related (Store X branded) value token for a Store X purchase of any amount, with any remaining purchase balance to result in selection of an open loop-related (Credit Card Y) value token to fund such remainder. Alternatively, the user may invoke a rule that prescribes that open loop-related electronic value tokens should not be used to satisfy balances for closed loop-related electronic value token purchase, but rather debit card-related electronic value tokens residing in the e-wallet should be utilized to satisfy the balance instead. As such, a user may access and apply multiple value tokens with the efficiency of using one authentication token (e.g., one proxy card or smartphone).

For example, the user may use an electronic gift card, an electronic coupon, and two electronic credit cards from an electronic wallet or sub-wallet all in the time it takes to use only one physical card such as a prepaid, debit, or credit card. The user, the retailer, issuers, vendors, merchants, advertisers, and other parties benefit from the time saved, the ready access to multiple sources of value (e.g., multiple accounts associated with the various value tokens), promotional opportunities, transaction tracking and data mining regarding customer purchasing behavior, promotional and advertising efficacy, real-time/point of product selection or purchase promotional opportunities, etc.

In another embodiment, the rules may be established by the e-wallet system provider (e.g., a primary and/or secondary e-wallet provider or host). The e-wallet system provider may establish a rule concerning e-wallet allocations when there is no user established rule available (or if under the terms of a user’s e-wallet use agreement the system’s rules take precedent in designated transaction activities). For example, the e-wallet system may put a rule in place that directs the electronic value token transaction computer 150 to first apply an e-wallet system provider’s own branded electronic value token residing in the user’s e-wallet to satisfy the requested transaction when the transaction concerns, relates, or involves an affiliate and/or contractually-related entity of the e-wallet system provider. As such, this type of rule could allow for the e-wallet system provider and its affiliates and/or contractually-related entities to maximize revenues or other business objectives based on use of the e-wallet system and other synergistic effects.

In a further embodiment, the e-wallet’s rules may be fashioned to automatically direct electronic value token exchange activities (electronic value token exchange will be discussed in more complete detail herein). For example, the e-wallet user may manage the e-wallet (as will be described in more detail herein, e.g., in relation to FIGS. 8A-617) so that upon the occasion when the user presents the e-wallet to satisfy a transaction at retail establishment, e.g., Retailer Q, the e-wallet contains no Retailer Q branded electronic value tokens, the e-wallet will automatically, and in real time, initiates an electronic value token exchange process wherein the e-wallet communicates a request for electronic value token exchange to the electronic value token transaction computer 150. Additionally or alternatively, the user may be presented in real-time with a promotion to obtain a retailer-specific value token (e.g., a real-time offer for a store branded value token such as a credit account). In this example, the e-wallet user may engage the e-wallet so that all electronic value tokens associated with prepaid services (gift card-type electronic value tokens) are located in a designated sub-wallet and each of said electronic value tokens may be placed/ordered/designated in the sub-wallet via a preferential ranking system, e.g., most preferred electronic value token or token type (e.g., #1) to least preferred electronic value token or token type (e.g., #22, if there are 22 types of electronic value tokens in the sub-wallet). For example, Retailer M branded electronic value tokens may be designated as most preferred and Retailer L branded electronic value tokens may be designated as least preferred. Further, in the example, the e-wallet also has been provided with rules by the user that directs the e-wallet, in circumstances wherein the e-wallet has been presented to facilitate a transaction at a retailer in which the e-wallet contains none of said retailer’s electronic value tokens (the e-wallet will recognize the retailer based on information exchanged between the e-wallet and the retailer’s communication devices at the onset of the original transaction), such as the Retailer Q scenario described above, the e-wallet rules direct the e-wallet to initiate an electronic value token exchange request and to include in said request the exchange of the least preferred electronic value token residing in the e-wallet, i.e., the Retailer L branded electronic value token (#22) and if necessary preferred electronic value token #21, #20, etc., for a Retailer Q electronic value token in an amount sufficient to meet the original transaction’s amount. The electronic value token transaction computer 150, upon receipt of the electronic value token exchange request, communicates with an electronic value token exchange program 2000 (which is part of the overall electronic value token transaction processing system 100, 1100, or 1200) to effectuate the requested electronic value token exchange. The requested electronic value token exchange is performed, the e-wallet receives the requested Retailer Q branded electronic value token, which is coincidentally used in conducting the original transaction, and the e-wallet surrenders (or makes unavailable for use and only available for modification) the Retailer L branded electronic value token to the electronic value token transaction computer 150, which in this case was actually valued in excess of the requested Retailer Q branded electronic value token. As such, the electronic value token transaction computer 150, modifies the value of the Retailer L branded electronic value token (either internally or via communication with the Retailer L branded electronic value token’s issuing system) to reflect the value reduction based on the provided Retailer Q branded electronic value token, extracts the exchange rate for the exchange of the Retailer Q branded electronic value token for the Retailer L branded electronic value token (as will be described more fully herein), communicates the transactional information to all interested parties, and returns (or makes available again) the value-modified Retailer L branded value token to the user’s e-wallet. In an alternate embodiment, the e-wallet’s electronic value token exchange rules could have provided that the e-wallet query the electronic value token
transaction computer 150 regarding the best available exchange rate for the electronic value tokens residing in the e-wallet and make the exchange based on the best exchange rate rather than the ranking of the electronic value tokens.

0046 FIG. 2A illustrates an exemplary electronic value token transaction processing system 100 in accordance with one embodiment. As shown, the electronic value token transaction processing system comprises: (a) at least one point of sale device 111; (b) an electronic wallet processing system, e.g., electronic value token transaction computer 150; (c) a datastore 180 containing an electronic wallet unit 199 storing electronic value tokens, e.g., 804, 827, 828, and 829, such as account numbers, electronic wallet account information, value added award conditions (herein “value added award” is synonymous with “value added bonus,” “value added bonus award,” “value added award bonus,” and “value differentiation”), and other information related to adding, redeeming, and managing the electronic value tokens; (d) at least one individual issuers’ authorization system 160; and (e) any other unit included in the system by the electronic value token transaction computer administrator 151. In one embodiment, the electronic value token transaction computer 150 comprises a value added determination unit 153, a point-of-sale (“POS”) interface 152, a message modification unit 154, a reconciliation unit 155, an issuer system interface 156, an authorization unit 157, and a sorting unit 198. In an embodiment, the electronic value token transaction computer 150 (or a unit thereof such as sorting unit 199) further comprises token exchange interface, which may communicate with electronic value token exchange program 2000. The POS Interface 152 provides a means for the electronic value token transaction computer 150 to communicate with the point of sale device 111 via, for example, the Internet, a Public Switched Telephone Network (“PSTN”), or an independent dedicated network. Likewise, the electronic value token transaction computer 150 may communicate via issuer system interface 156 with the issuers’ authorization system 160 via, for example, the Internet, a Public Switched Telephone Network (PSTN), or an independent dedicated network. Communications 106, 107 between the POS interface 152 and the point of sale device 111 and communications 109, 110 between the issuer system interface 156 and the issuers’ authorization systems 160 may be encrypted for added security and/or may utilize a virtual private network (“VPN”). The sorting unit 198 may sort the communications into various types for routing in various ways. For example, the sorting unit 198 may identify and sort electronic wallet and/or sub-wallet requests (e.g., upon receipt of authorization information with a transaction request, the sorting unit 198 can route the requested transaction to a specific electronic wallet maintained by the system and/or to a specific sub-wallet or sub-wallets associated with an electronic wallet), balance inquiry requests, registration requests, activation requests, redemption requests, and management requests for routing to the various units of FIG. 2A. The electronic value token transaction computer 150 or sorting unit 198 may also generate messages based on the requests for similar routing.

0047 As can be seen in FIG. 2A, at the point of sale device 111 (typically located at a vendor and/or redeeming merchant or retailer, but alternatively located at a kiosk 189 or at a user’s home or office where a personal computer is configured to act as a point of sale, for example during an on-line transaction,), the authentication token is interpreted by a point of sale interpretation unit 101 (e.g., a card reader). The point of sale interpretation unit 101 can comprise a human, a bar code scanner, magnetic strip reader, optical character recognition device, biometric device, numerical keyboard (e.g., for entering a token identification number) or other device configured to interrogate, interpret, capture, or input the data encoded in or on the authentication token.

0048 About contemporaneously with (or, alternatively, prior or subsequent to) the interpretation of the authentication token, a request for an electronic wallet transaction by a point of sale transaction unit 104 is made. The point of sale transaction unit 104 may comprise an electronic device, such as a register or terminal, a computer processing unit (“CPU”), a personal computer, a personal digital assistant (e.g., smart phone) or other means of requesting or messaging interpreted by the point of sale interpretation unit 101 and/or point of sale processing unit 105. In some embodiments, the actions performed by the point of sale interpretation unit 101 and the point of sale transaction unit 104 may be performed by one unit capable of performing both actions that would be performed by the individual units, for example a point of sale register/terminal or a personal computer during an on-line, web-based transaction.

0049 The point of sale interpretation unit 101 and the point of sale transaction unit 104 communicate with the point of sale processing unit 105. The point of sale processing unit 105 can comprise a CPU or other type of processing device accepted for use in the industry. The point of sale interpretation unit 101 communicates authentication information 102 to the point of sale processing unit 105. The point of sale transaction unit 104 communicates the request 103 for an electronic wallet transaction to the point of sale processing unit 105. The point of sale processing unit 105 may combine this information to communicate with the electronic value token transaction computer 150 (e.g., transmits a message requesting an electronic wallet transaction along with the associated transaction and/or authentication data). In an embodiment, the point of sale processing unit 105 stores and/or receives from the electronic value token transaction computer 150 (or a sub-administrator or unit associated therewith, such as a sub-wallet administrator) a transaction format associated with the POS retailer and/or associated with a given transaction type and/or value token, and such transaction format may be used to format the transaction request or message, to prompt the user for further information, or for other data gathering or transmit/receive features at the point of sale. For example, a user making a purchase at a retailer operates a card reader. A card reader may display with an input device and a barcode reader or magnetic strip scanner. The card reader may be touch sensitive and may have various buttons used for input. Following the card reader prompts, the user sees the options “Debit,” “Credit,” and “E-Wallet.” The user selects “E-Wallet.” The user then sees the options “Purchase,” “Add Token,” and “Delete Token.” The user selects “Purchase.” Following additional prompts (which in an embodiment relate to a transaction format specific to the particular retailer of the point of sale), the user enters a PIN number. In some embodiments, the actions performed by the point of sale interpretation unit 101, the point of sale transaction unit 104, and the point of sale processing unit 105 may all be performed by one unit (e.g., an integrated POS device such as a computerized register) capable of performing all the actions that would be performed by the individual units.

0050 The point of sale processing unit 105 is connectable to the electronic value token transaction computer 150 via a
suitable network, such as the Internet, the public switched telephone network (PSTN), or an independent dedicated network. Each point of sale processing unit 105 has an associated identifier (e.g., a terminal identifier or serial number) that may be transmitted to the electronic value token transaction computer 150 during the course of connecting the point of sale processing unit 105 to the electronic value token transaction computer 150. Each point of sale processing unit 105 may include multiple point of sale transaction units corresponding to individual terminals each with its own terminal identification, for example present within a given store location.

As depicted in FIG. 2A, the electronic value token transaction computer 150 is configured to: (a) form a secure connection with the retailer/merchant and/or vendor (e.g., via the point of sale device 111, customer internet access, or kiosk 189), the issuers' authorization systems 160, and any other entities 190 authorized to access the electronic value token transaction computer 150 by the electronic value token transaction computer administrator 151; (b) communicate with issuers' authorization systems 160 to request and receive redemption or addition of value tokens into electronic wallets; (c) to communicate with issuers' authorization systems 160 to redeem all or a portion of the electronic value tokens associated with the electronic wallet; (d) generate and maintain a transaction log 170 of all activities performed; (e) generate and maintain an error log 175 of all activities unsuccessfully completed and reasons therefore; (f) communicate to the retailer/merchant and/or vendor (e.g., via the POS unit 111) the redemption or addition of value tokens into electronic wallets and any information concomitant with the redemption or addition of value tokens into electronic wallets; and (g) communicate to the retailer/merchant and/or vendor (e.g., via the POS unit 111) any reasons why transactions cannot be completed.

The electronic value token transaction computer 150 may comprise a singular processing unit (e.g., a centralized server), a plurality of processing units (e.g., a distributed computing system with various units distributed and in communication with each other), or combinations thereof, with concomitant storage capabilities, each capable of or designated for: accessing the datastore 180; creating a transaction log 170; creating and maintaining an error log 175; communicating with retailers/merchants and/or vendors, e.g., at a point of sale, including via the internet for on-line transactions; communicating with the individual issuers' authorization systems 160; processing individual value token and electronic wallet requests; processing redemption requests; processing value added functions to add additional cash value or add an electronic redemption coupon for a specific product (s) or service(s); processing redemption request for electronic redemption coupons for specific product(s) and/or service(s); and communicating with other systems 190 capable of and authorized to communicate with the electronic value token transaction computer 150.

Datastore 180 maintains records of accounts associated with each electronic wallet indicating: (a) whether each individual value token has been added or redeemed, (b) whether the authentication token has been registered, (c) records and details of each individual redemption request, (d) the amount remaining on the electronic value tokens, (e) rules required for redeeming the electronic value tokens, (f) identity of the issuers of the electronic value tokens, (g) value added bonus awards, (g) rules for redeeming value added bonus awards, and (h) any combination thereof. The datastore may also maintain records of rules required for granting a value added bonus award to an electronic wallet or value token.

Datastore 180 also maintains records associated with each electronic wallet and/or sub-wallet indicating: (a) timing of, and other information related to, registration activities; (b) timing of, and other information related to, management activities; (c) timing of, and other information related to, transaction activities; (d) rules applicable; (f) identity of the issuers electronic value tokens therein; (f) identity of sub-wallets associated therewith; (h) any other records requested by issuers, merchants, vendors, advertisers, users, or other interested parties; and (i) any combination thereof. While a single datastore 180 is shown, it should be understood that a plurality of datastores may be employed, and relevant data divided among the datastores in any suitable manner to meet the various processes and objectives described herein. Also, the various data may be associated with one or more datastores closely coupled to and/or located in proximity to one or more sub-units, sub-processors, third party processors, and the like associated with the electronic value token transaction computer 150, and such datastores preferably have data used by such sub-units, sub-processors, and third party processors.

The electronic value token transaction computer 150 is also configured to generate and maintain a transaction log 170 of all activity involving the electronic value token transaction computer 150. The transaction log may comprise a detailed summary of transaction types such as: (a) requested value token additions; (b) requested value token sales; (c) requested value token redemptions; (d) requested value token exchanges; (e) the monetary amount ascribed to value token additions; (f) the monetary amount ascribed to value token redemptions; (g) the monetary value ascribed to value token exchanges; (h) the value added amounts, products, or services additions; (i) the value added amounts, products, or services redemptions; (j) the time the electronic value tokens were added; (k) the time the electronic value tokens were redeemed; (l) the transaction or communication performed with the issuer for adding value tokens; (m) the transaction or communication performed with the issuer for redeeming value tokens; (n) the PIN communicated to the vendor in response to a request to add a value token requiring the input of a PIN for use; (o) e-wallet registration; (p) e-wallet set-up activities; (q) e-wallet transaction activities; (r) e-wallet savings activities; (s) e-wallet management activities; (t) any other information the electronic value token transaction computer administrator 151 directs the electronic value token transaction computer 150 to maintain as a log entry; and (u) any combination thereof.

The information contained in the transaction log 170 may be used for data mining purposes, e.g., to generate reconciliation reports, settlement reports, payment reports, audit reports, e-wallet registration reports, e-wallet management reports, e-wallet usage reports, e-wallet savings reports, electronic value token purchase reports, electronic value token redemption reports, electronic value token exchange reports, electronic value token sale reports, or other forms of information aggregation for the benefit of, use by, or for provision to, the electronic value token transaction administrator 151, the datastore administrator 181, vendors, issuers, issuers' authorization systems 160, redeeming merchants, or other interested parties. For example, the transaction log 170 contains information about each transaction performed by electronic value token transaction computer 150 (and any
sub-components thereof) and may be utilized by the reconciliation unit 155 when reconciling accounts belonging to various vendors, merchants, issuers and the electronic value token transaction processing system administrator(s). Additional data mining considerations that may be recorded, analyzed, and/or provided interested parties (e.g., vendors, merchants, issuers, advertisers, etc.) include data about: (i) the purchase habits of e-wallet users; (ii) electronic value token purchases, sales, redemptions, and exchanges; (iii) special offer and/or value added activities; (iv) loyalty-related activities; and (v) savings-related activities, all of which can be used for marketing, inventory, and other purposes.

The message modification unit modifies the messages and requests so that multiple units, sub-components/processors, or third-party administrators can recognize and correctly interpret the messages. For example, after the electronic value token transaction computer 150 determines the individual issuers’ authorization systems 160 associated with the request, the message modification unit 154 accesses the database 180 to determine the appropriate transaction messaging formats for each individual issuers’ authorization systems 160 and then formats the subsequent communications to said individual issuers’ authorization systems 160 using the individual issuers’ authorization systems 160 specified/preferred transaction format and vocabulary. The electronic value token transaction computer’s 150 communication with the individual issuers’ authorization systems 160 may occur simultaneously or independently. The electronic value token transaction computer 150 is connectable to the individual issuers’ authorization systems as via a suitable network, such as the PSTN, the Internet, or an independent dedicated network. The electronic value token transaction computer 150 is configured to send and/or receive communication 110 from the issuers’ authorization systems 160 concerning the status of the electronic value tokens.

The reconciliation unit 155 reconciles the accounts of various issuers, selling vendors, and/or redeeming merchants, to credit and debit appropriate merchants, vendors, the electronic value token transaction processing system administrator, and issuers with the value of various transactions to reflect which entities received value from which other entities. For example, if a vendor A sells a value token issued by issuer B for a specified amount and receives payment from a user who adds the electronic value token to the user’s electronic wallet, the selling vendor receives a percentage (e.g., retains a percentage) of the purchase amount and/or a predetermined amount, the electronic value token system administrator receives a percentage of the purchase amount and/or predetermined amount for processing the transaction, and the issuer receives the remainder. If a value token issued by issuer Y is redeemed at merchant X to purchase items, then the amount redeemed is debited to the issuer Y and credited to the merchant X, sometimes minus a transaction fee collected by the issuer and/or a transaction or processing fee collected by the electronic value token transaction processing system administrator.

The authorization unit 157 is utilized when the electronic value token transaction computer 150 is also the authorizing system such that the electronic value token transaction computer 150 authorizes electronic wallet requests rather than transmitting the request to the issuers’ authorization systems 160 for authorization. The authorization unit 157 may perform the same and/or different functions as described for authorization systems 160 and vice-versa.

The authorization unit 157 will validate the formatting of the e-wallet transaction request (e.g., primary or sub-wallet) received from the POS processor 105 (or other transaction originating device/component/processor). In other words, the authorization unit 157 will check the data fields in the request to confirm that the fields are populated with data and that the data is in the correct format (e.g., length, alphanumeric format). If the request is improperly formatted, the authorization unit 157 will reject the request, or in some embodiments may retrieve the proper format (e.g., from a format database) and modify the transaction request to comply with the proper format. The authorization unit 157 also performs various validation checks on the request. The autho-
Authorization unit 157 verifies card-related transaction information based on an analysis of several criteria, such as: 1) determining that the UPC code for the product is present in the datastore 180 (or other database such as an issuer's database) for the electronic value token transaction processing system 100; 2) determining that the value amount of the requested transaction corresponds to the customer's payment for the subject transaction request, e.g., whether the UPC information identifies the card as a $25.00 card and that the corresponding transaction request includes a $25.00 payment by the customer; 3) determining that the UPC information identifies the card as being a type of card available for processing by the requesting merchant; and 4) determining that the Bank Identification Number ("BIN") of the card (i.e., the first six digits of the card's identification number), which identifies the card issuer, corresponds to the UPC information identifying the card issuer.

[0064] The authorization unit 157 may also verify transactions based on other criteria such as transaction velocity (number/amount per unit time). For example, if a card processor is concerned that multiple void transactions are indicative of fraudulent activity, the card processor could ask that the electronic value token transaction processing system 100 monitor the number of void transactions requested and reject transactions from terminals that exceed a pre-selected amount of void transactions per unit time. Lastly, the authorization unit 157 may be configured to reject transaction requests in the event that the information received by the authorization unit 157 is unintelligible.

[0065] If the request is properly formatted and is validated as described above, the electronic value token transaction computer 150 may transmit details of transactions to the issuers' authorization systems rather than authorization requests. Also, in some embodiments, the issuer, the authorizing system (e.g., authorization unit 157), and the transaction computer are part of the same entity and, in such an embodiment, there would be no issuers' authorization systems 160 or the issuers' authorization systems 160 would be under common control with the other units of the electronic value token transaction computer 150 (for example, a commonly owned and operated computing system, that may be centralized (e.g., part of a centralized data center) and/or distributed within a commonly owned or controlled system or network). Furthermore, it should be noted that although units associated with the electronic value token transaction computer 150 (e.g., units 152-157) are depicted as various units within a single data processing system for illustration and conceptual purposes, one or more of units 152-157 could be implemented on separate computers, systems, or servers in a distributed data processing environment.

[0066] An exemplary process utilized by an electronic value token transaction computer 150 for facilitating a purchase using an electronic wallet in accordance with a primary e-wallet transaction processing embodiment is depicted in FIG. 4A. Such an embodiment may be exemplified by the e-wallet transaction processing request being both initially received by and subsequently performed by the electronic value token transaction processing system 100. The actions depicted can be performed in the order shown or in a different order, and two or more of the actions can be performed in parallel.

[0067] In block 302, the electronic value token transaction computer 150 receives a request or multiple requests from a point of sale terminal. In at least one embodiment the requests may comprise an electronic wallet transaction request, a balance inquiry request, a registration request, an activation request, or a redemption request, a wallet management request, and contains one or more of the following: (a) identity of the terminal, (b) authentication information, (c) the amount of the purchase, (d) the identity of the electronic value token issuer, (e) the identity of the vendor, (f) the identity of the location, (g) the time of the request, (h) the date of the request, (i) information expressly identifying the request as an e-wallet transaction request (e.g., transaction type data); (j) information identifying a primary e-wallet, sub-wallet(s), or a combination thereof; (k) any other transaction and/or authentication data described herein; and (l) any combination thereof. The request at block 302 may comprise other information, requests or functions, for example of the types described herein, in addition to or in place of the above enumerated items. In at least one embodiment, the authentication information is based on an authentication token selected from the group consisting of proxy card and cellular phone. Using the identity of the electronic value token issuer, transactions may be correctly formatted for communication with the electronic value token issuer.

[0068] Using information contained within the electronic wallet transaction received from the point of sale device 111 and/or from information obtained from datastore 180, in block 304, the electronic value token transaction computer 150 determines whether the request is an electronic wallet request containing valid authentication information and whether the request is for redemption of a value token(s), addition of a value token(s), deletion of a value token(s), or management of the electronic wallet. The electronic wallet request may comprise a bank identification number ("BIN") located on the proxy card as part of the authentication information. The sorting unit may decode the BIN number or otherwise verify that the request is an electronic wallet request.

[0069] Using information contained within the electronic wallet transaction received from the point of sale device 111 and/or from information obtained from datastore 180, in block 324, the electronic value token transaction computer 150 identifies/determines the primary e-wallet, sub-wallet(s), and/or locations of said e-wallet or sub-wallet(s) indicated/necessary to effectuate the received e-wallet transaction request. If the authorization information received indicates the requested e-wallet transaction involves a primary e-wallet, sub-wallet, or combinations thereof maintained by the electronic value token transaction computer 150, the electronic value token transaction computer 150 may (i) apply its own logic to the request; (ii) apply rules stored in a primary wallet (e.g., rules established by the electronic value token transaction processing system administrator, the primary e-wallet user, or a combination thereof); (iii) apply rules stored in a sub-wallet (e.g., rules established by the electronic value token transaction processing system administrator, the sub-wallet user, or a combination thereof) (iv) apply rules received with the request from the point of sale 111 (e.g., contemporaneous rules submitted with the request by the user of the primary e-wallet/sub-wallet); (v) or any combination thereof.

[0070] For example, an embodiment may include the electronic value token transaction computer 150 determining that the entire request is related to value tokens contained in a primary e-wallet. Upon receipt of the request, the electronic value token transaction computer 150 will query its authori-
zation unit 157 (as described more fully herein), its datastore 180, the E-Wallet unit 199, and any other necessary unit to determine whether the primary e-wallet comprises value tokens capable of meeting the subject request (e.g., whether the primary e-wallet contains value tokens associated with vendors, merchants, and/or issuers related to the requested transaction). Such determination may be performed by comparing electronic value token identifications, user IDs, requested transaction types. The electronic value token transaction computer 150 will subsequently evaluate the manner in which the electronic value tokens available in the primary e-wallet corresponding to the request will be applied under the primary e-wallet’s rules and/or rules received with the request, and perform or refuse to perform the requested transaction and/or transactions.

Another embodiment may include the electronic value token transaction computer 150 determining that the entire request is related to value tokens contained in a sub-wallet. Upon receipt of the request, the electronic value token transaction computer 150 will query its authorization unit 157 (as described more fully herein), its datastore 180, the E-Wallet unit 199, and any other necessary unit to determine whether the sub-wallet comprises value tokens capable of meeting the subject request (e.g., whether the sub-wallet contains value tokens associated with vendors, merchants, and/or issuers related to the requested transaction). Such determination may be performed by comparing electronic value token identifications, user IDs, requested transaction types. The electronic value token transaction computer 150 will subsequently evaluate the manner in which the electronic value tokens available in the sub-wallet corresponding to the request will be applied under the sub-wallet’s rules and/or rules received with the request, and perform or refuse to perform the requested transaction and/or transactions.

In another example, an embodiment may include the electronic value token transaction computer 150 determining that a portion of the entire transaction request is related to electronic value tokens residing in a primary e-wallet while a portion of the transaction request is related to electronic value tokens residing in a sub-wallet(s). Such determination may be made by evaluating the requested transaction type, the electronic value token identification, or any other methods for determining transaction allocation. The electronic value token transaction computer 150 will evaluate the manner in which the electronic value tokens available in the primary e-wallet corresponding to the request will be applied under the primary e-wallet’s rules (as those rules may affect payment methods to be employed which are located in the primary e-wallet), the electronic value token transaction computer 150 will evaluate the manner in which the electronic value tokens available in any applicable sub-wallet corresponding to the request will be applied under such sub-wallet’s rules and/or rules received with the request, and perform or refuse to perform the requested transaction and/or transactions.

In an exemplary embodiment, at block 324, the electronic value token transaction computer 150 may identify, in response to a received transaction request, one or more value tokens in a primary e-wallet and one or more electronic value tokens in a sub-wallet that, when used together, will cover the entirety of the requested e-wallet transaction. Moreover, one of the electronic value tokens located in the primary e-wallet or sub-wallet may be an electronic representation of a loyalty card and another electronic value token located in either the same or different location of said loyalty card value token may be an electronic representation of a retailer’s gift card. In such an example, the electronic value token transaction computer 150 can effectuate the coincidental use of the “loyalty card” token and the “retailer’s gift card” token, regardless of the tokens’ locations in the primary e-wallet and/or sub-wallet(s) to allow for an enhanced user benefit as opposed to not coincidentally applying the value of the “retailer’s gift card” token and the “loyalty card” token for the transaction, e.g., a 5% increase in the value of the “retailer’s gift card” token or loyalty point bonus applied to the “loyalty card” token for the use of the “retailer’s gift card” token.

A value token may be associated with a closed loop account or open loop account. A closed loop account typically expires after the funds in the account have been depleted, e.g., a gift card account. An open loop account does not typically expire. Rather, there is typically an ongoing obligation for various entities to credit and debit the account, e.g., a branded credit card account or debit card account such as Visa or Mastercard. Closed loop accounts are often associated directly with retailers while open loop accounts are often associated with financial institutions (e.g., Chase or Citibank). In at least one embodiment, the electronic value tokens comprise closed loop account numbers and open loop account numbers. The closed loop account numbers are associated with retailers able to debit or credit closed loop accounts associated with the closed loop account number. The open loop account numbers are associated with financial institutions able to debit or credit open loop accounts associated with the open loop account numbers. The electronic value token may have an expiration date or specified dates of use that are different from any other value tokens. Furthermore, the electronic value tokens may identify specific merchants, locations, and/or products with which the electronic value tokens may be utilized.

If the request is for value token addition, then in block 306, the electronic wallet is created (if not already created) and the electronic value token is added to the electronic wallet. The following Tables include elements, parameters, and information included in e-wallet transaction communications and used by the electronic value token transaction processing system 100 to facilitate and effectuate e-wallet transactions.

Table 1A illustrates request parameters requested to create a wallet in at least one embodiment. Table 1B illustrates response parameters requested to create a wallet in at least one embodiment.

### TABLE 1A

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Type</th>
<th>Suggested Length</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accountType</td>
<td>String</td>
<td>200</td>
<td>Account Type</td>
</tr>
<tr>
<td>loadamount</td>
<td>decimal</td>
<td>N/A</td>
<td>Amount to be loaded into the wallet account</td>
</tr>
<tr>
<td>loadamountcurrency</td>
<td>string</td>
<td>3</td>
<td>Denomination Type</td>
</tr>
<tr>
<td>txuniqueidentifier</td>
<td>string</td>
<td>12</td>
<td>Unique transaction id.</td>
</tr>
</tbody>
</table>
TABLE 1B

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accountid</td>
<td>string</td>
<td>Unique identifier for an account</td>
</tr>
<tr>
<td>accounttype</td>
<td>string</td>
<td>Type of the account.</td>
</tr>
<tr>
<td>currency</td>
<td>string</td>
<td>Denomination Type.</td>
</tr>
<tr>
<td>balance</td>
<td>decimal</td>
<td>Balance available in the account</td>
</tr>
<tr>
<td>uniquidentifier</td>
<td>string (numeric)</td>
<td>The unique identifier identifies a transaction.</td>
</tr>
<tr>
<td>code</td>
<td>string</td>
<td>The Status of the requested transaction.</td>
</tr>
<tr>
<td>description</td>
<td>string</td>
<td>The Status description of the requested transaction.</td>
</tr>
</tbody>
</table>

TABLE 3-continued

<table>
<thead>
<tr>
<th>Element and Description</th>
<th>Data Type</th>
<th>Suggested Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>card.notes</td>
<td>String</td>
<td>500</td>
</tr>
<tr>
<td>card.nickname</td>
<td>String</td>
<td>100</td>
</tr>
<tr>
<td>card.currency</td>
<td>String</td>
<td>30</td>
</tr>
<tr>
<td>card.currency2</td>
<td>String</td>
<td>30</td>
</tr>
<tr>
<td>card.currency3</td>
<td>String</td>
<td>30</td>
</tr>
<tr>
<td>card.customer.service</td>
<td>String</td>
<td>10</td>
</tr>
<tr>
<td>card.customer.service2</td>
<td>String</td>
<td>10</td>
</tr>
<tr>
<td>card.customer.service3</td>
<td>String</td>
<td>10</td>
</tr>
<tr>
<td>card.customer.service4</td>
<td>String</td>
<td>10</td>
</tr>
<tr>
<td>card.customer.service5</td>
<td>String</td>
<td>10</td>
</tr>
</tbody>
</table>

TABLE 2

<table>
<thead>
<tr>
<th>Element and Description</th>
<th>Data Type</th>
<th>Suggested Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>statusinfo.status.code</td>
<td>String</td>
<td>7</td>
</tr>
<tr>
<td>statusinfo.status.description</td>
<td>String</td>
<td>500</td>
</tr>
<tr>
<td>card.retailer.id</td>
<td>Integer</td>
<td>11</td>
</tr>
<tr>
<td>card.retailer.name</td>
<td>String</td>
<td>100</td>
</tr>
<tr>
<td>card.number</td>
<td>String</td>
<td>50</td>
</tr>
<tr>
<td>card.securitycode</td>
<td>String</td>
<td>50</td>
</tr>
<tr>
<td>card.expriydate</td>
<td>Integer</td>
<td>6</td>
</tr>
<tr>
<td>card.activationdate</td>
<td>Date</td>
<td>20</td>
</tr>
<tr>
<td>card.initialbalance</td>
<td>Decimal</td>
<td>10</td>
</tr>
<tr>
<td>card.currentbalance</td>
<td>Decimal</td>
<td>10</td>
</tr>
<tr>
<td>card.currentbalance1</td>
<td>String</td>
<td>20</td>
</tr>
<tr>
<td>card.customer.service</td>
<td>String</td>
<td>256</td>
</tr>
<tr>
<td>card.currency</td>
<td>String</td>
<td>3</td>
</tr>
</tbody>
</table>

[0077] The electronic value token transaction computer preferably allocates memory for the electronic wallet and value token(s) and associates the account number with the electronic wallet and/or authentication information stored in the electronic wallet unit 139 by storing the pieces of information in a data structure on the datastore 180. Table 2 illustrates the parameters for a gift card value token in at least one embodiment.

[0078] Table 3 illustrates more detailed parameters for a gift card electronic value token in an alternative embodiment, including the designation of associated wallet(s) and/or sub-wallet(s).

[0079] The request, however, may be modified for other reasons unrelated to the add token decision and forwarded to the appropriate one of the issuers' authorization systems 160 as part of the reconciliation process, for example the request could concern redemption, deletion, reloading value, added value, balance inquiry, or a combination thereof, each of which would be communicated to the issuers' authorization systems 160 for reconciliation.

[0080] Table 4 illustrates formatting for authentication communication.

TABLE 4

<table>
<thead>
<tr>
<th>Element and Description</th>
<th>Data Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>client_ref_id</td>
<td>String</td>
</tr>
<tr>
<td>signature</td>
<td>String</td>
</tr>
<tr>
<td>timestamp</td>
<td>String</td>
</tr>
<tr>
<td>nonce</td>
<td>String</td>
</tr>
<tr>
<td>encryption_type</td>
<td>String</td>
</tr>
<tr>
<td>usertoken</td>
<td>String</td>
</tr>
<tr>
<td>user_ip</td>
<td>String</td>
</tr>
<tr>
<td>channel</td>
<td>String</td>
</tr>
</tbody>
</table>

[0081] Each request is authenticated using the signature, a user is authenticated with username/password or open id, the session is validated using the user token. A client may send client_ref_id, timestamp, nonce, encryption_type, channel, user_ip, signature, optionally usertoken with each request to be able to validate each message.

[0082] Table 5 illustrates the parameters used to retrieve a user's wallet.

TABLE 5

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accountid</td>
<td>string</td>
<td>Unique identifier for an account</td>
</tr>
<tr>
<td>accounttype</td>
<td>string</td>
<td>Type of the account.</td>
</tr>
<tr>
<td>currency</td>
<td>string</td>
<td>Denomination Type.</td>
</tr>
</tbody>
</table>
Table 6A illustrates the request parameters used to redeem value from a token in the wallet.

### TABLE 6A Request Parameters

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Type</th>
<th>Suggested Length</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accountid</td>
<td>string</td>
<td>100</td>
<td>Unique identifier for the account</td>
</tr>
<tr>
<td>accounttype</td>
<td>string</td>
<td>50</td>
<td>Type of the account.</td>
</tr>
<tr>
<td>currency</td>
<td>string</td>
<td>3</td>
<td>Denomination Type.</td>
</tr>
<tr>
<td>balance</td>
<td>decimal</td>
<td>N/A</td>
<td>Balance available in the account</td>
</tr>
<tr>
<td>uniquetransaction</td>
<td>string</td>
<td>12</td>
<td>Unique transaction id.</td>
</tr>
<tr>
<td>txtimeoutreversal</td>
<td>bool</td>
<td>N/A</td>
<td>0, if it is not a reversal of any transaction type 1, if it is a reversal transaction.</td>
</tr>
<tr>
<td>tXIl</td>
<td>string</td>
<td>12</td>
<td>Unique transaction id.</td>
</tr>
</tbody>
</table>

Table 6B illustrates the response parameters used to redeem value from a token in the wallet.

### TABLE 6B Response Parameters

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Type</th>
<th>Suggested Length</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accountid</td>
<td>string</td>
<td>100</td>
<td>Unique identifier for the account</td>
</tr>
<tr>
<td>accounttype</td>
<td>string</td>
<td>50</td>
<td>Type of the account.</td>
</tr>
<tr>
<td>currency</td>
<td>string</td>
<td>3</td>
<td>Denomination Type.</td>
</tr>
<tr>
<td>balance</td>
<td>decimal</td>
<td>N/A</td>
<td>Balance available in the account</td>
</tr>
<tr>
<td>uniquetransaction</td>
<td>string</td>
<td>12</td>
<td>Unique transaction id.</td>
</tr>
<tr>
<td>tXIl</td>
<td>string</td>
<td>7</td>
<td>The Status of the requested transaction.</td>
</tr>
<tr>
<td>description</td>
<td>string</td>
<td>500</td>
<td>The Status description of the requested transaction.</td>
</tr>
</tbody>
</table>

If the request is for value token redemption, then in block 308, the electronic value token transaction computer 150 accesses the electronic wallet previously determined to be associated with the authentication information and examines the rules associated with the electronic wallet. In at least one embodiment, examining the rules comprises examining priorities of value tokens configurable by the user. For example, the user may prefer to use any closed loop value tokens corresponding to the retailer originating the purchase request. If none is found or if the token will not cover the purchase, then the user may prefer to use an open loop value token for the remainder. As a result of these preferences, the closed loop value tokens may all have higher priority than the open loop value tokens. Among the open loop value tokens, one may have priority over another. For example, the user prefers to pay for any remainder with a credit card rather than a debit card. In at least one embodiment, the user may configure these rules via the Internet or mobile application and save the priorities as default preferences. In an alternative embodiment, the user selects the electronic value tokens to apply to the electronic wallet request at the POS device, for example at a vendor or retail location such as a check-out lane, customer service counter, or kiosk, as such selecting the electronic value tokens comprises selecting value tokens with the highest priority that, when used together, will cover the purchase amount. As can be seen in the example, one purchase transaction has been split into two redemptions without compromising efficiency of the purchase. Similarly, one or more electronic wallet transactions can be split into two or more transactions without compromising efficiency.

Table 7A illustrates the request parameters used to load a value token into the wallet.

### TABLE 7A Request Parameters

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Type</th>
<th>Suggested Length</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accountid</td>
<td>string</td>
<td>100</td>
<td>Unique identifier for a account</td>
</tr>
<tr>
<td>amount</td>
<td>decimal</td>
<td>N/A</td>
<td>Amount to load on the account</td>
</tr>
<tr>
<td>amountcurrency</td>
<td>string</td>
<td>3</td>
<td>Amount Type.</td>
</tr>
<tr>
<td>txtimeoutreversal</td>
<td>bool</td>
<td>N/A</td>
<td>0, if it is not a reversal of any transaction type 1, if it is a reversal transaction.</td>
</tr>
<tr>
<td>txuniqueidentifier</td>
<td>string</td>
<td>12</td>
<td>Unique transaction id.</td>
</tr>
</tbody>
</table>
when used together, will cover the electronic wallet request. For example, the user may configure the rules such that each purchase is split evenly between two credit cards. As such, selecting the electronic value tokens comprises selecting two open loop tokens between which to split the purchase amount.

Similar to the above example, efficiency is preserved because where a single authorization token (e.g., only the proxy card or a mobile device) was used at the point of sale, not the two credit cards corresponding to the electronic value tokens. Other rules can be implemented, and the rules can be used in various combinations and permutations with each other. The electronic value token transaction processing system can also implement “if-then” rules based on the information transmitted in the electronic wallet request. For example, a purchase at a gas station can result in a gas credit card value token selection, and the like. In such an embodiment, the electronic value token computer 150 may query the rule(s) 802, 817, 818, and 819 of the subject e-wallet 10 and/or sub-wallets 807 (e.g., for credit card-type electronic value tokens), 808 (e.g., for debit card-type electronic value tokens), and 809 (e.g., for stored value-type electronic value tokens) and determine, based on transaction request information which includes a transaction type, e.g., purchase at a gas station, that rule(s) established for the subject e-wallet 10 and/or sub-wallets 807, 808, and 809 require that the transaction type request be first satisfied with a first electronic value token type, e.g., a gas card-related electronic value token 829, and upon the occasion that the subject e-wallet 10 and/or sub-wallet(s) 807, 808, and 809 do not comprise a sufficient amount of the first value token type to satisfy the entire transaction request, the electronic value token computer 150 may satisfy the remainder of the transaction request with a second electronic value token type, e.g., a debit card-related electronic value token 828.

The electronic value token transaction computer 150 also applies the electronic value tokens to the electronic wallet request. In applying the electronic value tokens to the request, the electronic value token transaction computer 150 can generate and send debit and credit messages to be performed on the accounts administered by the retailers and financial institutions using the appropriate account numbers, or the electronic value token transaction computer 150 can credit or debit the accounts directly if the electronic value token transaction computer has such administrative authority.

In at least one embodiment, the electronic value token transaction computer 150 modifies the request (e.g., applies a required format) and forwards the modified request to the appropriate one of the issuers’ authorization systems 160, which receives the modified request and acts upon same, for example authorizing and/or processing the request to redeem the electronic value token and updating a datastore accordingly. The authorization system 160 is not at the same location from where the electronic wallet request was received in at least one embodiment. For example, if the electronic wallet request was received from a retail store, the authorization system may be owned and operated by the retailer, but will not be at the retail store. Rather, the authorization system may be located at a data center for example. As such, neither the retail store nor the retailer in general need be aware of some or all the contents of the wallet. In at least one embodiment, the retail store is unaware of even the presence of the electronic wallet, as it merely recognizes that some transaction authorizing action has been communicated to its point of sale (e.g., swipe of a proxy card, digital personal assistant interaction with point of sale device, entry of a PIN at a keypad at point of sale, or other authorizing activity). In other words, access and use of the e-wallet at the point of sale is seamless and does not require any special or custom actions in order to process the transaction in comparison to traditional physical tender. The issuers’ authorization systems 160 sends a response message back to the electronic value token transaction computer 150. In an alternative embodiment where the electronic value token transaction computer 150 performs the functions of the issuers’ authorization systems 160, the method may proceed directly from block 306 or 310 to block 314.

The electronic value token transaction computer 150 receives the confirmation message from the appropriate one of the issuers’ authorization systems 160 in block 312. At block 314, the electronic value token transaction computer 150 updates electronic wallet in the electronic wallet unit 199 and datastore 180 to reflect that the electronic wallet is activated and to reflect any debit, credit, addition, or deletion to/of the electronic value token(s). FIGS. 6A-D illustrate a series of user interface screens and prompts in at least one embodiment. For example, the user may see the illustrated prompts when managing the user’s electronic wallet via a computer connected to the Internet, and/or kiosk 189.

A transaction log 170 may be updated by the electronic value token transaction computer 150 in block 316 to record the details about the transaction. The details recorded in the transaction log may include (a) the type, time and date of the transaction, (b) whether the electronic wallet was activated, (c) the reason electronic wallet was not activated if the request was denied, (d) the credit, debit, addition, or deletion to/of the electronic value token(s), (e) a change in rules associated with the electronic value token(s), (f) the identity of the vendor, (g) the identity of the issuer, (h) the location of the vendor, (i) the identity of the terminal adding the electronic value token, (j) the identity of the entity granting the electronic value token, and (k) any combination thereof. The transaction log may include other information (e.g., transaction and/or authentication data) in addition to or in place of the items enumerated above.

The electronic value token transaction computer 150, in block 318, then forwards the confirmation message to the point of sale device 111. The electronic value token transaction computer 150, prior to forwarding the confirmation message to the point of sale device 111, may modify the confirmation message, for example as necessary to include information that may be printed on a receipt for the customer and/or presented on a display to the store clerk operating the point of sale device 111. At block 320, the electronic value token transaction computer 150 reconciles the accounts of the various vendors, merchants, issuers, the electronic value token transaction processing system administrator, and other entities involved with issuing, selling, redeeming, and marketing the electronic value tokens to debit and credit appropriate accounts and, in some embodiments, initiates funds transfers between appropriate bank accounts belonging to the various entities. Alternatively, reconciliation of accounts may be performed periodically (e.g., daily, weekly, monthly, etc.) rather than after each transaction. In such an embodiment, the information from the transaction log 170 may be utilized to reconcile the various entities involved with the sale or redemption of various value tokens thus requiring fewer funds transfers to be initiated. In an embodiment, information in transaction log 170 is used to match transactions and the
like. For example, grouping all transactions from a given location or a given merchant, or grouping transaction types (e.g., credit, debit, etc.). In various embodiments, the sequence of events depicted in may be varied, and thus may be carried out in any desired order, sequentially or simultaneously.

[0094] FIG. 2B illustrates an exemplary electronic value token transaction processing system 1100 in accordance with an embodiment wherein the electronic wallet processing system comprises the electronic value token transaction computer 150, functioning as an electronic sub-wallet transaction processor, integrated with a primary electronic wallet transaction processor such as depicted by E-Wallet Aggregator System 1000. E-Wallet Aggregator System 1000 may be further understood to have the same functionalities, capabilities, database access, networked connections, and operative components as the herein described electronic value token transaction computer 150, and in some embodiments an electronic value token transaction computer 150 and its associated components (e.g., electronic value token transaction processing system 1000) may serve as, or be substituted for, the E-Wallet Aggregator System 1000. In an embodiment, the E-Wallet Aggregator System 1000 may be controlled, maintained, operated, owned, and/or otherwise managed by a common entity or entities which control, maintain, operate, own, and/or otherwise manage the electronic value token transaction computer 150, i.e., the primary electronic wallet transaction processor and the electronic sub-wallet transaction processor share a common controller, maintainer, operator, owner, and/or manager. In an embodiment, the E-Wallet Aggregator System 1000 may be controlled, maintained, operated, owned, and/or otherwise managed by an entity or entities that are separate, distinct, and/or unrelated to the entity and/or entities which control, maintain, operate, own, and/or otherwise manage the electronic value token transaction computer 150, i.e., the primary electronic transaction processor and the electronic sub-wallet transaction processor do not share a common controller, maintainer, operator, owner, and/or manager.

As shown, when functioning in an electronic sub-wallet transaction processing capacity, the electronic value token transaction processing system 1100 comprises: (a) an electronic value token transaction computer 150; (b) an E-Wallet Aggregator System interface 1052; (c) a datastore 180 containing an electronic wallet unit 199 storing electronic value tokens, e.g., 804, 827, 828, and 829, such as account numbers, electronic wallet account information, value added award conditions (herein “value added award” is synonymous with “value added bonus,” “value added bonus award,” “value added award bonus,” “value differentiation”), and other information related to adding, redeeming, and managing the electronic value tokens, as described in detail herein; (d) at least one individual issuers’ authorization system 160; and (e) any other unit included in the system by the electronic value token transaction computer administrator 151. In one embodiment, the electronic value token transaction computer 150 comprises a value added determination unit 153, an E-Wallet Aggregator System interface 1052, a message modification unit 154, a reconciliation unit 155, an issuer system interface 156, an authorization unit 157, and a sorting unit 198. The E-Wallet Aggregator System interface 1052 provides a means for the electronic value token transaction computer 150 to communicate with the E-Wallet Aggregator System 1000 via, for example, the Internet, a Public Switched Telephone Network (“PSTN”), or an independent dedicated network. Likewise, the electronic value token transaction computer 150 may communicate via issuer system interface 156 with the issuers’ authorization system 160 via, for example, the Internet, a Public Switched Telephone Network (PSTN), or an independent dedicated network. Communications between the E-Wallet Aggregator System interface 1052 and the E-Wallet Aggregator System 1000 and communications 109, 110 between the issuer system interface 156 and the issuers’ authorization systems 160 may be encrypted for added security and/or may utilize a virtual private network (“VPN”). The sorting unit 198 may sort the communications into various types for routing in various ways. For example, the sorting unit 198 may identify and sort sub-wallet requests (e.g., upon receipt of authorization information with a transaction request, the sorting unit 198 can route the requested transaction to a specific electronic sub-wallet maintained by the system and/or to a specific section or sections maintained within the electronic sub-wallet), balance inquiry requests, registration requests, activation requests, redemption requests, and management requests for routing to the various units of FIG. 2B. The electronic value token transaction computer 150 or sorting unit 198 may also generate messages based on the requests for similar routing.

[0095] As can be seen in FIG. 2B, at the point of sale device 111 (typically located at a vendor and/or redeeming merchant or retailer, but alternatively located at a kiosk 189 or at a user’s home or office where a personal computer is configured to act as a point of sale, for example during an on-line transaction), the authentication token is interpreted by a point of sale interpretation unit 101 (e.g., a card reader). The point of sale interpretation unit 101 can comprise a human, a bar code scanner, magnetic strip reader, optical character recognition device, biometric device, numerical keyboard (e.g., for entering a token identification number) or other device configured to interrogate, interpret, capture, or input the data encoded in or on the authentication token.

[0096] About contemporaneously with (or, alternatively, prior or subsequent to) the interpretation of the authentication token, a request for an electronic wallet transaction by a point of sale transaction unit 104 is made. The point of sale transaction unit 104 can comprise a human, an electronic input device, a register or terminal, a computer processing unit (“CPU”), a personal computer, a personal digital assistant, smart phone, or other means of requesting or messaging interpreted by the point of sale interpretation unit 101 and/or point of sale processing unit 105. In some embodiments, the actions performed by the point of sale interpretation unit 101 and the point of sale transaction unit 104 may be performed by one unit capable of performing both actions that would be performed by the individual units, for example a point of sale register/terminal or a personal computer during an on-line, web-based transaction.

[0097] The point of sale interpretation unit 101 and the point of sale transaction unit 104 communicate with the point of sale processing unit 105. The point of sale processing unit 105 can comprise a CPU or other type of processing device accepted for use in the industry. The point of sale interpretation unit 101 communicates authentication information 102 to the point of sale processing unit 105. The point of sale transaction unit 104 communicates the request 103 for an electronic wallet transaction to the point of sale processing unit 105. The point of sale processing unit 105 may combine this information to communicate with the E-Wallet Aggregator System 1000 (e.g., transmits a message requesting an
electronic wallet transaction along with the associated trans-
action and/or authentication data). In an embodiment, the
point of sale processing unit 105 stores and/or receives from
the E-Wallet Aggregator System 1000 (or a sub-administrator
or unit associated therewith, such as a sub-wallet administra-
tor, e.g., electronic value token transaction computer 150) a
transaction format associated with the POS retailer and/or
associated with a given transaction type and/or value token,
and such transaction format may be used to format the trans-
action request or message, to prompt the user for further
information, or for other data gathering or transmit/receive
features at the point of sale. For example, a user making a
purchase at a retailer operates a card reader. A card reader may
display an input device and a barcode reader or mag-
netic strip reader. The card reader may be touch sensitive
and may have various buttons used for input. Following the
card reader prompts, the user sees the options “Debit,”
“Credit,” and “E-Wallet.” The user selects “E-Wallet.” The
user then sees the options “Purchase,” “Add Token,” and
“Delete Token.” The user selects “Purchase.” Following addi-
tional prompts (which in an embodiment relates to a trans-
action format specific to the particular retailer of the point
of sale), the user enters a PIN number. In some embodiments,
the actions performed by the point of sale interpretation unit
101, the point of sale transaction unit 104, and the point of
sale processing unit 105 may all be performed by one unit
(e.g., an integrated POS device such as a computerized regi-
ster) capable of performing all the actions that would be
performed by the individual units.

[0098] The point of sale processing unit 105 is connectable
to the E-Wallet Aggregator System 1000 via a suitable net-
work, such as the Internet, the public switched telephone
network (PSTN), or an independent dedicated network. Each
point of sale processing unit 105 has an associated identi-
fier (e.g., a terminal identifier or serial number) that may be
transmitted to the E-Wallet Aggregator System 1000 during
the course of connecting the point of sale processing unit 105
to the E-Wallet Aggregator System 1000. Each point of sale
processing unit 105 may include multiple point of sale trans-
action units corresponding to individual terminals each with
its own terminal identification, for example present within a
given store location.

[0099] As depicted in FIG. 2B, the E-Wallet Aggregator
System 1000 is configured to: (a) form a secure connection
with the retailer/merchant and/or vendor (e.g., via the point
of sale device 111), the electronic value token transaction com-
puter 150, and the issuers’ authorization systems 160; (b) to
communicate with issuers’ authorization systems 160 to
request and receive redemption or addition of value tokens
into electronic wallets; (c) to communicate with issuers’
authorization systems 160 to redeem all or a portion of the
electronic value tokens associated with the electronic wallet;
(d) communicate with the electronic value token transaction
computer 150 to facilitate transactions concerning value
tokens residing in an electronic sub-wallet maintained by
the electronic value token transaction processing system 1100;
(e) communicate to the retailer/merchant and/or vendor (e.g.,
via the POS unit 111) the redemption or addition of value
tokens into electronic wallets and any information concomi-
tant with the redemption or addition of value tokens into
electronic wallets and/or sub-wallets; and (f) communicate to
the retailer/merchant and/or vendor (e.g., via the POS unit
111) any reasons why transactions cannot be completed.

[0100] The electronic value token transaction computer
150 may comprise a singular processing unit (e.g., a central-
ized server), a plurality of processing units (e.g., a distributed
computing system with various units distributed and in com-
unication with each other), or combinations thereof, with
concomitant storage capabilities, each capable of or design-
ated for: accessing the datastore 180; creating a transaction
log 170; creating and maintaining an error log 175; commu-
nicating with the E-Wallet Aggregator System 1000; commu-
nicating with the individual issuers’ authorization systems
160; processing individual value token and electronic wallet
requests; processing redemption requests, processing value
added functions to add additional cash value or add an elec-
tronic redemption coupon for a specific product(s) or service
(s), processing redemption request for electronic redemption
coupons for specific product(s) and/or service(s), and com-
municating with other systems 190 capable of and authorized
to communicate with the electronic value token transaction
computer 150.

[0101] datastore 180 maintains records of accounts asso-
ciated with each electronic sub-wallet indicating: (a) whether
each individual value token has been added or redeemed, (b)
whether an authentication token for an individual value token
has been registered, (c) records and details of each individual
redemption request, (d) the amount remaining on the elec-
tronic value tokens, (e) rules required for redeeming the elec-
tronic value tokens, (f) identity of the issuers of the electronic
value tokens, (g) value added bonus awards, (h) rules for
re redeeming value added bonus awards, and (i) any combi-
nation thereof. The datastore may also maintain records of rules
required for granting a value added bonus award to an elec-
tronic wallet or value token.

[0102] datastore 180 also maintains records associated
with each electronic wallet and/or sub-wallet indicating: (a)
timing of, and other information related to, registration activ-
ities; (b) timing of, and other information related to, manage-
ment activities; (c) timing of, and other information related to,
transaction activities; (d) rules applicable; (e) identity of
the issuers electronic value tokens therein; (f) identity of sub-
wallets associated therewith; (g) any other records requested
by issuers, merchants, vendors, advertisers, users, or other
interested parties; and (h) any combination thereof. While a
single datastore 180 is shown, it should be understood that a
plurality of datastores may be employed, and relevant data
divided among the datastores in any suitable manner to meet
the various processes and objectives described herein. Also,
the various data may be associated with one or more data-
tores closely coupled to and/or located in proximity to one or
more sub-units, sub-processors, third party processors,
and the like associated with the electronic value token transac-
tion computer 150, and such datastores preferably have data
used by such sub-units, sub-processors, and third party processors.

[0103] The electronic value token transaction computer
150 is also configured to generate and maintain a transaction
log 170 of all activity involving the electronic value token
transaction computer 150. The transaction log may comprise
a detailed summary of transaction types such as: (a) requested
value token additions; (b) requested value token sales; (c)
requested value token redemptions; (d) requested value token
exchanges; (e) the monetary amount ascribed to value token
additions; (f) the monetary amount ascribed to value token
redemptions; (g) the monetary value ascribed to value token
exchanges; (h) the value added amounts, products, or services
additions; (i) the value added amounts, products, or services
redemptions: (j) the time the electronic value tokens were added; (k) the time the electronic value tokens were redeemed; (l) the transaction or communication performed with the issuer for adding value tokens; (m) the transaction or communication performed with the issuer for redeeming value tokens; (n) the PIN communicated to the vendor in response to a request to add a value token requiring the input of a PIN for use; (o) e-wallet registration; (p) e-wallet set-up activities; (q) e-wallet transaction activities; (r) e-wallet savings activities; (s) e-wallet management activities; (t) any other information the electronic value token transaction computer administrator 151 directs the electronic value token transaction computer 150 to maintain as a log entry; and (u) any combination thereof.

[0104] The information contained in the transaction log 170 may be used for data mining purposes, e.g., to generate reconciliation reports, settlement reports, payment reports, audit reports, e-wallet registration reports, e-wallet management reports, e-wallet usage reports, e-wallet savings reports, electronic value token purchase reports, electronic value token redemption reports, electronic value token exchange reports, electronic value token sale reports, or other forms of information aggregation for the benefit of, use by, or for provision to, the electronic value token transaction administrator 151, the datastore administrator 181, the E-Wallet Aggregator System 1000 (e.g., for communication to vendors or other purposes), vendors, issuers, issuers’ authorization systems 160, redeeming merchants, or other interested parties. For example, the transaction log 170 contains information about each transaction performed by electronic value token transaction computer 150 (and any sub-components thereof) and may be utilized by the reconciliation unit 155 when reconciling accounts belonging to various E-Wallet Aggregator System 1000 associated vendors, merchants, issuers, as well as vendors, merchants, and issuers not associated with the E-Wallet Aggregator System 1000, and also the electronic value token transaction processing system administrator 151. Additional data mining considerations that may be recorded, analyzed, and/or provided interested parties (e.g., vendors, merchants, issuers, advertisers, etc.) include data about: (i) the purchase habits of e-wallet users; (ii) electronic value token purchases, sales, redemptions, and exchanges; (iii) special offer and/or value added activities; (iv) loyalty-related activities; and (v) savings-related activities, all of which can be used for marketing, inventory, and other purposes.

[0105] Oversight and maintenance of the electronic value token transaction computer is performed by the electronic value token transaction computer administrator 151. Although not required, in an alternative embodiment, the electronic value token transaction computer administrator 151 may also function as the datastore administrator 181. The electronic value token transaction computer 150 is configured to generate and maintain an error log of all transactions that were not completed and reasons therefore. In some embodiments, the error log is administered by the electronic value token transaction computer administrator 151.

[0106] The electronic value token transaction computer 150 is also configured to communicate with other entities 190 authorized to access the electronic value token transaction processing system and specifically authorized to access the electronic value token transaction computer 150. These other entities may comprise E-Wallet Aggregator System 1000, third party payment management systems, third party audit systems, issuer affiliated entities, vendor affiliated entities, redeeming merchants or redeeming merchant affiliated entities, financial institutions such as banks, credit card agencies, or credit unions, or any other entity provided access by the electronic value token transaction computer administrator 151 or other entity having authority to grant access.

[0107] In an embodiment, the transaction request from the E-Wallet Aggregator System 1000 may contain one or more of the following pieces of information: (a) authentication information, (b) point of sale terminal identification, (c) amount to be credited or debited, (d) the time of the request, (e) the date of the request, (f) identification of the issuer, (g) identification of the vendor, (i) identification of the product(s) and/or service(s) being purchased, (j) an activation or deactivation request, (k) a wallet management function such as addition of a value token, deletion of a value token, exchange of a value token, changing management or processing rules associated with one or more value tokens, partitioning a wallet into sub-wallets or vice-versa, etc., (l) and any combination thereof. However, the information contained within the request is not limited to the enumerated list but may comprise other items in addition to the items enumerated or in place of the items enumerated above.

[0108] Upon receipt of the electronic wallet transaction request from the E-Wallet Aggregator System 1000, and identification and sorting as such by the sorting unit 198, the electronic value token transaction computer 150 accesses the electronic wallet unit of datastore 180. The electronic value token transaction computer 150 processes the information contained in the datastore 180 and communicates 109, 110 with the individual issuers’ authorization systems 160 to effectuate management of the electronic value tokens and corresponding accounts. The message modification unit may adjust the messages and requests so that multiple units, subcomponents/processors, or third party administrators can recognize and correctly interpret the messages. For example, after the electronic value token transaction computer 150 determines the individual issuers’ authorization systems 160 associated with the request, the message modification unit 154 accesses the database 180 to determine the appropriate transaction messaging formats for each individual issuers’ authorization systems 160 and then formats the subsequent communications to said individual issuers’ authorization systems 160 using the individual issuers’ authorization systems 160 specified preferred transaction format and vocabulary. The electronic value token transaction computer 150 can also provide the appropriate messaging formatting information, e.g., a template, to the E-Wallet Aggregator System 1000 to facilitate that system’s processing of information related to the request. The electronic value token transaction computer’s 150 communication with the individual issuers’ authorization systems 160 may occur simultaneously or independently. The electronic value token transaction computer 150 is connectable to the individual issuers’ authorization systems as via a suitable network, such as the PSTN, the Internet, or an independent dedicated network. The electronic value token transaction computer 150 is configured to send and or receive communication 110 from the issuers’ authorization systems 160 concerning the status of the electronic value tokens.

[0109] The reconciliation unit 155 reconciles the accounts of various issuers, selling vendors, and/or redeeming merchants, to credit and debit appropriate merchants, vendors, the electronic value token transaction processing system
administrator, and issuers with the value of various transactions to reflect which entities received value from which other entities. For example, if a vendor A sells a value token issued by issuer B for a specified amount and receives payment from a user who adds the electronic value token to the user’s electronic wallet, the selling vendor receives a percentage (e.g., retains a percentage) of the purchase amount and/or a predetermined amount, the E-Wallet Aggregator System 1000 and/or the electronic value token system administrator receives a percentage of the purchase amount and/or a predetermined amount for processing the transaction, and the issuer receives the remainder. If a value token issued by issuer Y is redeemed at merchant X to purchase items, then the amount redeemed is debited to the issuer Y and credited to the merchant X, sometimes minus a transaction fee collected by the issuer and/or a transaction or processing fee collected by the electronic value token transaction processing system administrator.

[0110] Authorization unit 157 is utilized when the electronic value token transaction computer 150 is also the authorizing system such that the electronic value token transaction computer 150 authorizes electronic sub-wallet requests rather than transmitting the request to the issuers’ authorization systems 160 for authorization. The authorization unit 157 may perform the same and/or different functions as described for authorization systems 160 and vice-versa.

[0111] The authorization unit 157 will validate the formatting of the wallet (e.g., primary or sub-wallet) transaction request received from the E-Wallet Aggregator System 1000. In other words, the authorization unit 157 will check the data fields in the request to confirm that the fields are populated with data and that the data is in the correct format (e.g., length, alphanumeric format). If the request is improperly formatted, the authorization unit 157 will reject the request, or in some embodiments may retrieve the proper format (e.g., from a format database) and modify the transaction request to comply with the proper format. The authorization unit 157 also performs various validation checks on the transaction request. The authorization unit 157 verifies card-related transaction information based on an analysis of several criteria, such as: 1) determining that the UPC code for the product is present in the database 180 (or other database such as an issuer’s database) for the electronic value token transaction processing system 1100; 2) determining that the value amount of the requested transaction corresponds to the customer’s payment for the subject transaction request, e.g., whether the UPC information identifies the card as a $25.00 card and that the corresponding transaction request includes a $25.00 payment by the customer; 3) determining that the UPC information identifies the card as being a type of card available for processing by the requesting merchant; and 4) determining that the Bank Identification Number (“BIN”) of the card (i.e., the first six digits of the card’s identification number), which identifies the card issuer, corresponds to the UPC information identifying the card issuer.

[0112] The authorization unit 157 may also verify transactions based on other criteria such as transaction velocity (number/amount per unit time). For example, if a card processor is concerned that multiple void transactions are indicative of fraudulent activity, the card processor could ask that the electronic value token transaction processing system 1100 monitor the number of void transactions requested and reject transactions from terminals that exceed a pre-selected amount of void transactions per unit time. Lastly, the authorization unit 157 may be configured to reject transaction requests in the event that the information received by the authorization unit 157 is unintelligible.

[0113] If the request is properly formatted and is validated as described above, the electronic value token transaction computer 150 may transmit details of transactions to the issuers’ authorization systems rather than authorization requests. Also, in some embodiments, the issuer, the authorization system 9 (e.g., authorization unit 157), and the transaction computer are part of the same entity and, in such an embodiment, there would be no issuers’ authorization systems 160 or the issuers’ authorization systems 160 would be under common control with the other units of the electronic value token transaction computer 150 (for example, a commonly owned and operated computing system, that may be centralized (e.g., part of a centralized data center) and/or distributed within a commonly owned or controlled system or network). Furthermore, it should be noted that although units associated with the electronic value token transaction computer 150, e.g., units 152-157, may be distributed within a single data processing system for illustration and conceptual purposes, one or more of units 152-157 could be implemented on separate computers, systems, or servers in a distributed data processing environment.

[0114] An exemplary process utilized by an electronic value token transaction computer 150 for facilitating a purchase using an electronic wallet in accordance with an e-wallet transaction comprising an electronic sub-wallet maintained by a third party electronic value token transaction computer which maintains the sub-wallet as part of a relationship with a primary e-wallet system provider, e.g., the E-Wallet Aggregator System 1000, embodiment is depicted in FIG. 4B. Such an embodiment may be exemplified by the e-wallet transaction processing request being initially received by the E-Wallet Aggregator System 1000 and processed by the electronic value token computer 150. The actions depicted can be performed in the order shown or in a different order, and two or more of the actions can be performed in parallel.

[0115] In block 301, the E-Wallet Aggregator System 1000 receives a request or multiple requests from the point of sale 111. In at least one embodiment the requests may comprise an electronic wallet transaction request, a balance inquiry request, a registration request, an activation request, or a redemption request, a wallet management request, and contains one or more of the following: (a) identity of the terminal, (b) authentication information, (c) the amount of the purchase, (d) the identity of the electronic value token issuer, (e) the identity of the vendor, (f) the identity of the location, (g) the time of the request, (h) the date of the request, (i) information expressly identifying the request as an e-wallet transaction request (e.g., transaction type data); (j) information identifying a primary e-wallet, sub-wallet(s), or a combination thereof; (k) any other transaction and/or authentication data described herein; and (l) any combination thereof. The request at block 301 may comprise other information, requests or functions, for example of the types described herein, in addition to or in place of the above enumerated items. In at least one embodiment, the authentication information is based on an authentication token selected from the group consisting of proxy card and cellular phone.

[0116] Continuing with the process of block 301, the E-Wallet Aggregator System 1000 may determine that a portion of the requested e-wallet transaction may be processed
via the E-Wallet Aggregator System 1000 while another portion of the requested e-wallet transaction implicates a sub-wallet which is maintained by a third party administrator, e.g., electronic value token transaction computer 150. If the electronic wallet transaction request information received by the E-Wallet Aggregator System 1000 indicates that the transaction request will require involve a sub-wallet maintained by a third party administrator’s system to fully effectuate a response to the transaction request, and the rules applicable to the associated primary e-wallet maintained by the E-Wallet Aggregator System 1000 so dictate, the E-Wallet Aggregator System 1000 processes the original request, generates a new request, generates a sub-request, or modifies the original request, to send to the sub-wallet which is maintained in association with the primary electronic wallet, e.g., the primary electronic wallet sends the original request, the new request, the sub-request, or the modified original request to the electronic value token transaction computer 150, which maintains the indicated sub-wallet. In processing the original request, generating the new request, generating the sub-request, or modifying the original request to send to the sub-wallet, the E-Wallet Aggregator System 1000 may (i) apply its own logic to the e-wallet transaction request; (ii) apply rules stored in the primary wallet (e.g., rules formulated by the primary e-wallet provider, the primary e-wallet user, or a combination thereof); (iii) apply rules received with the transaction request from the point of sale 111 (e.g., contemporaneous rules submitted with the request by the user of the primary electronic wallet and/or electronic sub-wallet); (iv) or any combination thereof.

[0117] In block 303, the electronic value token transaction computer 150 receives a request or multiple requests from the E-Wallet Aggregator System 1000. In at least one embodiment the requests may comprise an electronic sub-wallet request, a balance inquiry request, a registration request, an activation request, or a redemption request, a sub-wallet management request, and contains one or more of the following: (a) identity of the terminal, (b) authentication information, (c) the amount of the purchase, (d) the identity of the electronic value token issuer, (e) the identity of the vendor, (f) the identity of the location, (g) the time of the request, (h) the date of the request, (i) information expressly identifying the request as an e-wallet transaction request (e.g., transaction type data); (j) information identifying a primary e-wallet, sub-wallet(s), or a combination thereof; (k) any other transaction and/or authentication data described herein; and (l) any combination thereof. The request at block 303 may comprise other information, requests or functions, for example of the types described herein, in addition to or in place of the above enumerated items. In at least one embodiment, the authentication information is based on an authentication token selected from the group consisting of proxy card and cellular phone. Using the identity of the proxy card and/or cellular phone, embedded transactions may be correctly formatted for communication with the pertinent electronic value token issuers of the subject transaction request.

[0118] Using information received from the E-Wallet Aggregator System 1000 pursuant to the transaction request and from information obtained from datastore 180, in block 304, the electronic value token transaction computer 150 determines whether the request is an electronic sub-wallet request containing valid authentication information and whether the request is for redemption of a value token(s), addition of a value token(s), deletion of a value token(s), or other management of the electronic sub-wallet. The electronic sub-wallet request may comprise a bank identification number (“BIN”) as part of the authentication information. The sorting unit may decode the BIN number or otherwise verify that the request is an electronic sub-wallet request concerning an electronic value token residing in the indicated sub-wallet.

[0119] Using information contained within the electronic wallet transaction received from the E-Wallet Aggregator System 1000, and/or from information obtained from datastore 180, in block 324, the electronic value token transaction computer 150 identifies/determines the sub-wallet(s), and/or locations of said sub-wallet(s) indicated/necessary to effectuate the received e-wallet transaction request. If the authorization information received indicates the requested e-wallet transaction involves a sub-wallet maintained by the electronic value token transaction computer 150, the electronic value token transaction computer 150 may (i) apply its own logic to the request; (ii) apply rules stored in a sub-wallet (e.g., rules established by the electronic value token transaction processing system administrator, the sub-wallet user, or a combination thereof); (iii) apply rules stored in a sub-sub-wallet (e.g., rules established by the electronic value token transaction processing system administrator, the sub-wallet user, or a combination thereof) (iv) apply rules received with the request from the point of sale 111 (e.g., contemporaneous rules submitted with the request by the user of the primary e-wallet/sub-wallet); (v) or any combination thereof.

[0120] For example, an embodiment may include the electronic value token transaction computer 150 determining that the entire request received from the E-Wallet Aggregator System 1000 is related to value tokens contained in a singular sub-wallet. Upon receipt of the request, the electronic value token transaction computer 150 will query its authorization unit 157 (as described more fully herein), its datastore 180, the E-Wallet unit 199, and any other necessary unit to determine whether the sub-wallet comprises value tokens capable of meeting the subject request (e.g., whether the sub-wallet contains value tokens associated with vendors, merchants, and/or issuers related to the requested transaction). Such determination may be performed by comparing electronic value token identifications, user IDs, requested transaction types. The electronic value token transaction computer 150 will subsequently evaluate the manner in which the electronic value tokens available in the sub-wallet corresponding to the request will be applied under the sub-wallet’s rules and/or rules received with the request, and perform or refuse to perform the requested transaction and/or transactions.

[0121] Another embodiment may include the electronic value token transaction computer 150 determining that the entire request received from the E-Wallet Aggregator System 1000 is related to value tokens contained in a sub-sub-wallet. Upon receipt of the request, the electronic value token transaction computer 150 will query its authorization unit 157 (as described more fully herein), its datastore 180, the E-Wallet unit 199, and any other necessary unit to determine whether the sub-sub-wallet comprises value tokens capable of meeting the subject request (e.g., whether the sub-sub-wallet contains value tokens associated with vendors, merchants, and/or issuers related to the requested transaction). Such determination may be performed by comparing electronic value token identifications, user IDs, requested transaction types. The electronic value token transaction computer 150 will subsequently evaluate the manner in which the electronic value
tokens available in the sub-sub-wallet corresponding to the request will be applied under the sub-sub-wallet’s rules and/or rules received with the request, and perform or refuse to perform the requested transaction and/or transactions.

In another example, an embodiment may include the electronic value token transaction computer 150 determining that a portion of the request received from the E-Wallet Aggregator System 1000 is related to electronic value tokens residing in a sub-wallet while another portion of the request is related to electronic value tokens residing in a sub-sub-wallet. Such determination may be made by evaluating the requested transaction type, the electronic value token identification, or any other methods for determining transaction allocation.

The electronic value token transaction computer 150 will evaluate the manner in which the electronic value tokens available in the sub-wallet corresponding to the request will be applied under the sub-wallet’s rules (as those rules may affect payment methods to be employed which are located in the sub-wallet), the electronic value token transaction computer 150 will evaluate the manner in which the electronic value tokens available in any applicable sub-sub-wallet corresponding to the request will be applied under such sub-sub-wallet’s rules and/or rules received with the request, and perform or refuse to perform the requested transaction and/or transactions.

In an exemplary embodiment, at block 324, the electronic value token transaction computer 150 may identify, in response to a received transaction request, one or more value tokens in a sub-wallet and one or more electronic value tokens in a sub-sub-wallet that, when used together, will cover the entirety of the requested e-wallet transaction. Moreover, one of the electronic value tokens located in the sub-wallet or sub-sub-wallet may be an electronic representation of a loyalty card and another electronic value token located in either the same or different location of said loyalty card value token may be an electronic representation of a retailer’s gift card. In such an example, the electronic value token transaction computer 150 can effectuate the coincidental use of the “loyalty card” token and the “retailer’s gift card” token, regardless of the tokens’ locations in the sub-wallet and/or sub-sub-wallet (s) to allow for an enhanced user benefit as opposed to not coincidentally applying the value of the “retailer’s gift card” token and the “loyalty card” token for the transaction, e.g., a 5% increase in the value of the “retailer’s gift card” token or loyalty point bonus applied to the “loyalty card” token for the use of the “retailer’s gift card” token.

An electronic value token may be associated with a closed loop account or open loop account. A closed loop account typically expires after the funds in the account have been depleted, e.g., a gift card account. An open loop account does not typically expire. Rather, there is may be an ongoing obligation for various entities to credit and debit the account, e.g., a branded credit card account or debit card account such as Visa or Mastercard. Closed loop accounts are often associated directly with retailers while open loop accounts are often associated with financial institutions (e.g., Chase or Citi issued Visa). In at least one embodiment, the electronic value tokens comprise closed loop account numbers and open loop account numbers. The closed loop account numbers are associated with retailers able to debit or credit closed loop accounts associated with the closed loop account number. The open loop account numbers are associated with financial institutions able to debit or credit open loop accounts associated with the open loop account numbers. The electronic value token may have an expiration date or specified dates of use that are different from any other value tokens. Furthermore, the electronic value tokens may identify specific merchants, locations, and/or products with which the electronic value tokens may be utilized.

If the request is for electronic value token addition, then in block 306, the electronic sub-wallet is created (if not already created) and the electronic value token is added to the electronic sub-wallet. The following Tables include elements, parameters, and information included in e-wallet transaction communications and used by the electronic value token transaction computer 150 to facilitate and effectuate electronic sub-wallet transactions as part of an coincident primary e-wallet transaction being processed by a primary e-wallet transaction processing system, e.g., the E-Wallet Aggregator System 1000.

Table 8A illustrates request parameters requested to create a sub-wallet in at least one embodiment. Table 8B illustrates response parameters requested to create a sub-wallet in at least one embodiment.

<table>
<thead>
<tr>
<th>TABLE 8A Request Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Element</td>
</tr>
<tr>
<td>primarywalletauth</td>
</tr>
<tr>
<td>accounttype</td>
</tr>
<tr>
<td>loadamt</td>
</tr>
<tr>
<td>loadamtcurrency</td>
</tr>
<tr>
<td>txn-uniqueidentifier</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TABLE 8B Response Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Element</td>
</tr>
<tr>
<td>accountid</td>
</tr>
<tr>
<td>accounttype</td>
</tr>
<tr>
<td>currency</td>
</tr>
<tr>
<td>balance</td>
</tr>
<tr>
<td>uniquerecipient</td>
</tr>
<tr>
<td>code</td>
</tr>
<tr>
<td>description</td>
</tr>
</tbody>
</table>

The electronic value token transaction computer 150 preferably allocates memory for the electronic sub-wallet and value token(s) and associates the account number with the electronic sub-wallet and/or authentication information stored in the electronic wallet unit 199 by storing the pieces of information in a data structure on the datastore 180. Table 9 illustrates the parameters for a gift card value token in at least one embodiment.
value, balance inquiry, or a combination thereof, each of which would be communicated to the issuers’ authorization systems for reconciliation.

[0130] Table 11 illustrates formatting for authentication communication.

<table>
<thead>
<tr>
<th>Element and Description</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>client_ref_id</td>
<td>String</td>
<td>Unique identifier for a request</td>
</tr>
<tr>
<td>signature</td>
<td>String</td>
<td>Denomination Type.</td>
</tr>
<tr>
<td>timestamp</td>
<td>Date</td>
<td>Balance available in the account</td>
</tr>
<tr>
<td>nonce</td>
<td>String</td>
<td>Status of the requested transaction.</td>
</tr>
<tr>
<td>encryption_type</td>
<td>String</td>
<td>Status description of the requested transaction.</td>
</tr>
<tr>
<td>usertoken</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>uuid</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>user_ip</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>channel</td>
<td>String</td>
<td></td>
</tr>
</tbody>
</table>

[0131] Each request is authenticated using the signature, a user is authenticated with username/password or openid, the session is validated using the user token. A client may send client_ref_id, timestamp, nonce, encryption_type, channel, user_ip, signature, optionally usertoken with each request to be able to validate each message.

[0132] Table 12 illustrates the parameters used to retrieve a user’s wallet.

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accountid</td>
<td>String</td>
<td>Unique identifier for an account</td>
</tr>
<tr>
<td>accounttype</td>
<td>String</td>
<td>Type of the account.</td>
</tr>
<tr>
<td>balance</td>
<td>Decimal</td>
<td>Balance available in the account</td>
</tr>
<tr>
<td>code</td>
<td>String</td>
<td>Status of the requested transaction.</td>
</tr>
<tr>
<td>description</td>
<td>String</td>
<td>Status description of the requested transaction.</td>
</tr>
</tbody>
</table>

[0133] Table 13A illustrates the request parameters used to redeem value from a token in the sub-wallet.

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Type</th>
<th>Suggested Length</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accountid</td>
<td>String</td>
<td>100</td>
<td>Unique identifier for the account</td>
</tr>
<tr>
<td>redact</td>
<td>Decimal</td>
<td>N/A</td>
<td>Amount to redeem from the account</td>
</tr>
<tr>
<td>tnx-uniqueidentifier</td>
<td>String</td>
<td>3</td>
<td>Amount Type.</td>
</tr>
<tr>
<td>tnx-istimeoutreversal</td>
<td>Null</td>
<td>12</td>
<td>Unique transaction id.</td>
</tr>
</tbody>
</table>

[0134] Table 13B illustrates the response parameters used to redeem value from a token in the sub-wallet.
TABLE 13B

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Type</th>
<th>Suggested Length</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accountid</td>
<td>string</td>
<td>100</td>
<td>Unique identifier for a account</td>
</tr>
<tr>
<td>accounttype</td>
<td>string</td>
<td>50</td>
<td>Type of the account</td>
</tr>
<tr>
<td>currency</td>
<td>string</td>
<td>3</td>
<td>Denomination Type.</td>
</tr>
<tr>
<td>balance</td>
<td>decimal</td>
<td>N/A</td>
<td>Balance available in the account</td>
</tr>
<tr>
<td>uniquifier</td>
<td>string</td>
<td>12</td>
<td>unique identifier for the account</td>
</tr>
<tr>
<td>code</td>
<td>string</td>
<td>7</td>
<td>The Status of the requested transaction</td>
</tr>
<tr>
<td>description</td>
<td>string</td>
<td>500</td>
<td>The Status description of the requested transaction</td>
</tr>
</tbody>
</table>

[0135] Table 14A illustrates the request parameters used to load a value token into the sub-wallet.

TABLE 14A

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Type</th>
<th>Suggested Length</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accountid</td>
<td>string</td>
<td>100</td>
<td>Unique identifier for a account</td>
</tr>
<tr>
<td>amount</td>
<td>decimal</td>
<td>N/A</td>
<td>Amount to load on the account</td>
</tr>
<tr>
<td>amount_accountcurrency</td>
<td>string</td>
<td>3</td>
<td>0, if it is not a reversal of any transaction type 1, if it is a reversal transaction</td>
</tr>
<tr>
<td>tax-terminationreversal</td>
<td>bool</td>
<td>N/A</td>
<td>Amount Type.</td>
</tr>
<tr>
<td>tax-uniqunidentier</td>
<td>string</td>
<td>12</td>
<td>Unique transaction id.</td>
</tr>
</tbody>
</table>

[0136] Table 14B illustrates the response parameters used to load a value token into the sub-wallet.

TABLE 14B

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Type</th>
<th>Suggested Length</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>accountid</td>
<td>string</td>
<td>100</td>
<td>Unique identifier for a account</td>
</tr>
<tr>
<td>accounttype</td>
<td>string</td>
<td>50</td>
<td>Type of the account</td>
</tr>
<tr>
<td>balance</td>
<td>decimal</td>
<td>N/A</td>
<td>Balance available in the account</td>
</tr>
<tr>
<td>uniquifier</td>
<td>string</td>
<td>12</td>
<td>Unique identifier for the transaction</td>
</tr>
<tr>
<td>code</td>
<td>string</td>
<td>7</td>
<td>The Status of the requested transaction</td>
</tr>
<tr>
<td>description</td>
<td>string</td>
<td>500</td>
<td>The Status description of the requested transaction</td>
</tr>
<tr>
<td>currency</td>
<td>string</td>
<td>3</td>
<td>Denomination Type.</td>
</tr>
</tbody>
</table>

[0137] If the request is for electronic value token redemption, then in block 308, the electronic value token transaction computer 150 accesses the electronic sub-wallet previously associated with the authentication information and examines the rules associated with the electronic sub-wallet. In at least one embodiment, examining the rules comprises examining priorities of value tokens configurable by the user. For example, the user may prefer to use any closed loop value tokens corresponding to the retailer originating the purchase request. If none is found or if the token will not cover the purchase, then the user may prefer to use an open loop value token for the remainder. As a result of these preferences, the closed loop value tokens may all have higher priority than the open loop value tokens. Among the open loop value tokens, one may have priority over another. For example, the user prefers to pay for any remainder with a credit card rather than a debit card. In at least one embodiment, the user may configure these rules via the Internet or mobile application and save the priorities as default preferences. In an alternative embodiment, the user selects the electronic value tokens to apply to the electronic wallet request in at the POS device, for example at a vendor or retailer location such as a check-out lane, customer service counter, or kiosk. As such, selecting the electronic value tokens comprises selecting value tokens with the highest priority that, when used together, will cover the purchase amount. As can be seen in the example, one purchase transaction has been split into two redemptions without compromising efficiency of the purchase. Similarly, one or more electronic wallet transactions can be split into two or more transactions without compromising efficiency.

[0138] In at least one embodiment, examining the rules comprises examining percentages of the electronic sub-wallet request to which different electronic value tokens should be applied and wherein applying the electronic value tokens comprises applying the electronic value tokens to the electronic sub-wallet request in accordance to the percentages. In block 310, the electronic value token transaction computer 150 then selects, based on the rules, value tokens in the electronic sub-wallet that, when used together, will cover the electronic sub-wallet request. For example, the user may configure the rules such that each purchase is split evenly between two credit cards. As such, selecting the electronic value tokens comprises selecting two open loop tokens between which to split the purchase amount. Similar to the above example, efficiency is preserved because where a single authorization token (e.g., only the proxy card or a mobile device) was used at the point of sale, not the two credit cards corresponding to the electronic value tokens. Other rules can be implemented, and the rules can be used in various combinations and permutations with each other. The electronic value token computer 150 can also implement “if-then” rules based on the information transmitted in the electronic sub-wallet request. For example, a purchase at a gas station can result in a gas credit card value token selection, and the like. In such an embodiment, the electronic value token computer 150 may query the rule(s) 802, 817, 818, and 819 of the subject e-wallet 10 and/or sub-wallets 807 (e.g., for credit card-type electronic value tokens), 808 (e.g., for debit card-type electronic value tokens), and 809 (e.g., for stored value-type electronic value tokens) and determine, based on transaction request information which includes a transaction type, e.g., purchase at a gas station, that rule(s) established for the subject e-wallet 10 and/or sub-wallets 807, 808, and 809 require that the transaction type request be first satisfied with a first electronic value token type, e.g. a gas card-related electronic value token 829, and upon the occasion that the subject e-wallet 10 and/or sub-wallet(s) 807, 808, and 809 do not comprise a sufficient amount of the first value token type to satisfy the entire transaction request, the electronic value token computer 150 may satisfy the remainder of the transaction request with a second electronic value token type, e.g., a debit card-related electronic value token 828.

[0139] The electronic value token transaction computer 150 also applies the electronic value tokens to the electronic sub-wallet request. In applying the electronic value tokens to
the request, the electronic value token transaction computer 150 can generate and send debit and credit messages to be performed on the accounts administered by the retailers and financial institutions using the appropriate account numbers, or the electronic value token transaction computer 150 can credit or debit the accounts directly if the electronic value token transaction computer has such administrative authority.

In at least one embodiment, the electronic value token transaction computer 150 modifies the request and forwards the modified request to the appropriate one of the issuers’ authorization systems 160, which receives the modified request and acts upon same, for example authorizing and/or processing the request to redeem the electronic value token and updating a datastore accordingly. The authorization system 160 is not at the same location from where the electronic sub-wallet request was received in at least one embodiment. For example, if the electronic sub-wallet request was received from a retail store, the authorization system may be owned and operated by the retailer, but will not be at the retail store. Rather, the authorization system may be located at a data center for example. As such, neither the retail store nor the retailer in general need be aware of some or all of the contents of the sub-wallet. In at least one embodiment, the retail store is unaware of even the presence of the electronic wallet, as it merely recognizes that some transaction authorizing action has been communicated to its point of sale (e.g., swipe of a proxy card, digital personal assistant interaction with point of sale device, entry of a PIN at a keypad at point of sale, or other authorizing activity). The issuers’ authorization systems 160 sends a response message back to the electronic value token transaction computer 150. In an alternative embodiment where the electronic value token transaction computer 150 performs the functions of the issuers’ authorization systems 160, the method may proceed directly from block 306 or 310 to block 314.

The electronic value token transaction computer 150 receives the confirmation message from the appropriate one of the issuers’ authorization systems 160 in block 312. At block 314, the electronic value token transaction computer 150 updates electronic sub-wallet in the electronic wallet unit 199 and datastore 180 to reflect that the electronic sub-wallet is activated and to reflect any debit, credit, addition, or deletion to/to of the electronic value token(s). FIGS. 6A-D illustrate a series of user interface screens and prompts in at least one embodiment. For example, the user may see the illustrated prompts when managing the user’s electronic wallet via a computer connected to the Internet, and/or kiosk 189.

A transaction log 170 may be updated by the electronic value token transaction computer 150 in block 316 to record the details about the transaction. The details recorded in the transaction log may include (a) the time and date of the transaction, (b) whether the electronic sub-wallet was activated, (c) the reason electronic sub-wallet was not activated if the request was denied, (d) the credit, debit, addition, or deletion to/to of the electronic value token(s), (e) a change in rules associated with the electronic value token(s), (f) the identity of the vendor, (g) the identity of the issuer, (h) the location of the vendor, (i) the identity of the terminal adding the electronic value token, (j) the identity of the entity granting the electronic value token, (k) identity of the E-Wallet Aggregator System 1000 from which the sub-wallet request was received, (l) communications between the electronic value token transaction computer 150 and the E-Wallet Aggregator System 1000, and (m) any combination thereof. The transaction log may include other information in addition to or in place of the items enumerated above.

The electronic value token transaction computer 150, in block 319, then forwards the sub-wallet transaction results and associated information in the form of a confirmation message to the E-Wallet Aggregator System 1000. The electronic value token transaction computer 150, prior to forwarding the confirmation message to the E-Wallet Aggregator System 1000, may modify the confirmation message as necessary to include information that may be printed on a receipt for the customer and/or presented on a display to the store clerk operating the point of sale device 111. At block 320, the electronic value token transaction computer 150 reconciles the accounts of the various vendors, merchants, issuers, the electronic value token transaction processing system administrator, and other entities involved with issuing, selling, and marketing the electronic value tokens involved in the sub-wallet request to debit and credit appropriate accounts and, in some embodiments, initiates funds transfers between appropriate bank accounts belonging to the various entities. Alternatively, reconciliation of accounts may be performed periodically (e.g., daily, weekly, monthly, etc.) rather than after each transaction. In such an embodiment, the information from the transaction log 170 may be utilized to reconcile the various entities involved with the sale or redemption of various value tokens thus requiring fewer funds transfers to be initiated. In various embodiments, the sequence of events depicted in may be varied, and thus may be carried out in any desired order, sequentially or simultaneously.

FIG. 2C illustrates an embodiment of the electronic value token transaction processing system 1200 wherein the electronic value token transaction computer 150 communicates with both the point of sale 111 and the E-Wallet Aggregator System 1000. Thus, the electronic value token transaction computer 150 may function as both a primary electronic wallet transaction processor and an electronic sub-wallet transaction processor as described in detail above with respect to FIGS. 2A and 2B.

Electronic wallet management may be carried out via a variety of user interfaces such as smart phone application, personal computer applications, website based applications, point of sale terminals, dedicated terminals at stores or other locations, such as kiosks.

In at least one embodiment, a user can perform numerous functions via the World Wide Web from a computer or mobile phone such as electronic wallet management functions (e.g., balance inquiry, managing loyalty and/or other bonus-type programs); exchange of value tokens such as (i) replace value token in e-wallet with value token not currently present in e-wallet, (ii) exchange between different wallets (such as placing an electronic value token from a sub-wallet configured to allow redemption activities into a sub-wallet configured for savings activities with limited redemption possibilities), and (iii) exchange with another user; purchase electronic value tokens to be placed in e-wallet; opt in or opt out of receiving targeted promotional offers and materials; and payment functions such as splitting the tender of payment between available electronic value tokens in the e-wallet.

Regarding possible exchange possibilities, a user may exchange a value token associated with a retailer that the user is unlikely to frequent with a value token associated with
a retailer that the user is likely to frequent. Similarly, users may swap, sell, gift, or re-gift value tokens or bundles of value tokens to each other.

[0148] Via e-wallet management functionalities, a user can: (i) determine the amount of value associated with each value token such as reward points, dollar amounts, etc.; (ii) check expiration dates on value tokens, purchase value tokens for others as gifts, and receive notifications from specific retailers; (iii) create, register, and delete their electronic wallet or specific value tokens in their electronic wallet; (iv) request that the e-wallet provide or make available a physical representation of an electronic value token in the user’s electronic wallet (e.g., in an embodiment, a print-on-demand service is provided to allow the user to print out a chit, coupon, check, or other physical representation of an electronic value token at a kiosk 189 or other accessible printer); and (v) allow the e-wallet to send the user specific value tokens, e.g., by using a GPS service in the user’s mobile phone, or via integration with the user’s SMS services.

[0149] In at least one embodiment, the user’s electronic wallet is integrated with the user’s social network services such as Facebook and Twitter. Accordingly, the user can perform management functions via social network platforms or receive value tokens via social network platforms. Full or partial information about the user’s electronic wallet can be made available to the user’s social network contacts as well.

[0150] As depicted in FIG. 6A, a user may access the e-wallet system, e.g., electronic value token transaction processing system 100 or E-Wallet Aggregator System 1000, via such systems’ interactive display pages/screens (wherein the interactive display pages/screens are accessed via a user’s computer, a user’s personal digital assistant or smart phone, point of sale terminal, kiosk 189, or other device. As FIG. 6A depicts, a user may create and/or register an e-wallet or sub-wallet by providing certain requested information and agreeing to certain terms and conditions.

[0151] As depicted in FIG. 6B, a user may manage their e-wallet by inputting certain card specific information into the e-wallet systems interactive display page/screen. In an embodiment, a user may register a gift card by inputting the gift card’s brand, card number, expiration date, CVV2 code, and card nickname and selecting the “Add Gift Card to MyWallet” button on the screen.

[0152] As shown in FIG. 6C, a user is provided many options for managing an e-wallet and its contents. For example, as shown, a user may review the specific details associated with the electronic value tokens (depicted as gift cards in FIG. 6C) present in the e-wallet and/or sub-wallet. Moreover, the user could request that the electronic value tokens be presented as: (i) “Last added” (as shown in FIG. 6C); (ii) as contained in various “Sub-wallets” (sub-wallets could be categorized or named, such as “Dining,” “Home Improvement,” “Debit,” “Credit,” “Loyalty,” etc.); (iii) as in highest to lowest remaining value; or (iv) as ranked in regards to preference for use.

[0153] As is also shown in FIG. 6C, the user has the ability to “Add a Gift Card,” “Add Value,” “Redeem Card,” and “Sell Card.”

[0154] The “Add a Gift Card” functionality enables a user to place an electronic value token into the e-wallet. The “Add a Gift Card” selection provides at least two different methods for the user to add an electronic value token to the e-wallet. First, an electronic value token representing a physical card possessed by the user may be added to the e-wallet. As described in reference to FIG. 6B, by selecting “Add a Gift Card” and the subsequent manner of such addition, the screen display of FIG. 6B may be presented to the user. Accordingly, the user may add a “gift card” to the e-wallet by inputting the gift card’s brand, card number, expiration date, CVV2 code, and card nickname and selecting the “Add Gift Card to MyWallet” button on the screen. Alternatively, the user may have access to a card reader (e.g., mag stripe reader and/or barcode reader), such as a device attached to a user’s computer, personal digital assistant or smart phone, and utilize such device to read information from a physical card, in conjunction with the user’s computer, personal digital assistant or smart phone, to enter the card’s information into the e-wallet system for conversion into an electronic value token. Second, an electronic value token representing a physical card not already possessed by the user may be added to the e-wallet. In such an embodiment, when the user selects this option, the user may be presented a display screen informing the user of all the different types and value amounts of electronic value tokens that are available for purchase. The availability of electronic value tokens for purchase can be ascribed to the e-wallet system’s, e.g., the electronic value token transaction processing system’s 100 relationships with card issuers, merchants, vendors, and/or processors (e.g., a GiftCard Mall web-based application as provided by BlackHawk Network, which provides users with the ability to select from a variety of different types of gift cards (and varying denominations) and have the cards selected delivered to the user (or to a user’s identified recipient) in either tangible form (via mail or other courier) or delivered electronically (e.g., via the electronic value token transaction processing system)) or may be ascribed to the e-wallet system’s, e.g., the electronic value token transaction processing system’s 100 ability to access an electronic value token exchange program 2000, as will be described more fully below.

[0155] The “Add Value” functionality enables a user to select an electronic value token and increase the value of said token. Such “reloading,” “topping off,” or “recharging” of an electronic value token may be performed as is described in International Application Serial No. PCT/US11/40055, which is incorporated by reference in its entirety. For example, when the e-wallet user desires to reload/recharge/ top off a telecom-related electronic value token residing in the e-wallet, the user can select “Add Value” on the display screen which will prompt the system to transmit the reload/recharge/top-up request to the electronic value token computer 150.

[0156] In a first embodiment of the reload/recharge/top-up scenario, the electronic value token computer 150 approves the request if the telecom-related electronic value token is activated and associated with a phone number. The electronic value token computer 150 determines the telecom account associated with the phone number and adds the requested reload/recharge/top-up amount to the account. The electronic value token computer 150 sends a response to the request (e.g., indicating that the reload/recharge/top-up amount has been added to the associated account). The electronic value token computer 150 transmits a reload/recharge/top-up transaction request to the phone number’s associated telecom carrier. Upon receiving approval of the reload/recharge/top-up transaction request from the telecom carrier, the electronic value token computer 150 modifies the value of the telecom-related electronic value token to reflect the reload/recharge/top-up amount. The electronic value token computer 150 will cause the display accessed by the user to reflect the modifi-
cation of the electronic value token's value, or if the reload/recharge/top-up transaction request was not approved, the electronic value token computer 150 will cause the display to inform the user as to that result. While the “Add Value” functionality has been described in relation to telecom-related electronic value tokens, the “Add Value” functionality is equally applicable and functionable for reloading/recharging/topping-up electronic value tokens associated with debit cards, prepaid services cards, gift cards, etc.

[0157] The “Redeem Card” functionality enables a user to select an electronic value token and use that token to satisfy a purchase, or other transaction. In the “Redeem Card” scenario, if the whole value of the electronic value token is not used in the redemption transaction, the system will modify/reduce the remaining value of the token and cause the display to inform the user of the “new” reduced value of the token, while also informing all interested parties as to the redemption transaction and recording and adjusting any pertinent logs accordingly. Alternatively, when an e-wallet is used in a point-of-sale-type of transaction context, rather than the above described e-wallet management context, the “Redeem Card” functionality may be automatically invoked via transactional information conveyed from a point of sale and thus, the can be based on predetermined rules.

[0158] The “Sell Card” functionality enables a user to select an electronic value token to monetize via offering the card for sale to (i) another e-wallet user, (ii) the e-wallet (or sub-wallet) system provider, or (iii) an electronic value token exchange program 2000 (as more fully described herein). In the “Sell Card” scenario, a user will inform the e-wallet system as to the electronic value token it desires to sell, select the forum for such sale from a list of available forums, instruct the system as to how the proceeds from the sale should be remitted to the e-wallet (e.g., in the form of an e-wallet system branded electronic value token, value added to other selected electronic value token(s), and/or delivery of a hard/tangible form of receipt that the user may present for tender, (e.g., chit, coupon, check, or combination thereof)) and, if applicable, instruct the system as to a threshold value for the sale of the electronic value token that the user is not willing to go below e.g., set a reserve price. The system will execute the desired sale transaction, and cause the display to inform the user of the results of the sale of the electronic value token, while also informing all interested parties as to the sale transaction and recording and adjusting any pertinent logs accordingly.

[0159] As is further shown in FIG. 6C, a user may choose to manage “My Rewards” which would bring up a screen showing the user options available due to the user’s receipt of loyalty or other types of rewards for using the e-wallet and/or electronic value tokens. The user may also select “Special Offers” which would bring up a screen showing the user any promotional-type offerings available to the user via the e-wallet. The user may also select “Exchange” which would bring up a screen showing the user options available for electronic value token exchange via the e-wallet.

[0160] In similar fashion as described in reference to the above available e-wallet management abilities and functionalities, a kiosk 189 may be coupled to the electronic value token transaction computer 150 in at least one embodiment and function as a user’s interface with an e-wallet transaction system to allow the user to access e-wallet management functionalities.

[0161] The kiosk 189 may be placed in a high-traffic area such as a shopping mall, and may perform any electronic wallet management function. For example, users may create, delete, and alter their electronic wallets or sub-wallets. Users may also check the balances of electronic value tokens residing in the e-wallet, add, remove, reload, recharge, print, and exchange value tokens in their electronic wallets or sub-wallets. The kiosk 189 may minor transactions available through an electronic wallet management website in at least one embodiment, or the functionality of an e-wallet enabled personal digital assistant and/or smart phone. Users may employ a print-on-demand function with their value tokens if a particular retailer does not accept electronic wallet transactions. For example, a user may select a value token to print, and a printer connected to the kiosk 189 will print a physical representation of the selected value token, for example a receipt having a scannable bar code linked to the electronic value token. The physical representation may be a gift card with a magnetic stripe, a paper receipt or coupon with a barcode or matrix code (e.g., QR code), and the like. In an embodiment, kiosk 189 may print a physical card, for example for an additional printing fee. The user may also provision and/or partition (e.g., create sub-wallets) an electronic wallet using the kiosk 189. For example, after authentication of the user and identification of the electronic wallet associated with the user, the user may insert the user’s physical stored value cards into the kiosk 189, for example a machine operated kiosk similar to an automatic teller machine or alternatively a manned kiosk having appropriate card readers and the like. The kiosk 189 may convert the physical stored value cards into electronic value tokens in the user’s electronic wallet. Afterwards, the physical stored value card may be retained or destroyed by the kiosk 189 or returned to the user. In one embodiment, the physical stored value card is not usable by the user after the conversion. In another embodiment, the user may have the option to use the electronic value token or the physical stored value card. In other words, both will be “active” and available for use. The user may also purchase value tokens to provision a wallet directly from the kiosk 189.

[0162] In at least one embodiment, a user is associated with multiple electronic wallets. In order to identify one wallet out of multiple wallets associated with a user, each of the multiple wallets is associated with a unique wallet identification (“ID”). A database or lookup table, for example, may be used to access wallet identifications. In at least one embodiment, the wallet ID is customizable by the user.

[0163] As referenced with respect to both the primary e-wallet and sub-wallet embodiments described above, the disclosed e-wallet and sub-wallet methods and systems provide users with the ability to add value to electronic value tokens residing in an e-wallet and/or sub-wallet. In an embodiment, similar value-added capabilities and functionalities of the instantly described electronic value token transaction processing system 100 are detailed and described in International Application Serial No. PCT/US11/20570, which is incorporated by reference in its entirety, such similar value-added capabilities and functionalities may be adapted from the context described in International Application Serial No. PCT/US11/20570 to be applied in the instant e-wallet/electronic value token context.

[0164] Customers may be offered incentives to purchase and/or redeem a value token(s) via value differentiation between the purchase and redemption values of said value token(s).
[0165] In an embodiment, a value token with a face value of $25 may be purchased by a customer for $25, but the electronic value token may be added to the electronic wallet in the amount of $30—the $25 purchase price plus an additional $5 added as an incentive to purchase the electronic value token. Alternatively, rather than adding cash value to the electronic value token, the electronic value token may be encoded with a redemption coupon code for a specific product or service. For example, a $15 value token to a coffee house may have an electronic redemption coupon code for a free shot of the customer’s syrup of choice to be added to any coffee purchased at the coffee house. The free shot of syrup may be redeemed in connection with redeeming a portion, or all, of the electronic value token amount or the free shot of syrup may be redeemed separately.

[0166] In another embodiment, a value token vendor is able to offer customers incentives to redeem a value token by adding value in addition to the value of the electronic value token at the time the customer redeems the electronic value token. For example, a merchant could run a promotion in which it offers customers an additional $5 credit when the customer uses a value token for a purchase at one of the merchant’s retail stores during a specified period of time.

[0167] As noted above, the electronic value token transaction computer 150 communicates with the datastore 180 and/or the issuers’ authorization systems 160. The electronic value token transaction computer 150 may compare one or more of the card identification, the terminal identification, vendor identification, and the time and date of the activation request contained within the transaction request to data contained in the datastore 180 to determine whether the electronic value token to be added/redeemed is eligible for a value added award. For example, a vendor may run a promotion to encourage customers to purchase a value token, wherein value tokens purchased within a specified period of time may be purchased for a price less than the value designated by the electronic value token description or metadata. Thus, a customer could purchase a $25 value token for some amount less than $25, e.g., $20. In either of the above examples, the value differentiators, e.g., bonus added to a redemption value of a value token and reduction of purchase price for a designated value of a value token, may be applicable to bundled value token packages and the value differentiators distributed amongst and/or across the electronic value tokens, either equally or disproportionately. Similarly, retailers can collaborate for cross-promotions by honoring other retailer’s value tokens in full, in part, or for specific products or promotions. By selecting to use an electronic wallet at the point of sale, the user may even receive the benefits of promotions of which the user was unaware. Furthermore, by configuring the rules, the user can be assured of getting the best promotions at various retailers without comparison shopping. As such, retailers can implement and change promotions at a rapid pace and cross-promote with other retailers on a daily or even hourly basis without spending advertising resources to make sure that the user is aware of the promotion and without requiring the user to perform the legwork involved in traditional redemption models such as cutting coupons, inputting various promotional codes, and the like. Moreover, retailers can finely tune promotions to various market segments in order to strengthen relationships by providing for the segment’s particular needs.

[0168] The message modification unit 154 modifies the messages 106 and 110 to add value added information into the messages. For example, if it is determined by the value added determination unit 153 that a value token to be added is eligible for a value added bonus, the message 106 received from the point of sale device 111 is modified by the message modification unit 154 to include the determined value added bonus and is then forwarded as message 109 to the appropriate issuers’ authorization system 160 for authorizing the request for the amount specified in the activation request plus the value added bonus. As another example, if it is determined that the electronic value token is eligible to be purchased at a discount, the message 106 received from the point of sale device 111 is modified by the message modification unit 154 (and forwarded as message 109) to indicate to the appropriate issuers’ authorization system 160 that the electronic value token will be added to the electronic wallet for one amount, but that the customer will be charged a lesser amount reflecting the discount associated with the electronic value token.

[0169] In another embodiment, the message modification unit 154 also modifies messages 110 from the issuers’ authorization systems 160 intended for the point of sale device 111 to include any information regarding value added to the electronic value token that may be printed on the receipt generated for the customer as well as information that may be presented to a cashier on a terminal 101 or 104 that the cashier may communicate to the customer, and such modified messages are forwarded as messages 107 to the point of sale device 111.

[0170] As referenced with respect to both the primary e-wallet and sub-wallet embodiments described above, the disclosed e-wallet and sub-wallet methods and systems provide users with the ability to exchange an electronic value token residing in the user’s e-wallet or sub-wallet with/for an electronic value token not presently residing in the user’s e-wallet or sub-wallet, but made available via the e-wallet’s or sub-wallet’s transaction system(s).

[0171] The electronic value token computer’s 150 owner and/or operator may earn revenue via arbitrage-type activities. That is, electronic value token computer’s 150 owner and/or operator may keep the difference in going rates between two electronic value tokens, e.g., a first electronic value token being traded/exchanged and a second electronic value token being desired/obtained. In at least one embodiment, the electronic value token transaction computer 150 may charge the user transaction fee for the exchange instead. The transaction fee may be flat or based on the size of the exchange.

[0172] The electronic value token transaction computer 150 may also charge either or both of the issuers and/or retailers associated with the exchange a flat transaction fee or one based on the amount of the exchange. These fees may be minimal but generated in high volume. All parties may benefit because the user is receiving value tokens the user will use in exchange for value tokens the user would not use. Moreover, one issuer and/or retailer is eliminating the debt or inventory liability associated with the exchanged value token, thus freeing up capital for other uses. Also, the other issuer and/or retailer may be gaining a customer, retaining a loyal customer, or increasing revenue if the customer spends more than the amount of the electronic value token.

[0173] As referenced with respect to both the primary e-wallet and sub-wallet embodiments described above, the disclosed e-wallet and sub-wallet methods and systems provide users with the ability to exchange electronic value tokens located in e-wallets and/or sub-wallets for other electronic value tokens not located in said e-wallets or sub-wallets. Such
value token exchange may be initiated (1) by an e-wallet user (i) at a point of sale, (ii) at a kiosk, (iii) via a user’s personal digital assistant or smart phone, (iv) via web access to the user’s e-wallet, (v) or any other method of accessing the user’s e-wallet; or (2) by an application of an e-wallet rule by an e-wallet processing system, wherein the rule is established by (i) the e-wallet user, (ii) the e-wallet provider, (iii) or a combination thereof.

[0174] In at least one embodiment, exchanging a first value token associated with a first retailer located in the e-wallet for a second value token associated with a second retailer not located in the e-wallet requires an exchange rate be applied. This exchange rate may be applied against the value of the second value token being sought in the exchange, thus reducing the face value of the second value token in relation to the value of the first value token for which it is exchanged or the exchange rate may be applied against some other valued asset located in the e-wallet (as prescribed by any pertinent rules or directives). The exchange rate may be realized by the e-wallet processing system and/or shared with designated vendors, merchants, and issuers.

[0175] The exchange rate may be established via an ongoing valuation program operated by the e-wallet processing system or affiliated entity comprising the tracking of the use of and interest in electronic value tokens, gift cards (or other similar instruments), the acquisition of such electronic value tokens, gift cards (or other similar instruments) from other e-wallet users or other sources, and the establishment of dynamically varying values for all such electronic value tokens and gift card-type instruments available to the e-wallet processing system for incorporation into an electronic value token exchange program.

[0176] The above-described electronic value token exchange program may be exemplified by the following discussion. An e-wallet user can approach an e-wallet associated kiosk 189 at Retailer A’s establishment. The e-wallet user interfaces with the kiosk 189 and provides the kiosk with e-wallet identifying information (e.g., as described in Table 1 herein “accounted”). The provision of identifying information may be made via manual input by the kiosk’s user or may be made automatically via communication between the e-wallet user’s personal digital assistant (or proxy card 200) and the kiosk 189. The e-wallet user may then use the kiosk 189 to access the e-wallet’s electronic value token exchange program and the kiosk 189 may be further utilized to facilitate and complete any requested electronic value token exchange. In an embodiment, the e-wallet user may wish to exchange an electronic value token issued and/or accepted by Retailer B contained in the user’s e-wallet (or a sub-wallet thereof) for an electronic value token issued and/or accepted by Retailer A. The e-wallet user interfacing with kiosk 189 can result in the e-wallet user being presented with a screen display such as is depicted in FIG. 6C. Besides providing the e-wallet user with the ability to review the contents of the e-wallet, the display allows the e-wallet user to select an “Exchange” tab from the available functionalities. The “Exchange” tab will then present the e-wallet user with the options available for electronic value token exchange. As depicted in FIG. 6D, such options can comprise: (1) view a selection of electronic value token(s) available for acquisition; (2) view the selection of electronic value token(s) presently residing in e-wallet; (3) view the various exchange rates for the identified electronic value token(s) for acquisition as calculated in view of the electronic value tokens selected for removal (exchange) from the e-wallet (exchange rates may vary based on types/retailers of electronic value tokens selected for exchange); (4) view options for satisfying exchange rate (e.g., (i) reduction in value of electronic value token selected for acquisition to meet the exchange rate or (ii) application of the amount of the exchange rate to some other asset residing in the e-wallet such as a credit card value token or a debit card value token); (5) view a selection of options for delivery of the electronic value token selected for acquisition such as (i) delivery into the e-wallet (or sub-wallet), (ii) delivery via email, SMS, social media, or other electronic method to a personal digital assistant or computer, (iii) print out of a tangible version of the electronic value token (e.g., via print on receipt-type capability as described in U.S. patent application Ser. No. 12/719, 741 which is incorporated by reference in its entirety) at the kiosk or other user-selected print device. The user may make its desired selections in response to the information provided in each of the above-describe screens, as each of the described screen view options include functionality allowing for selection of the displayed options. In this example, the user selects that the Retailer B $25.00 electronic value token residing in the e-wallet is to be exchanged for a Retailer A electronic value token. As a result, the electronic value token exchange program prompts the kiosk 189 to display that the requested exchange will result in the user acquiring a Retailer A electronic value token in the amount of $24.75 if the user selects that the exchange rate be applied against the value of the Retailer A electronic value token (the exchange rate will vary from transaction to transaction, the exchange rate could be any value, e.g., $0.001 to $10.00, or any values below, within, or above this range). The user makes such selection. The electronic value token exchange program prompts the kiosk 189 to display the available delivery methods and the user selects delivery into the e-wallet. The electronic value token exchange program prompts the kiosk 189 to display another screen similar to FIG. 6C, but indicating that the e-wallet now contains a Retailer A electronic value token in the amount of $24.75.

[0177] As a result of the above “Exchange” transaction, the e-wallet user received its desired Retailer A electronic value token and the electronic value token exchange program received a Retailer B $25.00 electronic value token. As part of the above-described transaction, the electronic value token exchange program contacted the electronic value token issuing entity of Retailer A electronic value tokens (e.g., in an embodiment issuing entity of Retailer A electronic value tokens could be the electronic value token exchange program 2000) and requested a Retailer A $24.75 electronic value token be provided to meet the e-wallet user’s request; alternatively, the electronic value token exchange program modified a Retailer A electronic value token it already controlled, e.g., modified a Retailer A $25.00 electronic value token to only be worth $24.75 and informed the issuing entity of Retailer A electronic value tokens that it could reduce its liability associated with said card by $0.25. Further, the electronic value token exchange program 2000 will contact the Retailer B electronic value token issuer and provide the issuer with the appropriate Retailer B $25.00 electronic value token identification so that the issuer can remove that Retailer B $25.00 electronic value token from its list of liabilities. Thus, as an end result, the electronic value token exchange program’s activities have resulted in a $0.25 value (the exchange rate, i.e., difference in value of electronic value token acquired by requesting user and electronic value token sur-
rendered by requesting user as part of the exchange) that may be allocated to interested parties per established contractual obligations.

[0178] In an alternative scenario, if the e-wallet requesting user selects the exchange rate to be satisfied by another asset residing in the e-wallet or sub-wallet, such as a credit card electronic value token or a debit card electronic value token, the e-wallet user would be provided with a $25.00 Retailer A electronic value token matching the $25.00 Retailer A electronic value token surrendered in the transaction and the exchange rate of $0.25 would be realized from charging against the credit card electronic value token or debiting against the debit card electronic value token. Such actions would be transmitted with communications between the electronic value token exchange program and the credit card electronic value token or the debit card electronic value token requesting that the $0.25 exchange rate value be paid to the electronic value token exchange program. Thus, again as an end result, the electronic value token exchange program’s activities would have resulted in a $0.25 value (the exchange rate) that may be allocated to interested parties per established contractual obligations.

[0179] The above-described electronic value token exchange transaction (or any described variation thereof), although described at the kiosk 189 context, could also be performed at point of sale, via a personal digital assistant with e-wallet functionality, or via a computer with access to the user’s e-wallet.

[0180] In an alternative electronic value token exchange embodiment, as discussed previously, the e-wallet may automatically direct electronic value token exchange activities. For example, the e-wallet user may manage the e-wallet so that upon the occasion when the user presents the e-wallet to satisfy a transaction at retail establishment, e.g., Retailer Q, and the e-wallet contains no Retailer Q branded electronic value tokens, the e-wallet will automatically, and in real time, initiate an electronic value token exchange process wherein the e-wallet communicates a request for electronic value token exchange to the electronic value token transaction computer 150. In this example, the e-wallet user has managed the e-wallet so that all electronic value tokens associated with prepaid services (gift card-type electronic value tokens) are located in a designated sub-wallet and each of said electronic value tokens were placed/ordered/designated in the sub-wallet via a preferential ranking system, e.g., most preferred electronic value token or token type (e.g., #1) to least preferred electronic value token or token type (e.g., #22), if there are 22 types of electronic value tokens in the sub-wallet. For example, Retailer M branded electronic value tokens may be designated as most preferred and Retailer L branded electronic value tokens may be designated as least preferred. Further in the example, the e-wallet also has been provided with rules by the user that directs the e-wallet, in circumstances wherein the e-wallet has been presented to facilitate a transaction at a retailer in which the e-wallet contains none of said retailer’s electronic value tokens (the e-wallet will recognize the retailer based on information exchanged between the e-wallet and the retailer’s communication devices at the onset of the original transaction), such as the Retailer Q scenario described above, the e-wallet rules direct the e-wallet to initiate an electronic value token exchange request and to include in said request the exchange of the least preferred electronic value token residing in the e-wallet, i.e., the Retailer L branded electronic value token (#22) and if necessary preferred electronic value token #/21, #20, etc., for a Retailer Q electronic value token in an amount sufficient to meet the original transaction’s amount. The electronic value token transaction computer 150, upon receipt of the electronic value token exchange request, communicates with an electronic value token exchange program 2000, e.g., an electronic value token distributor, (which is part of the overall electronic value token transaction processing system 100) to effectuate the requested electronic value token exchange. The requested electronic value token exchange is performed, the e-wallet receives the requested Retailer Q branded electronic value token, which is coincidentally used in conducting the original transaction, and the e-wallet surrenders (or makes unavailable for use and only available for modification) the Retailer L branded electronic value token to the electronic value token transaction computer 150, which in this case was actually valued in excess of the requested Retailer Q branded electronic value token. As such, the electronic value token transaction computer 150, modifies the value of the Retailer L branded electronic value token (either internally or via communication with the Retailer L branded electronic value token’s issuing system) to reflect the value reduction based on the provided Retailer Q branded electronic value token, extracts the exchange rate for the exchange of the Retailer Q branded electronic value token for the Retailer L branded electronic value token (as will be discussed more fully herein), communicates the transactional information to all interested parties, and returns (or makes available again) the value-modified Retailer L branded value token to the user’s e-wallet.

[0181] In an alternate embodiment, the e-wallet’s electronic value token exchange rules could have provided that the e-wallet query the electronic value token transaction computer 150 regarding the best available exchange rate for the electronic value tokens residing in the e-wallet and make the exchange based on the best exchange rate rather than the ranking of the electronic value tokens. Further the e-wallet user may subjectively determine which electronic token(s) should be exchanged to satisfy a transaction.

[0182] In an embodiment, the electronic token exchange program 2000 may survey a user’s e-wallets and sub-wallets maintained by the electronic value token transaction computer 150 and make the e-wallet user an offer(s) for electronic value token exchange(s). For example, the electronic token exchange program 2000, as part of the survey may determine, based on (i) the history of the e-wallet’s use; (ii) the length of time an unused electronic value token has resided in an e-wallet; (iii) the demand for certain electronic value tokens in the marketplace; (iv) dates for spoilage of electronic value tokens; (v) promotional offers for acquiring electronic value tokens; and (vi) combinations thereof, to offer an e-wallet user to exchange an electronic value token(s) presently residing in the user’s e-wallet/sub-wallet for an electronic value token(s) not presently residing in the user’s e-wallet/sub-wallet. In an embodiment, the electronic token exchange program 2000 may supplement the offer for exchange with a value added/bonus incentive as described previously herein. In another embodiment, the offer may include an option for the user to place a portion of the exchange value amount into a savings wallet, as will be more fully below.

[0183] As referenced with respect to both the primary e-wallet and sub-wallet embodiments described above, the disclosed e-wallet and sub-wallet methods and systems provide users with the ability to designate the locations of value
tokens residing in an e-wallet or sub-wallet, as well as rules prescribing the use and/or availability of said e-wallet and/or sub-wallet. As also described herein, electronic value token(s) may be removed from a sub-wallet configured to allow redemption activities (hereinafter “fully-redeemable” designated e-wallet or sub-wallet) and placed into a sub-wallet configured for savings activities with limited redemption possibilities (hereinafter “savings” designated e-wallet or sub-wallet). In fact, the instant system provides for electronic value token(s) to be placed into a “savings” designated e-wallet or sub-wallet at the time the electronic value token is made available to the e-wallet or sub-wallet.

[0184] In an embodiment, electronic value tokens may be designated for and/or placed in certain e-wallets and/or sub-wallets which have rules providing that the e-wallets or sub-wallets are to be used for savings activities and thus are not readily available for general access or for redemption/exchange activities in an embodiment, similar savings capabilities, functionalities, requirements, and limitations of the instantly described electronic value token transaction processing system 100 are detailed and described in International Application Serial No. PCT/US11/49338 which is incorporated by reference in its entirety, such similar savings capabilities, functionalities, requirements, and limitations may be adapted from the context described in International Application Serial No. PCT/US11/49338 to be applied in the instant e-wallet/electronic value token context.

[0185] At least in some embodiments, allows a user to easily redistribute electronic value tokens (e.g., debit card-related electronic value tokens) from a “fully-redeemable” designated e-wallet or sub-wallet to a “savings” designated e-wallet or sub-wallet, and vice versa. The user may be limited by law to a given number of, e.g., six, transfers out of the “savings” designated e-wallet or sub-wallet to the “fully-redeemable” designated e-wallet or sub-wallet per calendar month. The user may designate one-time transfers through the e-wallet system’s website, IVR, personal digital assistant or smart phone, or with a customer service representative. The user may also establish and automated transfers between the “fully-redeemable” designated e-wallet or sub-wallet and the “savings” designated e-wallet or sub-wallet. To encourage savings, users may be presented with option to automatically fund the “savings” designated e-wallet or sub-wallet from the “fully-redeemable” designated e-wallet or sub-wallet that may be triggered by various transaction events, including: (a) upon receiving a direct deposit, (b) when a reload/recharge/ topping up transaction occurs, and/or (c) at a designated time interval (e.g., recurring weekly or monthly). The user can elect all, some, or none of the options available. Moreover, the above events may be sanctioned regardless of the “fully-redeemable” designated or “savings” designated e-wallet or sub-wallet’s current balance. The user may have the ability to select an amount or percent of electronic value tokens loaded onto “fully-redeemable” designated e-wallet or sub-wallet. Where the user chooses a time interval for automatic transfers, the user may be able to select a preferred date. The user would have the flexibility to update, edit, or otherwise change the automatic funding option at any time. Any negative “fully-redeemable” designated e-wallet or sub-wallet may need to be cured prior to initiating any automatic or one-time transfers to “savings” designated e-wallet or sub-wallet. If an automatic transfer cannot be fully funded or cannot be funded at all, any amounts available will be taken from the “fully-redeemable” designated e-wallet or sub-wallet to the “savings” designated e-wallet or sub-wallet and a notification will be provided to the e-wallet user describing the transaction. Automatic transfers will continue thereafter for the designated transfer option and amount.

[0186] The electronic value token transaction computer 150 above may be implemented on any particular machine with sufficient processing power, memory resources, and network throughput capability to handle the necessary workload placed upon it.

[0187] All of, or a portion of, the system described above may be implemented on any particular machine, or machines, with sufficient processing power, memory resources, and throughput capability to handle the necessary workload placed upon the computer, or computers. FIG. 5 illustrates a computer system 580 suitable for implementing all, or a portion of, one or more embodiments disclosed herein. The computer system 580 includes a processor 582 (which may be referred to as a central processor unit or CPU) that is in communication with memory devices including secondary storage 584, read only memory (ROM) 586, random access memory (RAM) 588, input/output (I/O) devices 590, and network connectivity devices 592. The processor 582 may be implemented as one or more CPU chips.

[0188] It is understood that by programming and/or loading executable instructions onto the computer system 580, at least one of the CPU 582, the RAM 588, and the ROM 586 are changed, transforming the computer system 580 in part into a particular machine or apparatus having the novel functionality taught by the present disclosure. It is fundamental to the electrical engineering and software engineering arts that functionality that can be implemented by loading executable software into a computer can be converted to a hardware implementation by well known design rules. Decisions between implementing a concept in software versus hardware typically hinge on considerations of stability of the design and numbers of units to be produced rather than any issues involved in translating from the software domain to the hardware domain. Generally, a design that is subject to frequent change may be preferred to be implemented in software, because re-spinning a hardware implementation is more expensive than re-spinning a software design. Generally, a design that is stable that will be produced in large volume may be preferred to be implemented in hardware, for example in an application specific integrated circuit (ASIC), because for large production runs the hardware implementation may be less expensive than the software implementation. Often a design may be developed and tested in a software form and later transformed, by well known design rules, to an equivalent hardware implementation in an application specific integrated circuit that hardwires the instructions of the software. In the same manner as a machine controlled by a new ASIC is a particular machine or apparatus, likewise a computer that has been programmed and/or loaded with executable instructions may be viewed as a particular machine or apparatus.

[0189] The secondary storage 584 is typically comprised of one or more disk drives or tape drives and is used for non-volatile storage of data and as an overflow data storage device if RAM 588 is not large enough to hold all working data. Secondary storage 584 may be used to store programs which are loaded into RAM 588 when such programs are selected for execution. The ROM 586 is used to store instructions and perhaps data which are read during program execution. ROM 586 is a non-volatile memory device which typi-
cally has a small memory capacity relative to the larger memory capacity of secondary storage 584. The RAM 588 is used to store volatile data and perhaps to store instructions. Access to both ROM 586 and RAM 588 is typically faster than to secondary storage 584. The secondary storage 584, the RAM 588, and/or the ROM 586 may be referred to in some contexts as computer readable storage media and/or non-transitory computer readable media.

[0190] I/O devices 590 may include printers, video monitors, liquid crystal displays (LCDs), touch screen displays, keyboards, keypads, switches, dials, mice, track balls, voice recognizers, card readers, paper tape readers, or other well-known input devices.

[0191] The network connectivity devices 592 may take the form of modems, modem banks, Ethernet cards, universal serial bus (USB) interface cards, serial interfaces, token ring cards, fiber distributed data interface (FDDI) cards, wireless local area network (WLAN) cards, radio transceiver cards such as code division multiple access (CDMA), global system for mobile communications (GSM), long-term evolution (LTE), worldwide interoperability for microwave access (WiMAX), and/or other air interface protocol radio transceiver cards, and other well-known network devices. These network connectivity devices 592 may enable the processor 582 to communicate with the Internet or one or more intranets. With such a network connection, it is contemplated that the processor 582 might receive information from the network, or might output information to the network in the course of performing the above-described method steps. Such information, which is often represented as a sequence of instructions to be executed using processor 582, may be received from and outputted to the network, for example, in the form of a computer data signal embodied in a carrier wave.

[0192] Such information, which may include data or instructions to be executed using processor 582 for example, may be received from and outputted to the network, for example, in the form of a computer data baseband signal or signal embodied in a carrier wave. The baseband signal or signal embodied in the carrier wave, or other types of signals currently used or hereafter developed, may be generated according to several methods well known to one skilled in the art. The baseband signal and/or signal embodied in the carrier wave may be referred to in some contexts as a signal.

[0193] The processor 582 executes instructions, codes, computer programs, scripts which it accesses from hard disk, floppy disk, optical disk (these various disk based systems may be considered secondary storage 584), ROM 586, RAM 588, or the network connectivity devices 592. While only one processor 582 is shown, multiple processors may be present. Thus, while instructions may be discussed as executed by a processor, the instructions may be executed simultaneously, serially, or otherwise executed by one or multiple processors. Instructions, codes, computer programs, scripts, and/or data that may be accessed from the secondary storage 584, for example, hard drives, floppy disks, optical disks, and/or other device, the ROM 586, and/or the RAM 588 may be referred to in some contexts as non-transitory instructions and/or non-transitory information.

[0194] In an embodiment, the computer system 580 may comprise two or more computers in communication with each other that collaborate to perform a task. For example, but not by way of limitation, an application may be partitioned in such a way as to permit concurrent and/or parallel processing of the instructions of the application. Alternatively, the data processed by the application may be partitioned in such a way as to permit concurrent and/or parallel processing of different portions of a data set by the two or more computers. In an embodiment, virtualization software may be employed by the computer system 580 to provide the functionality of a number of servers that is not directly bound to the number of computers in the computer system 580. For example, virtualization software may provide twenty virtual servers on four physical computers. In an embodiment, the functionality disclosed above may be provided by executing the application and/or applications in a cloud computing environment. Cloud computing may comprise providing computing services via a network connection using dynamically scalable computing resources. Cloud computing may be supported, at least in part, by virtualization software. A cloud computing environment may be established by an enterprise and/or may be hired on an as-needed basis from a third party provider. Some cloud computing environments may comprise cloud computing resources owned and shared by the enterprise as well as cloud computing resources hired and/or leased from a third party provider.

[0195] In an embodiment, some or all of the functionality disclosed above may be provided as a computer program product. The computer program product may comprise one or more computer readable storage medium having computer usable program code embodied therein to implement the functionality disclosed above. The computer program product may comprise data structures, executable instructions, and/or other computer usable program code. The computer program product may be embodied in removable computer storage media and/or non-removable computer storage media. The removable computer readable storage medium may comprise, without limitation, a paper tape, a magnetic tape, magnetic disk, an optical disk, a solid state memory chip, for example analog magnetic tape, compact disk read only memory (CD-ROM) disks, floppy disks, jump drives, digital cards, multimedia cards, and others. The computer program product may be suitable for loading, by the computer system 580, at least portions of the contents of the computer program product to the secondary storage 584, to the ROM 586, to the RAM 588, and/or to other non-volatile memory and volatile memory of the computer system 580. The processor 582 may process the executable instructions and/or data structures in part by directly accessing the computer program product, for example by reading from a CD-ROM disk inserted into a disk drive peripheral of the computer system 580. Alternatively, the processor 582 may process the executable instructions and/or data structures by remotely accessing the computer program product, for example by downloading the executable instructions and/or data structures from a remote server through the network connectivity devices 592. The computer program product may comprise instructions that promote the loading and/or copying of data, data structures, files, and/or executable instructions to the secondary storage 584, to the ROM 586, to the RAM 588, and/or to other non-volatile memory and volatile memory of the computer system 580.

[0196] In some contexts, the secondary storage 584, the ROM 586, and the RAM 588 may be referred to as a non-transitory computer readable medium or a computer readable storage media. A dynamic RAM embodiment of the RAM 588, likewise, may be referred to as a non-transitory computer readable medium in that while the dynamic RAM receives
electrical power and is operated in accordance with its design, for example during a period of time during which the computer 580 is turned on and operational, the dynamic RAM stores information that is written to it. Similarly, the processor 582 may comprise an internal RAM, an internal ROM, a cache memory, and/or other internal non-transitory storage blocks, sections, or components that may be referred to in some contexts as non-transitory computer readable media or computer readable storage media.

[0197] The ordering of steps in the various processes, data flows, and flowcharts presented are for illustration purposes and do not necessarily reflect the order that various steps must be performed. The steps may be rearranged in different orders in different embodiments to reflect the needs, desires and preferences of the entity implementing the systems. Furthermore, many steps may be performed simultaneously with other steps in some embodiments.

[0198] Also, techniques, systems, subsystems and methods described and illustrated in the various embodiments as discrete or separate may be combined or integrated with other systems, modules, techniques, or methods without departing from the scope of the present disclosure. Other items shown or discussed as directly coupled or communicating with each other may be coupled through some interface or device, such that the items may no longer be considered directly coupled to each other but may still be indirectly coupled and in communication, whether electrically, mechanically, or otherwise with one another. Other examples of changes, substitutions, and alterations are ascertainable by one skilled in the art and could be made without departing from the spirit and scope disclosed. The following numbered entries represent a non-exhaustive collection of exemplary embodiments of the instantly disclosed subject matter:

[0199] 1. A computer implemented method, comprising:
   [0200] receiving a request to process a payment transaction against an electronic wallet;
   [0201] identifying authentication information of the request;
   [0202] identifying a value token in the electronic wallet; and
   [0203] applying at least a portion of the value token to at least a portion of the request.
[0204] 2. The method of 1, further comprising:
   [0205] accepting an authentication token to access the electronic wallet.
[0206] 3. The method of 2, wherein the authentication information is based on the authentication token, wherein the authentication token comprises a proxy card, a mobile device, a password, a biometric identifier, or combinations thereof.
[0207] 4. The method of 1, wherein the electronic wallet comprises a primary wallet and a sub-wallet.
[0208] 5. The method of 4, further comprising:
   [0209] processing at least a portion of the request via the primary wallet.
[0210] 6. The method of 4, further comprising:
   [0211] processing at least a portion of the request via the sub-wallet.
[0212] 7. The method of 4, wherein the primary wallet comprises the value token, the method further comprising:
   [0213] determining the request is related to the primary wallet; and
   [0214] determining the value token is capable of meeting the request.

[0215] 8. The method of 7, wherein applying at least a portion of the value token comprises applying at least a portion of the value token of the primary wallet to the request.
[0216] 9. The method of 4, wherein the sub-wallet comprises the value token, the method further comprising:
   [0217] determining the request is related to the sub-wallet; and
   [0218] determining the value token is capable of meeting the request.
[0219] 10. The method of 9, wherein applying at least a portion of the value token comprises applying at least a portion of the value token of the sub-wallet to the request.
[0220] 11. The method of 4, wherein the electronic wallet comprises two or more value tokens, wherein the primary wallet comprises at least one of the two or more value tokens, wherein the sub-wallet comprises at least another of the two or more value tokens.
[0221] 12. The method of 11, further comprising:
   [0222] determining a portion of the request is related to the primary wallet; and
   [0223] determining another portion of the request is related to the sub-wallet.
[0224] 13. The method of 12, further comprising:
   [0225] applying at least a portion of the primary wallet’s value token to the request; and
   [0226] applying at least a portion of the sub-wallet’s value token to the request.
[0227] 14. The method of 8 or 13, wherein the value token of the primary wallet is applied to the request under a rule of the primary wallet or the request.
[0228] 15. The method of 10 or 13, wherein the value token of the sub-wallet is applied to the request under a rule of the sub-wallet or the request.
[0229] 16. The method of 4, wherein an aggregator system receives the request, the method further comprising:
   [0230] determining at least a portion of the request may be processed in the sub-wallet; and
   [0231] sending the portion of the request from the aggregator system to a third party.
[0232] 17. The method of 1, wherein the request includes an identity of a point of sale terminal, authentication information; an amount of a purchase; an identity of the value token issuer; an identity of a vendor; an identity of a location; a time of the request; a date of the request; information identifying a primary wallet, sub-wallet, or a combination thereof; transaction data; authentication data; or combinations thereof.
[0233] 18. The method of 1, wherein the value token comprises an electronic representation of value, wherein the electronic representation of value comprises a credit card, debit card, gift card, prepaid telephone card, loyalty card, membership card, ticket or ticket card, entertainment card, sports card, prepaid card, coupon, admission pass, prepaid or pre-purchases of goods or services, cash, currency, credit card account, debit card account, merchant account, bank account, merchant-issued credit, merchant-issued point, merchant-issued promotional value, merchant-accepted credit, merchant-accepted point, merchant-accepted promotional value, or combinations thereof.
[0234] 19. The method of 18, wherein the value token further comprises at least two electronic representations of value of different types.
[0235] 20. The method of 1, wherein the value token comprises a closed loop account number, wherein applying at
least a portion of the value token comprises crediting or debiting a closed loop account associated with the closed loop account number.

[0236] 21. The method of 1, wherein the value token comprises an open loop account number, wherein applying at least a portion of the value token comprises crediting or debiting an open loop account associated with the open loop account number.

[0237] 22. The method of 1, wherein applying at least a portion of the value token comprises using the value token according to a set of configurable rules specifying priority of the value tokens.

[0238] 23. The method of 22, wherein the priority is based on a transaction information variable comprising physical location of a retailer originating the electronic wallet request; transaction amount; type of retailer; time of day; day of week; week of month; month of year; department of retailer originating the electronic wallet request; lane of retailer originating the electronic wallet request; identification of checker; parent company of a retailer originating the electronic wallet request; value of value tokens; type of the electronic wallet request; or combinations thereof.

[0239] 24. The method of 1, wherein applying at least a portion of the value token comprises using the value token according to a set of configurable rules specifying percentages of the electronic wallet request to which value tokens may be applied.

[0240] 25. The method of 1, further comprising:

[0241] examining a rule associated with the electronic wallet.

[0242] 26. The method of 25, wherein examining a rule comprises:

[0243] examining a priority of the value token.

[0244] 27. The method of 25, wherein examining a rule comprises:

[0245] examining a percentage of the request;

[0246] applying at least a portion of the value token comprises applying at least a portion of the value token to the request according to the percentage.

[0247] 28. The method of 1, wherein the electronic wallet comprises a closed loop-related value token and an open loop-related value token, the method further comprising:

[0248] selecting the closed loop-related value token; and

[0249] then selecting the open loop-related value token.

[0250] 29. The method of 1, wherein the electronic wallet comprises an open loop-related value token, the method further comprising:

[0251] withholding the open loop-related value token from being applied to the request.

[0252] 30. The method of 1, further comprising:

[0253] exchanging at least a portion of the value token of the electronic wallet for at least a portion of a second value token not located in the electronic wallet.

[0254] 31. The method of 30, further comprising:

[0255] applying an exchange rate against the second value token or an asset located in the electronic wallet.

[0256] 32. The method of 30, wherein exchanging at least a portion of the value token comprises:

[0257] contacting a second value token distributor; and

[0258] requesting the second value token distributor to provide the second value token.

[0259] 33. The method of 1, wherein the electronic wallet comprises a first sub-wallet and a second sub-wallet, wherein the first sub-wallet comprises the value token, the method further comprising:

[0260] placing the value token of the first sub-wallet into the second sub-wallet.

[0261] 34. The method of 1, further comprising:

[0262] provisioning the electronic wallet with the value token.

[0263] 35. The method of 34, wherein the value token is provisioned in an amount different than the purchase price.

[0264] 36. The method of 34, wherein provisioning the electronic wallet comprises encoding the value token with a coupon code.

[0265] 37. The method of 34, wherein provisioning the electronic wallet comprises adding the value token to the electronic wallet.

[0266] 38. The method of 1, wherein the electronic wallet comprises a savings-designated sub-wallet, the method further comprising:

[0267] placing at least a portion of the value token in the savings-designated sub-wallet.

[0268] 39. A computer implemented method, comprising:

[0269] receiving a request to process a payment transaction against an electronic wallet;

[0270] determining the request contains valid authentication information;

[0271] determining a value token, or a combination of value tokens, associated with the electronic wallet is capable of meeting the request; and

[0272] applying at least a portion of the value token to at least a portion of the request.

[0273] 40. The method of 39, further comprising:

[0274] accepting an authentication token to access the electronic wallet.

[0275] 41. The method of 40, wherein the authentication information is based on the authentication token, wherein the authentication token comprises a proxy card, a mobile device, a password, a biometric identifier, or combinations thereof.

[0276] 42. The method of 39, wherein the electronic wallet comprises a primary wallet and a sub-wallet.

[0277] 43. The method of 42, further comprising:

[0278] processing at least a portion of the request via the primary wallet.

[0279] 44. The method of 43, further comprising:

[0280] processing at least another portion of the request via the sub-wallet.

[0281] 45. The method of 42, wherein the primary wallet comprises the value token, the method further comprising:

[0282] determining the request is related to the primary wallet;

[0283] wherein applying at least a portion of the value token comprises applying at least a portion of the value token of the primary wallet to the request.

[0284] 46. The method of 42, wherein the sub-wallet comprises the value token, the method further comprising:

[0285] determining the request is related to the sub-wallet;

[0286] wherein applying at least a portion of the value token comprises applying at least a portion of the value token of the sub-wallet to the request.

[0287] 47. The method of 42, wherein the electronic wallet comprises two or more value tokens, wherein the primary
wallet comprises at least one of the two or more value tokens, wherein the sub-wallet comprises at least another of the two or more value tokens.

[0288] 48. The method of 47, further comprising:
[0289] determining a portion of the request is related to the primary wallet; and
[0290] determining another portion of the request is related to the sub-wallet.
[0291] 49. The method of 48, further comprising:
[0292] applying at least a portion of the primary wallet’s value token to the request; and
[0293] applying at least a portion of the sub-wallet’s value token to the request.
[0294] 50. The method of 45 or 49, wherein the value token of the primary wallet is applied to the request under a rule of the primary wallet or the request.
[0295] 51. The method of 46 or 49, wherein the value token of the sub-wallet is applied to the request under a rule of the sub-wallet or the request.
[0296] 52. The method of 42, wherein an aggregator system receives the request, the method further comprising:
[0297] determining at least a portion of the request may be processed in the sub-wallet; and
[0298] sending the portion of the request from the aggregator system to a third party.
[0299] 53. A method for a sub-wallet in an electronic wallet system, the method comprising:
[0300] receiving a request to process a payment transaction against an electronic wallet from a provider of a primary wallet;
[0301] determining a value token is capable of meeting the request; and
[0302] applying at least a portion of the value token to at least a portion of the request.
[0303] 54. The method of 53, further comprising:
[0304] determining the request is related to the sub-wallet;
[0305] wherein applying at least a portion of the value token comprises applying at least a portion of the value token of the sub-wallet to the request.
[0306] 55. The method of 53, wherein the sub-wallet comprises a sub-sub-wallet.
[0307] 56. The method of 55, further comprising:
[0308] determining the request is related to the sub-sub-wallet;
[0309] wherein applying at least a portion of the value token comprises applying the value token of the sub-sub-wallet to the request.
[0310] 57. The method of 55, further comprising:
[0311] determining a portion of the request is related to the sub-wallet; and
[0312] determining another portion of the request is related to the sub-sub-wallet.
[0313] 58. The method of 55, wherein the sub-wallet comprises two or more value tokens, wherein the sub-wallet comprises at least one of the two or more value tokens, wherein the sub-sub-wallet comprises at least another of the two or more value tokens.
[0314] 59. The method of 58, further comprising:
[0315] applying at least a portion of the sub-wallet’s value token to the request; and
[0316] applying at least a portion of the sub-sub-wallet’s value token to the request.

[0317] 60. The method of 54 or 59, wherein the value token of the sub-wallet is applied to the request under a rule of the sub-wallet or the request.
[0318] 61. The method of 56 or 59, wherein the value token of the sub-sub-wallet is applied to the request under a rule of the sub-sub-wallet or the request.
[0319] 62. A method for managing the contents of an electronic wallet, comprising:
[0320] receiving a request related to an electronic wallet, wherein the request comprises an electronic wallet request, a balance inquiry request, a registration request, an activation request, a redemption request, or combinations thereof; and
[0321] managing the contents of the electronic wallet according to the request.
[0322] 63. The method of 62, wherein managing the contents comprises:
[0323] exchanging at least a portion of a value token of the electronic wallet for at least a portion of a second value token not located in the electronic wallet.
[0324] 64. The method of 63, further comprising:
[0325] applying an exchange rate against the second value token or an asset located in the electronic wallet.
[0326] 65. The method of 63, wherein exchanging at least a portion of the value token comprises:
[0327] contacting a second value token distributor of the second value token; and
[0328] requesting the second value token distributor to provide the second value token.
[0329] 66. The method of 62, wherein the electronic wallet comprises a first sub-wallet and a second sub-wallet, wherein the first sub-wallet comprises a value token, the method further comprising:
[0330] placing the value token of the first sub-wallet into the second sub-wallet.
[0331] 67. The method of 62, further comprising:
[0332] provisioning the electronic wallet with a value token.
[0333] 68. The method of 67, wherein provisioning the electronic wallet comprises adding the value token to the electronic wallet.
[0334] 69. The method of 67, wherein the value token is provisioned in an amount different than the purchase price.
[0335] 70. The method of 67, wherein provisioning the electronic wallet comprises encoding the value token with a coupon code.
[0336] 71. The method of 62, wherein the electronic wallet comprises a savings-designated sub-wallet, the method further comprising:
[0337] placing at least a portion of a value token in the savings-designated sub-wallet.
[0338] 72. A non-transitory machine-readable storage medium comprising executable instructions that, when executed, cause one or more processors to:
[0339] receive a request to process a payment transaction against an electronic wallet;
[0340] identify authentication information of the request;
[0341] identify a value token in the electronic wallet; and
[0342] apply at least a portion of the value token to at least a portion of the request.
[0343] 73. A non-transitory machine-readable storage medium comprising executable instructions that, when executed, cause one or more processors to:
[0344] receive a request to process a payment transaction against an electronic wallet;
determine the request contains valid authentication information;
[0346] determine a value token, or a combination of value tokens, associated with the electronic wallet is capable of meeting the request; and
[0347] apply at least a portion of the value token to at least a portion of the request.
[0348] 74. A non-transitory machine-readable storage medium comprising executable instructions that, when executed, cause one or more processors to:
[0349] receive a request to process a payment transaction against an electronic wallet from a provider of a primary wallet;
[0350] determine a value token is capable of meeting the request; and
[0351] apply at least a portion of the value token to at least a portion of the request.
[0352] 75. A non-transitory machine-readable storage medium comprising executable instructions that, when executed, cause one or more processors to:
[0353] receive a request related to an electronic wallet, wherein the request comprises an electronic wallet request, a balance inquiry request, a registration request, an activation request, a redemption request, or combinations thereof; and
[0354] manage the contents of the electronic wallet according to the request.
[0355] 76. A system comprising:
[0356] one or more processors;
[0357] a memory coupled to at least one of the one or more processors;
[0358] the memory comprising executable instructions that, when executed, cause the one or more processors to:
[0359] receive a request to process a payment transaction against an electronic wallet;
[0360] identify authentication information of the request;
[0361] identify a value token in the electronic wallet; and
[0362] apply at least a portion of the value token to at least a portion of the request.
[0363] 77. The system of 76, wherein the one or more processors are further caused to accept an authentication token to access the electronic wallet.
[0364] 78. The system of 77, wherein the authentication information is based on the authentication token, wherein the authentication token comprises a proxy card, a mobile device, a password, a biometric identifier, or combinations thereof.
[0365] 79. The system of 76, wherein the electronic wallet comprises a primary wallet and a sub-wallet.
[0366] 80. The system of 79, wherein the one or more processors are further caused to process at least a portion of the request via the primary wallet.
[0367] 81. The system of 79, wherein the one or more processors are further caused to process at least a portion of the request via the sub-wallet.
[0368] 82. The system of 79, wherein the primary wallet comprises the value token, wherein the one or more processors are further caused to:
[0369] determine the request is related to the primary wallet; and
[0370] determine the value token is capable of meeting the request.
[0371] 83. The system of 82, wherein apply at least a portion of the value token comprises apply at least a portion of the value token of the primary wallet to the request.
[0372] 84. The system of 79, wherein the sub-wallet comprises the value token, wherein the one or more processors are further caused to:
[0373] determine the request is related to the sub-wallet; and
[0374] determine the value token is capable of meeting the request.
[0375] 85. The system of 84, wherein apply at least a portion of the value token comprises apply at least a portion of the value token of the sub-wallet to the request.
[0376] 86. The system of 79, wherein the electronic wallet comprises two or more value tokens, wherein the primary wallet comprises at least one of the two or more value tokens, wherein the sub-wallet comprises at least another of the two or more value tokens.
[0377] 87. The system of 86, wherein the one or more processors are further caused to:
[0378] determine a portion of the request is related to the primary wallet; and
[0379] determine another portion of the request is related to the sub-wallet.
[0380] 88. The system of 87, further comprising:
[0381] apply at least a portion of the primary wallet’s value token to the request; and
[0382] apply at least a portion of the sub-wallet’s value token to the request.
[0383] 89. The system of 83 or 88, wherein the value token of the primary wallet is applied to the request under a rule of the primary wallet or the request.
[0384] 90. The system of 85 or 88, wherein the value token of the sub-wallet is applied to the request under a rule of the sub-wallet or the request.
[0385] 91. The system of 79, wherein an aggregator system receives the request, wherein the one or more processors are further caused to:
[0386] determine at least a portion of the request may be processed in the sub-wallet; and
[0387] send the portion of the request from the aggregator system to a third party.
[0388] 92. The system of 76, wherein the request includes an identity of a point of sale terminal; authentication information; an amount of a purchase; an identity of the value token issuer; an identity of a vendor; an identity of a location; a time of the request; a date of the request; information identifying a primary wallet, sub-wallet, or a combination thereof; a transaction identifier; transaction data; authentication data; or combinations thereof.
[0389] 93. The system of 76, wherein the value token comprises an electronic representation of value, wherein the electronic representation of value comprises a credit card, debit card, gift card, prepaid telephone card, loyalty card, membership card, ticket or ticket card, entertainment card, sports card, prepaid card, coupon, admission pass, prepaid or pre-purchased of goods or services, cash, currency, credit card account, debit card account, merchant account, bank account, merchant-issued credit, merchant-issued point, merchant-issued promotional value, merchant-accepted credit, merchant-accepted point, merchant-accepted promotional value, or combinations thereof.
[0390] 94. The system of 93, wherein the value token further comprises at least two electronic representations of value of different types.
[0391] 95. The system of 76, wherein the value token comprises a closed loop account number, wherein apply at least a
portion of the value token comprises credit or debit a closed loop account associated with the closed loop account number.

[0392] 96. The system of 76, wherein the value token comprises an open loop account number, wherein apply at least a portion of the value token comprises credit or debit an open loop account associated with the open loop account number.

[0393] 97. The system of 76, wherein apply at least a portion of the value token comprises using the value token according to a set of configurable rules specifying priority of the value tokens.

[0394] 98. The system of 97, wherein the priority is based on a transaction information variable comprising physical location of a retailer originating the electronic wallet request; transaction amount; type of retailer; time of day; day of week; week of month; month of year; department of retailer originating the electronic wallet request; lane of retailer originating the electronic wallet request; identification of checker; parent company of a retailer originating the electronic wallet request; value of value tokens; type of the electronic wallet request; or combinations thereof.

[0395] 99. The system of 76, wherein apply at least a portion of the value token comprises use the value token according to a set of configurable rules specifying percentages of the electronic wallet request to which value tokens may be applied.

[0396] 100. The system of 76, wherein the one or more processors are further caused to:

[0397] examine a rule associated with the electronic wallet.

[0398] 101. The system of 100, wherein examine a rule comprises:

[0399] examine a priority of the value token.

[0400] 102. The system of 100, wherein examine a rule comprises:

[0401] examine a percentage of the request;

[0402] wherein apply at least a portion of the value token comprises apply at least a portion of the value token to the request according to the percentage.

[0403] 103. The system of 76, wherein the electronic wallet comprises a closed loop-related value token and an open loop-related value token, wherein the one or more processors are further caused to:

[0404] select the closed loop-related value token; and

[0405] then select the open loop-related value token.

[0406] 104. The system of 76, wherein the electronic wallet comprises an open loop-related value token, wherein the one or more processors are further caused to:

[0407] withhold the open loop-related value token from being applied to the request.

[0408] 105. The system of 76, wherein the one or more processors are further caused to:

[0409] exchange at least a portion of the value token of the electronic wallet for at least a portion of a second value token not located in the electronic wallet.

[0410] 106. The system of 105, wherein the one or more processors are further caused to:

[0411] apply an exchange rate against the second value token or an asset located in the electronic wallet.

[0412] 107. The system of 105, wherein exchange at least a portion of the value token comprises:

[0413] contact a second value token distributor; and

[0414] request the second value token distributor to provide the second value token.

[0415] 108. The system of 76, wherein the electronic wallet comprises a first sub-wallet and a second sub-wallet, wherein the first sub-wallet comprises the value token, wherein the one or more processors are further caused to:

[0416] place the value token of the first sub-wallet into the second sub-wallet.

[0417] 109. The system of 76, wherein the one or more processors are further caused to:

[0418] provision the electronic wallet with the value token.

[0419] 110. The system of 109, wherein the value token is provisioned in an amount different than the purchase price.

[0420] 111. The system of 109, wherein provision the electronic wallet comprises encode the value token with a coupon code.

[0421] 112. The system of 109, wherein provision the electronic wallet comprises add the value token to the electronic wallet.

[0422] 113. The system of 76, wherein the electronic wallet comprises a savings-designated sub-wallet, wherein the one or more processors are further caused to:

[0423] place at least a portion of the value token in the savings-designated sub-wallet.

[0424] 114. A system comprising:

[0425] one or more processors;

[0426] a memory coupled to at least one of the one or more processors;

[0427] the memory comprising executable instructions that, when executed, cause the one or more processors to:

[0428] receive a request to process a payment transaction against an electronic wallet;

[0429] determine the request contains valid authentication information;

[0430] determine a value token, or a combination of value tokens, associated with the electronic wallet is capable of meeting the request; and

[0431] apply at least a portion of the value token to at least a portion of the request.

[0432] 115. The system of 114, wherein the one or more processors are further caused to:

[0433] accept an authentication token to access the electronic wallet.

[0434] 116. The system of 115, wherein the authentication information is based on the authentication token, wherein the authentication token comprises a proxy card, a mobile device, a password, a biometric identifier, or combinations thereof.

[0435] 117. The system of 114, wherein the electronic wallet comprises a primary wallet and a sub-wallet.

[0436] 118. The system of 117, wherein the one or more processors are further caused to:

[0437] process at least a portion of the request via the primary wallet.

[0438] 119. The system of 118, wherein the one or more processors are further caused to:

[0439] process at least another portion of the request via the sub-wallet.

[0440] 120. The system of 117, wherein the primary wallet comprises the value token, wherein the one or more processors are further caused to:

[0441] determine the request is related to the primary wallet;

[0442] wherein apply at least a portion of the value token comprises apply at least a portion of the value token of the primary wallet to the request.

[0443] 121. The system of 117, wherein the sub-wallet comprises the value token, wherein the one or more processors are further caused to:
determine the request is related to the sub-wallet;
wherein apply at least a portion of the value token comprises apply at least a portion of the value token of the sub-wallet to the request.

122. The system of 117, wherein the electronic wallet comprises two or more value tokens, wherein the primary wallet comprises at least one of the two or more value tokens, wherein the sub-wallet comprises at least another of the two or more value tokens.

123. The system of 122, wherein the one or more processors are further caused to:

determine a portion of the request is related to the primary wallet; and

determine another portion of the request is related to the sub-wallet

124. The system of 123, further comprising:

apply at least a portion of the primary wallet’s value token to the request; and

apply at least a portion of the sub-wallet’s value token to the request.

125. The system of 120 or 124, wherein the value token of the primary wallet is applied to the request under a rule of the primary wallet or the request.

126. The system of 121 or 124, wherein the value token of the sub-wallet is applied to the request under a rule of the sub-wallet or the request.

127. The system of 117, wherein an aggregator system receives the request, wherein the one or more processors are further caused to:

determine at least a portion of the request may be processed in the sub-wallet; and

send the portion of the request from the aggregator system to a third party.

128. A system comprising:
one or more processors;

a memory coupled to at least one of the one or more processors;

the memory comprising executable instructions that, when executed, cause the one or more processors to:

receive a request to process a payment transaction against an electronic wallet from a provider of a primary wallet;

determine a value token is capable of meeting the request; and

apply at least a portion of the value token to at least a portion of the request.

129. The system of 128, wherein the one or more processors are further caused to:

determine the request is related to the sub-wallet;

wherein apply at least a portion of the value token comprises apply at least a portion of the value token of the sub-wallet to the request.

130. The system of 128, wherein the sub-wallet comprises a sub-sub-wallet.

131. The system of 130, wherein the one or more processors are further caused to:

determine the request is related to the sub-sub-wallet;

wherein apply at least a portion of the value token comprises apply the value token of the sub-sub-wallet to the request.

132. The system of 130, wherein the one or more processors are further caused to:

determine a portion of the request is related to the sub-wallet; and

determine another portion of the request is related to the sub-sub-wallet.

133. The system of 130, wherein the electronic wallet comprises two or more value tokens, wherein the sub-wallet comprises at least one of the two or more value tokens, wherein the sub-sub-wallet comprises at least another of the two or more value tokens.

134. The system of 133, further comprising:
apply at least a portion of the value token of the sub-sub-wallet to the request; and

apply at least a portion of the value token of the sub-wallet to the request.

135. The system of 129 or 134, wherein the value token of the sub-wallet is applied to the request under a rule of the sub-wallet or the request.

136. The system of 131 or 134, wherein the value token of the sub-sub-wallet is applied to the request under a rule of the sub-sub-wallet or the request.

137. A system comprising:
one or more processors;
a memory coupled to at least one of the one or more processors;

the memory comprising executable instructions that, when executed, cause the one or more processors to:

receive a request related to an electronic wallet, wherein the request comprises an electronic wallet request, a balance inquiry request, a registration request, an activation request, a redemption request, or combinations thereof; and

manage the contents of the electronic wallet according to the request.

138. The system of 137, wherein manage the content comprises:

exchange at least a portion of a value token of the electronic wallet for at least a portion of a second value token not located in the electronic wallet.

139. The system of 138, wherein the one or more processors are further caused to:

apply an exchange rate against the second value token or an asset located in the electronic wallet.

140. The system of 138, wherein exchange at least a portion of the value token comprises:

contact a second value token distributor of the second value token; and

request the second value token distributor to provide the second value token.

141. The system of 137, wherein the electronic wallet comprises a first sub-wallet and a second sub-wallet, wherein the first sub-wallet comprises a value token, wherein the one or more processors are further caused to:

place the value token of the first sub-wallet into the second sub-wallet.

142. The system of 137, wherein the one or more processors are further caused to:

provision the electronic wallet with a value token.

143. The system of 142, wherein the value token is provisioned in an amount different than the purchase price.

144. The system of 142, wherein provision the electronic wallet comprises encode the value token with a coupon code.
The system of 142, wherein provision the electronic wallet comprises add the value token to the electronic wallet.

The system of 137, wherein the electronic wallet comprises a savings-designated sub-wallet, wherein the one or more processors are further caused to:

place at least a portion of a value token in the savings-designated sub-wallet.

A system comprising:

one or more processors;

a memory coupled to at least one of the one or more processors;

the memory comprising executable instructions that, when executed, cause the one or more processors to:

receive a request to process a payment transaction against an electronic wallet;

identify authentication information of the request;

identify a value token in the electronic wallet; and

apply at least a portion of the value token to at least a portion of the request.

The system of 147, wherein the one or more processors are further caused to accept an authentication token to access the electronic wallet.

The system of 148, wherein the authentication information is based on the authentication token, wherein the authentication token comprises a proxy card, a mobile device, a password, a biometric identifier, or combinations thereof.

The system of 149, wherein the electronic wallet comprises a primary wallet and a sub-wallet.

The system of 150, wherein the one or more processors are further caused to process at least a portion of the request via the primary wallet.

The system of 151, wherein the one or more processors are further caused to process at least a portion of the request via the sub-wallet.

The system of 152, wherein the primary wallet comprises the value token, wherein the one or more processors are further caused to:

determine the request is related to the primary wallet; and

determine the value token is capable of meeting the request.

The system of 153, wherein apply at least a portion of the value token comprises apply at least a portion of the value token of the primary wallet to the request.

The system of 154, wherein the sub-wallet comprises the value token, wherein the one or more processors are further caused to:

determine the request is related to the sub-wallet; and

determine the value token is capable of meeting the request.

The system of 155, wherein apply at least a portion of the value token comprises apply at least a portion of the value token of the sub-wallet to the request.

The system of 156, wherein the electronic wallet comprises two or more value tokens, wherein the primary wallet comprises at least one of the two or more value tokens, wherein the sub-wallet comprises at least another of the two or more value tokens.

The system of 157, wherein the one or more processors are further caused to:

determine a portion of the request is related to the primary wallet; and

determine another portion of the request is related to the sub-wallet.

The system of 158, wherein the one or more processors are further caused to:

apply at least a portion of the primary wallet’s value token to the request; and

apply at least a portion of the sub-wallet’s value token to the request.

The system of 159, wherein the value token of the primary wallet is applied to the request under a rule of the primary wallet.

The system of 159, wherein the value token of the primary wallet is applied to the request under a rule of the request.

The system of 159, wherein the value token of the sub-wallet is applied to the request under a rule of the sub-wallet.

The system of 159, wherein the value token of the sub-wallet is applied to the request under a rule of the request.

The system of 159, wherein an aggregator system receives the request, wherein the one or more processors are further caused to:

determine at least a portion of the request may be processed in the sub-wallet; and

send the portion of the request from the aggregator system to a third party.

The system of 164, wherein the request includes an identity of a point of sale terminal; authentication information; an amount of a purchase; an identity of the value token issuer; an identity of a vendor; an identity of a location; a time of the request; a date of the request; information identifying a primary wallet, sub-wallet, or a combination thereof; transaction data; authentication data; or combinations thereof.

The system of 165, wherein the value token comprises an electronic representation of value, wherein the electronic representation of value comprises a credit card, debit card, gift card, prepaid telephone card, loyalty card, membership card, ticket or ticket card, entertainment card, sports card, prepaid card, coupon, admission pass, prepaid or pre-purchases of goods or services, cash, currency, credit card account, debit card account, merchant account, bank account, merchant-issued credit, merchant-issued point, merchant-issued promotional value, merchant-accepted credit, merchant-accepted point, merchant-accepted promotional value, or combinations thereof.

The system of 166, wherein the value token further comprises at least two electronic representations of value of different types.

The system of 167, wherein the value token comprises a closed loop account number, wherein apply at least a portion of the value token comprises credit or debit a closed loop account associated with the closed loop account number.

The system of 168, wherein the value token comprises an open loop account number, wherein apply at least a portion of the value token comprises credit or debit an open loop account associated with the open loop account number.

The system of 169, wherein apply at least a portion of the value token comprises using the value token according to a set of configurable rules specifying priority of the value tokens.
171. The system of 170, wherein the priority is based on a transaction information variable comprising physical location of a retailer originating the electronic wallet request; transaction amount; type of retailer; time of day; day of week; week of month; month of year; department of retailer originating the electronic wallet request; lane of retailer originating the electronic wallet request; identification of checker; parent company of a retailer originating the electronic wallet request; value of value tokens; type of the electronic wallet request; or combinations thereof.

172. The system of 171, wherein apply at least a portion of the value token comprises use the value token according to a set of configurable rules specifying percentages of the electronic wallet request to which value tokens may be applied.

173. The system of 172, wherein the one or more processors are further caused to:

174. The system of 173, wherein examine a rule comprises:

175. The system of 174, wherein examine a rule comprises:

176. The system of 175, wherein the electronic wallet comprises a closed loop-related value token and an open loop-related value token, wherein the one or more processors are further caused to:

177. The system of 176, wherein the electronic wallet comprises an open loop-related value token, wherein the one or more processors are further caused to:

178. The system of 177, wherein the one or more processors are further caused to:

179. The system of 178, wherein the one or more processors are further caused to:

180. The system of 179, wherein exchange at least a portion of the value token comprises:

181. The system of 180, wherein the electronic wallet comprises a first sub-wallet and a second sub-wallet, wherein the first sub-wallet comprises the value token, wherein the one or more processors are further caused to:

182. The system of 181, wherein the one or more processors are further caused to:

183. The system of 182, wherein the value token is provisioned in an amount different than the purchase price.

184. The system of 183, wherein provision the electronic wallet comprises encode the value token with a coupon code.

185. The system of 184, wherein provision the electronic wallet comprises add the value token to the electronic wallet.

186. The system of 185, wherein the electronic wallet comprises a savings-designated sub-wallet, wherein the one or more processors are further caused to:

187. There has been described herein an electronic value token transaction processing system that allows users to purchase, redeem, and/or exchange electronic value tokens residing in an electronic wallet. It will be apparent to those skilled in the art that modifications may be made without departing from the spirit and scope of the disclosure. The embodiments described are representative only, and are not intended to be limiting. Many variations, combinations, and modifications of the applications disclosed herein are possible and are within the scope of the disclosure. Accordingly, the scope of protection is not limited by the description set out above, but is defined by the claims which follow, that scope including all equivalents of the subject matter of the claims.

What is claimed is:

1. A computer implemented electronic wallet managing method, comprising:

receiving a request to process a payment transaction against an electronic wallet;

identifying authentication information of the request;

identifying a value token in the electronic wallet; and

applying at least a portion of the value token to at least a portion of the request.

2. The method of claim 1, wherein the electronic wallet comprises a primary wallet and a sub-wallet.

3. The method of claim 2, further comprising:

processing at least a portion of the request via the primary wallet.

4. The method of claim 2, further comprising:

processing at least a portion of the request via the sub-wallet.

5. The method of claim 2, wherein an aggregator system receives the request, the method further comprising:

determining at least a portion of the request may be processed in the sub-wallet; and

sending the portion of the request from the aggregator system to a third party.

6. The method of claim 2, wherein the sub-wallet comprises a sub-sub-wallet.

7. The method of claim 1, wherein the value token comprises an electronic representation of value, wherein the electronic representation of value comprises a credit card, debit card, gift card, prepaid telephone card, loyalty card, membership card, ticket or ticket card, entertainment card, sports card, prepaid card, coupon, admission pass, prepaid or pre-purchases of goods or services, cash, currency, credit card account, debit card account, merchant account, bank account, merchant-issued credit, merchant-issued point, merchant-issued promotional value, merchant-accepted credit, merchant-accepted point, merchant-accepted promotional value, or combinations thereof.

8. The method of claim 7, wherein the value token further comprises at least two electronic representations of value of different types.
9. The method of claim 1, wherein applying at least a portion of the value token comprises using the value token according to a set of configurable rules specifying priority of the value tokens.

10. The method of claim 9, wherein the priority is based on a transaction information variable comprising physical location of a retailer originating the electronic wallet request; transaction amount; type of retailer; time of day; day of week; week of month; month of year; department of retailer originating the electronic wallet request; lane of retailer originating the electronic wallet request; identification of checker; parent company of a retailer originating the electronic wallet request; value of value tokens; type of the electronic wallet request; or combinations thereof.

11. The method of claim 1, wherein applying at least a portion of the value token comprises using the value token according to a set of configurable rules specifying percentages of the electronic wallet request to which value tokens may be applied.

12. The method of claim 1, further comprising:
exchanging at least a portion of the value token of the electronic wallet for at least a portion of a second value token not located in the electronic wallet.

13. The method of claim 12, further comprising:
applying an exchange rate against the second value token or an asset located in the electronic wallet.

14. The method of claim 12, wherein exchanging at least a portion of the value token comprises:
contacting a second value token distributor; and
requesting the second value token distributor to provide the second value token.

15. A computer implemented electronic wallet managing method, comprising:
receiving a request to process a payment transaction against an electronic wallet, wherein the electronic wallet comprises a primary wallet and a sub-wallet;
determining the request contains valid authentication information;
determining a value token, or a combination of value tokens, associated with the electronic wallet is capable of meeting the request; and
applying at least a portion of the value token to at least a portion of the request.

16. The method of claim 15, wherein the electronic wallet comprises two or more value tokens, wherein the primary wallet comprises at least one of the two or more value tokens, wherein the sub-wallet comprises at least another of the two or more value tokens.

17. The method of claim 16, further comprising:
determining a portion of the request is related to the primary wallet; and

determining another portion of the request is related to the sub-wallet.

18. The method of claim 17, further comprising:
applying at least a portion of the primary wallet’s value token to the request; and
applying at least a portion of the sub-wallet’s value token to the request.

19. A computer implemented electronic wallet managing method, comprising:
receiving a request related to an electronic wallet, wherein the request comprises an electronic wallet request, a balance inquiry request, a registration request, an activation request, a redemption request, or combinations thereof; and
managing the contents of the electronic wallet according to the request.

20. The method of claim 19, wherein managing the contents comprises:
exchanging at least a portion of a value token of the electronic wallet for at least a portion of a second value token not located in the electronic wallet.

21. The method of claim 20, further comprising:
applying an exchange rate against the second value token or an asset located in the electronic wallet.

22. The method of claim 20, wherein exchanging at least a portion of the value token comprises:
contacting a second value token distributor of the second value token; and
requesting the second value token distributor to provide the second value token.

23. The method of claim 19, wherein the electronic wallet comprises a first sub-wallet and a second sub-wallet, wherein the first sub-wallet comprises a value token, the method further comprising:
placing the value token of the first sub-wallet into the second sub-wallet.

24. The method of claim 19, further comprising:
provisioning the electronic wallet with a value token.

25. The method of claim 24 wherein provisioning the electronic wallet comprises adding the value token to the electronic wallet.

26. The method of claim 24, wherein the value token is provisioned in an amount different than the purchase price.

27. The method of claim 24, wherein provisioning the electronic wallet comprises encoding the value token with a coupon code.

28. The method of claim 19, wherein the electronic wallet comprises a savings-designated sub-wallet, the method further comprising:
placing at least a portion of a value token in the savings-designated sub-wallet.

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