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(54) **MOBILE PHONE BASED REBATE DEVICE FOR REDEMPTION AT A POINT OF SALE TERMINAL**

(71) Applicant: **William H. Bollman**, Washington, DC (US)

(72) Inventor: **Michael Craft**, Carlsbad, CA (US)

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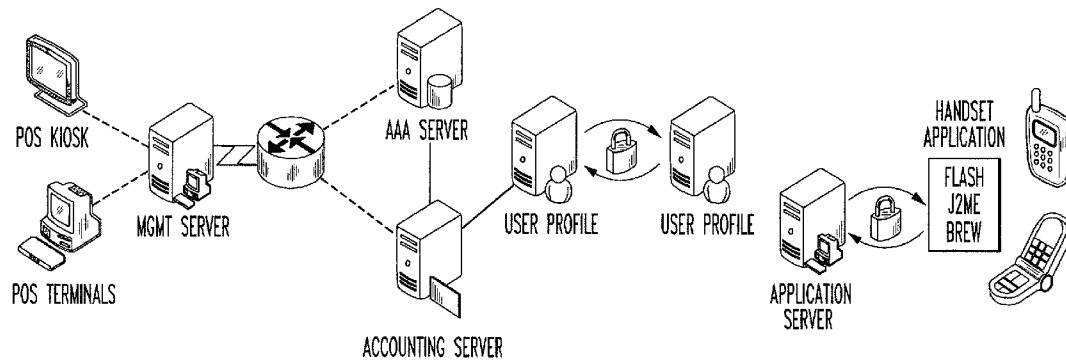(52) **U.S. Cl.**
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(57) **ABSTRACT**

Virtual mobile rewards, gift cards, and/or physical world retailers' loyalty and reward programs are aggregated into a common account accessible and transactional from an Internet capable mobile radio device. Subscribers gain access to discounted codes, coupons, rebates, gift cards, and/or limited time offers, on their mobile device for food, travel, lifestyle, electronics, and entertainment products that fit their lifestyle spending habits, enabling users to edit participating retailers, manage separate account balances, and present preferred discounted offers at retailers and apply discount towards purchase of goods.

POS KIOSK

POS TERMINALS

MGMT SERVER

AAA SERVER

ACCOUNTING SERVER

USER PROFILE

USER PROFILE

APPLICATION SERVER

HANDSET APPLICATION

FLASH
J2ME
BREW

1.) POS TERMINALS NETWORKED TO CENTRALIZED MGMT SERVER.

2.) MGMT SERVER NETWORKED TO ROUTER.
  - ROUTER NETWORKED TO REMOTE AAA.
  - ROUTER NETWORKED TO REMOTE ACCOUNTING SERVER.

3.) AAA AUTHENTICATES DISCOUNT CODES.

4.) ACCOUNTING SERVER PROCESSES TRANSACTIONAL DATA.
  - UPDATES USER PROFILE
  - SYNCS WITH APPLICATION SERVER

5.) USER PROFILE IS HOSTED ON APPLICATION SERVER.

6.) APPLICATION SERVER ORGANIZES ACCOUNT DATA AND SYNCHRONIZES WITH NETWORK AWARE APPLICATION ON HANDSET.

7.) HANDSET APPLICATION CACHES UPDATED PROFILE WITHIN NETWORK AWARE APPLICATION.

FIG. 1

HANDSET APPLICATION

FLASH
J2ME
BREW

APPLICATION SERVER

USER PROFILE

USER PROFILE

ACCOUNTING SERVER

AAA SERVER

MGMT SERVER

POS KIOSK

POS TERMINALS

1.) POS TERMINALS NETWORKED TO CENTRALIZED MGMT SERVER.

2.) MGMT SERVER NETWORKED TO ROUTER.
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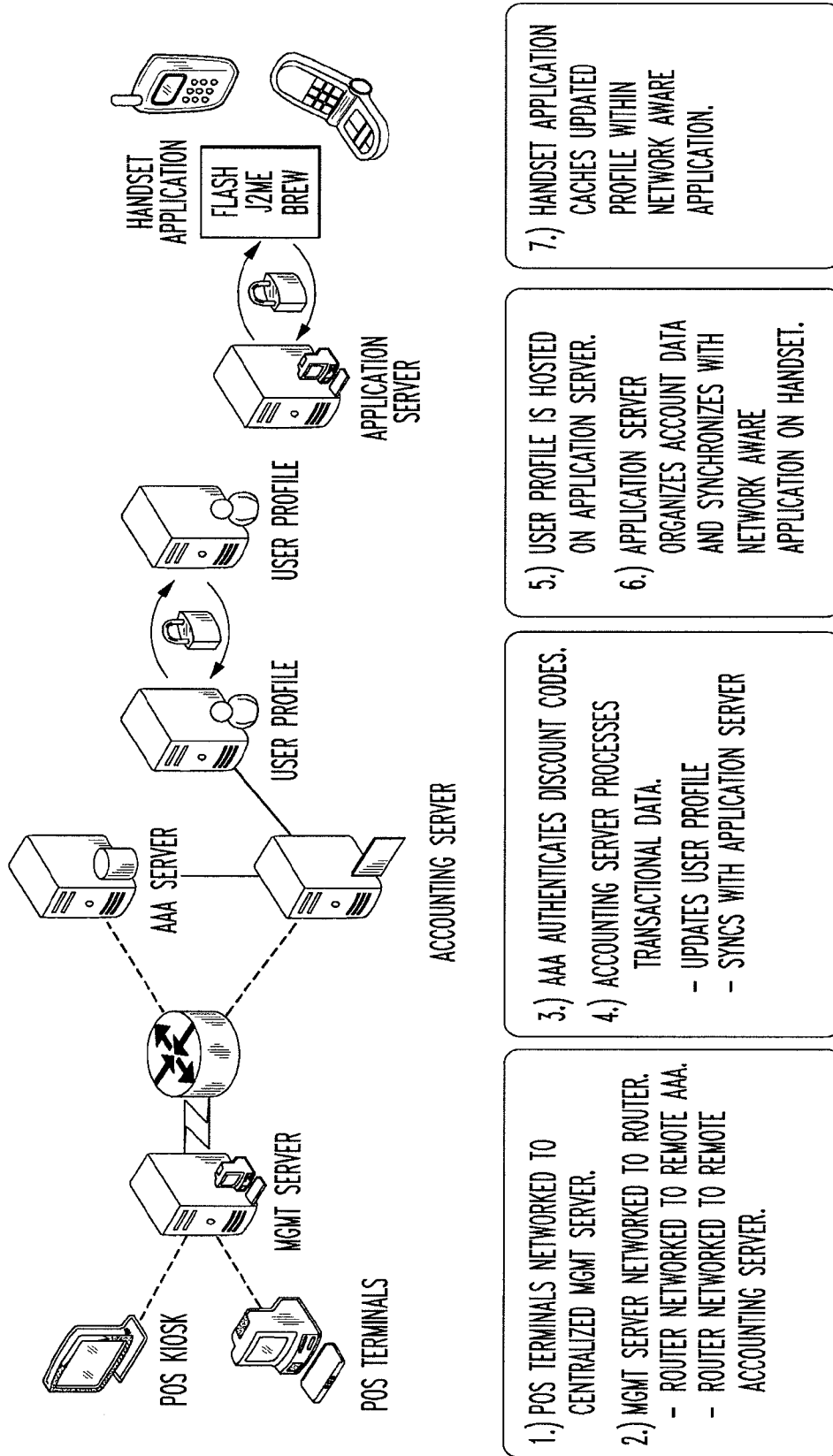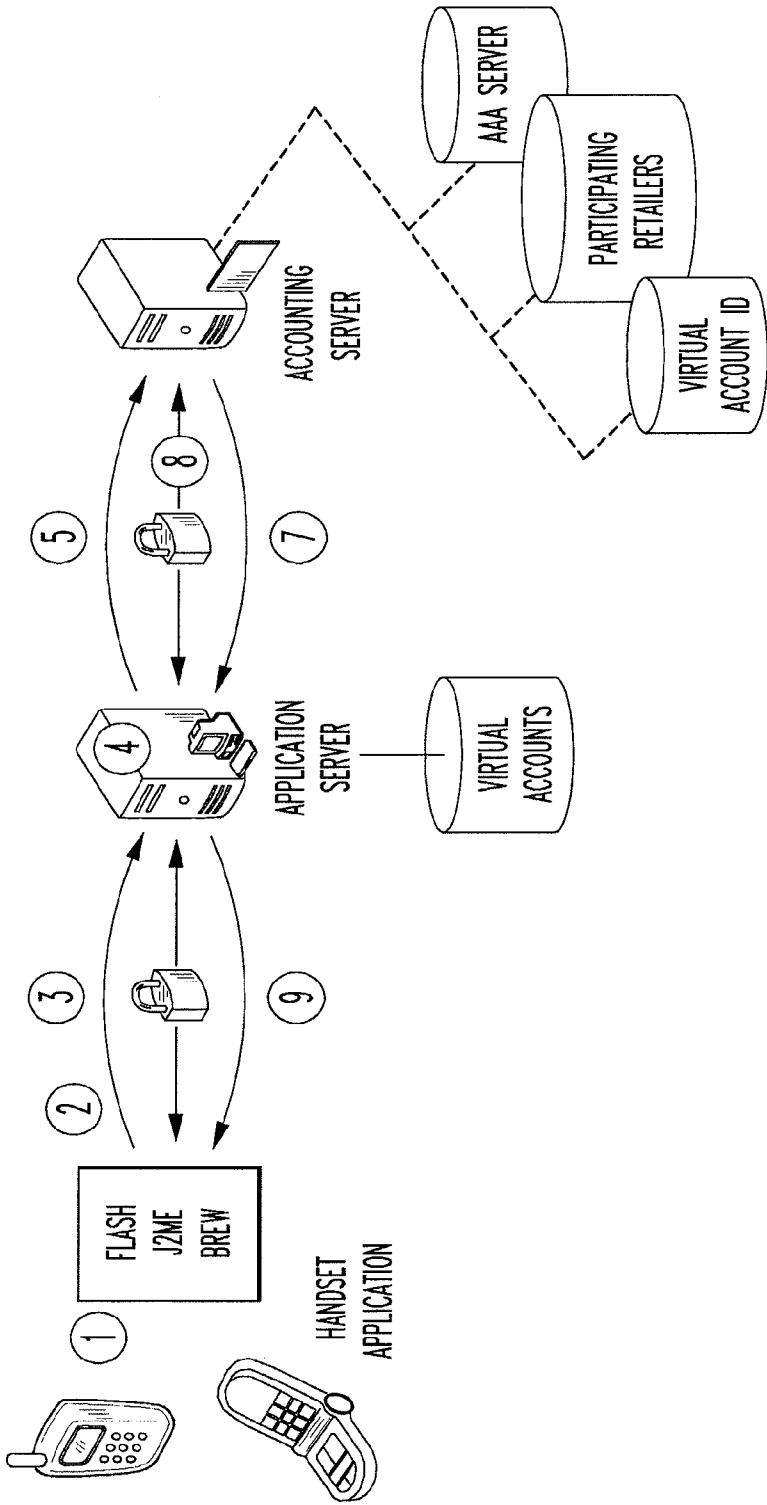7.) HANDSET APPLICATION CACHES UPDATED PROFILE WITHIN NETWORK AWARE APPLICATION.

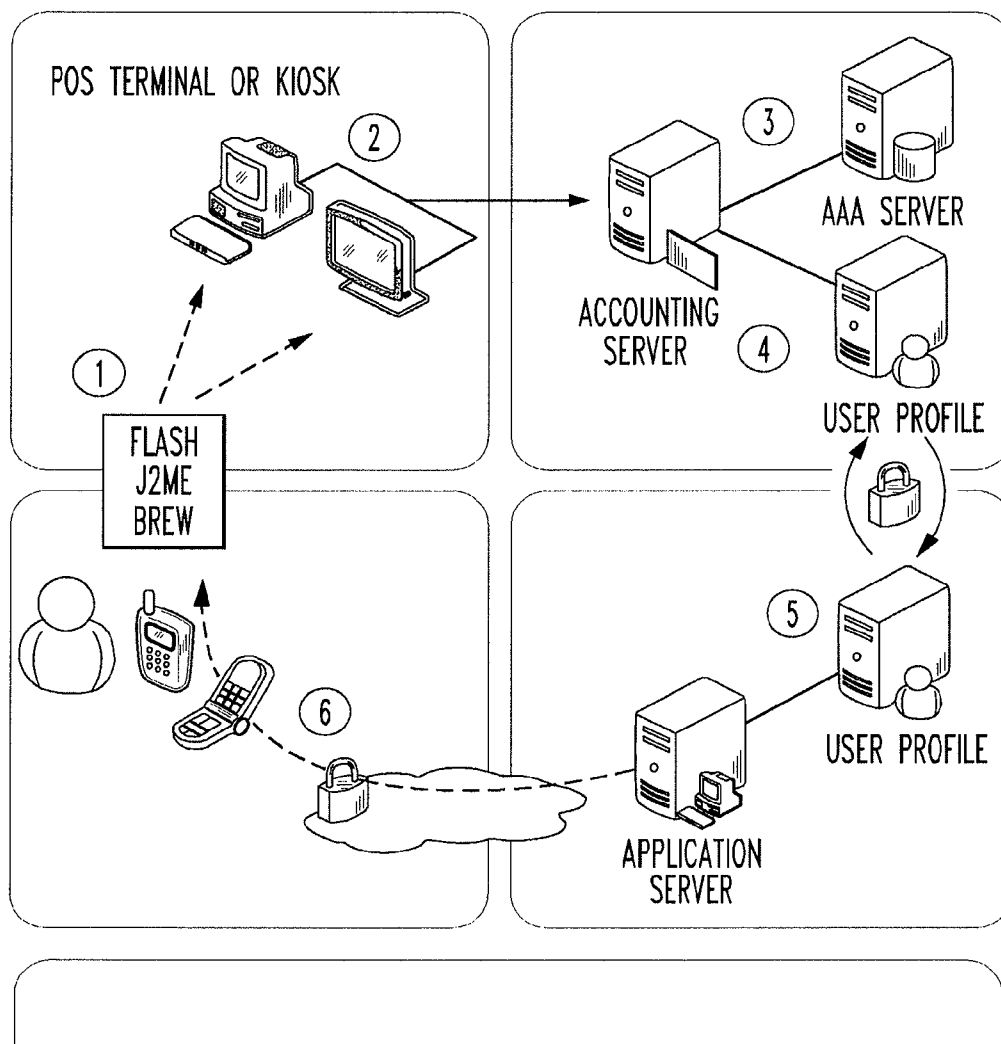*FIG. 2A*

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Registering New Account

When an account is being assigned for the first time, the downloaded application must establish connectivity with Accounting Server to capture and pass device data. The Application Server pushes data the Accounting server to see if an account exists, and if not, prompts to create new account and Virtual Account ID. A link is established between the Virtual Account on the Application Server, and the Virtual Account ID on the Accounting Server. The Virtual Account ID is a transactional account used solely for financial account mgmt functions. The Accounting Server will push data back to Applications Server so they can be viewed by the device application after transactions, and account updates.

1. User downloads application and registers for new account.

2. User chooses username and/ or password, and clicks "Submit".

3. Application sends customer data and device data to Application Server.

4. Application Server receives handset data, MDN/MIN, and users chosen log-in information.

   4.1 Application Server performs profile look up on Accounting Server.

   4.2 If return is negative, then account is created.

5. Application Server sends all account data to Accounting Server.

6. Accounting Server creates new encrypted Virtual Account ID profile:

   6.1. Create Virtual Account ID based from Virtual Account data

   6.2. Query and pull from database of latest participating retailers.

   6.3 Uses MDN + Algorithm to create set or starter Discount Codes in account.

7. Accounting Server sends new account ID to Application Server.

8. Application Server Syncs with Accounting Server

9. User views new account with starting balance and offers via device.
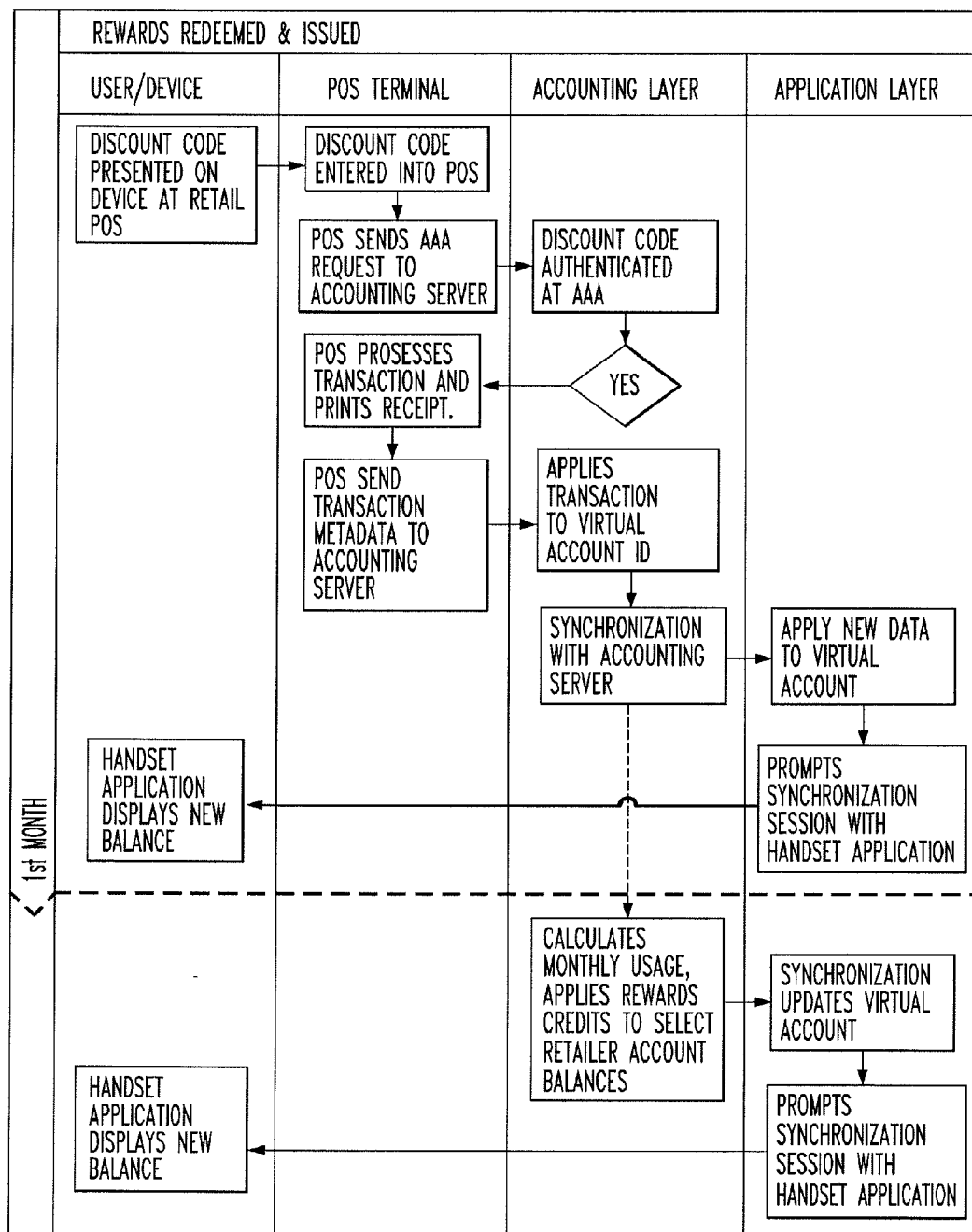
FIG. 2B

FIG. 3A

POS TERMINAL OR KIOSK

②

①

FLASH
J2ME
BREW

③

AAA SERVER

ACCOUNTING
SERVER   ④

USER PROFILE

⑤

USER PROFILE

⑥

APPLICATION
SERVER

FIG. 3B

Redeeming Offer at POS

1. Handset presents discount code at POS.
2. Discount Code entered into POS.
3. POS authenticates Discount Code at Accounting Server & AAA:
    a.   Accounting Server replies ACK.
    b.   POS Terminal completes transaction, send all data to Accounting Server:
        i. Transaction Type: Mobile Rewards
        i. Discount Code
        ii. Retailer ID
        iii. Transaction dollar amount
        iv. Timestamp
4. Accounting Server processes transaction and updates profile:
    a.   Reverse Discount Code to determine Virtual Account ID.
    b.   Debits value of Discount Code.
    c.   Applies rewards is applicable.
    d.   Update Reporting Servers and transaction logs.
5. Accounting Server synchronizes all data to Application Server.
6. Application Server Updates Virtual Account profile:
    a. Pushes updated data to handset application.
    b. User may also pull down updates using "SYNC" button within

FIG. 4

REWARDS REDEEMED & ISSUED			
USER/DEVICE	POS TERMINAL	ACCOUNTING LAYER	APPLICATION LAYER

1st MONTH

- DISCOUNT CODE PRESENTED ON DEVICE AT RETAIL POS → DISCOUNT CODE ENTERED INTO POS
- POS SENDS AAA REQUEST TO ACCOUNTING SERVER → DISCOUNT CODE AUTHENTICATED AT AAA
- YES
- POS PROSESSES TRANSACTION AND PRINTS RECEIPT. ←
- POS SEND TRANSACTION METADATA TO ACCOUNTING SERVER → APPLIES TRANSACTION TO VIRTUAL ACCOUNT ID
- SYNCHRONIZATION WITH ACCOUNTING SERVER → APPLY NEW DATA TO VIRTUAL ACCOUNT
- HANDSET APPLICATION DISPLAYS NEW BALANCE ← PROMPTS SYNCHRONIZATION SESSION WITH HANDSET APPLICATION
- CALCULATES MONTHLY USAGE, APPLIES REWARDS CREDITS TO SELECT RETAILER ACCOUNT BALANCES → SYNCHRONIZATION UPDATES VIRTUAL ACCOUNT
- HANDSET APPLICATION DISPLAYS NEW BALANCE ← PROMPTS SYNCHRONIZATION SESSION WITH HANDSET APPLICATION

MOBILE PHONE BASED REBATE DEVICE FOR REDEMPTION AT A POINT OF SALE TERMINAL

[0001] This application is a continuation of U.S. patent application Ser. No. 14/249,761, entitled "Mobile Phone Based Rebate Device for Redemption at a Point of Sale Terminal", filed on Apr. 10, 2014; which is a continuation of U.S. patent application Ser. No. 12/003,927, entitled "Mobile Phone Based Rebate and Gift Card Aggregation", filed on Jan. 8, 2008, now U.S. Pat. No. 8,700,457; which claims priority to U.S. Provisional Application No. 60/878,094, filed Jan. 3, 3007, entitled "Mobile Phone Based Rebate and Gift Card Aggregation," which is incorporated herein by reference.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] This invention relates generally to rebate reward and/or gift card technologies. More particularly, it relates to user application based services for rebate and gift card technologies.

[0004] 2. Background of the Related Art

[0005] As more retailers add loyalty and reward programs to their CRM efforts, capturing the required additional customer data requires lengthy and intrusive questions often leading the consumer to give false information, fearful the information will be sold to 3rd parties. As mobile device saturation reaches peak numbers in the coming years, retailers know an increasing percentage of their customers carry mobile devices, but lack a way to incorporate these devices to build a trusting relationship.

[0006] Traditional programs offer discounted offers or coupons from a single source. This system and process lacks scalability, and no way to ingest mobile transactions into a master rewards program, track mobile transaction back to a mobile customer, and show valued customers specialized treatment and added value.

[0007] Ultimately, mobile customers need a single trusted service to manage multiple reward programs, and retailers need a marketing channel trusted by their mobile device customers and visibility to who is redeeming their loyalty points on a regular basis.

SUMMARY OF THE INVENTION

[0008] In accordance with the principles of the present invention, a method implements a mobile radio based rebate processing reward system. The method receives a rebate transaction identifier assigned to the radio device, the rebate transaction identifier assigned to the rebate request by the POS rebate processing system. The rebate transaction identifier is output to the remote rebate processing center. Status information for the rebate request is retrieved from the rebate processing center. Status information is synchronized with a remote application server for display on mobile radio device.

[0009] An interactive radio device-based interface for facilitating rebate processing in accordance with another aspect of the invention includes an interface operable to display a plurality of rebates for interaction by a user to redeem for a product at physical point of sale terminal. Promotion information is received from a centralized processing network, the promotion information comprising a product identifier and a plurality of rebate options for receiving an authorized rebate, at least one of the rebate options having a cash value different than another one of the alternative rebates. Promotion information is communicated to a commercial radio device. A status of the promotion based on purchases of the product is received, the status indicating a number of rebate requests for the promotion and a number of authorized rebates fulfilled for each of the rebate options for the promotion

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] Features and advantages of the present invention will become apparent to those skilled in the art from the following description with reference to the drawings, in which:

[0011] FIG. 1 shows an overview of Stored Account Value Rewards (SAVR) service architecture and platforms according to an embodiment of the invention.

[0012] FIGS. 2A and 2B are diagrams of networked components used to register a new account.

[0013] FIGS. 3A and 3B are architecture diagram showing components of the back end processing systems when transacting a discount code.

[0014] FIG. 4 is a flow diagram showing redemption process and rewards application.

DETAILED DESCRIPTION OF ILLUSTRATIVE EMBODIMENTS

[0015] The invention relates to systems and methods for implementing a virtual mobile rewards program designed to aggregate physical world retailers' loyalty and reward programs into a single account accessible and transactional from an Internet capable mobile radio device.

[0016] Stored Value Rewards (SVR) is a program that use MDN/MIN/MSISDN to register a virtual mobile rewards account to provide user with $XX in coupons, offers, and limited time deals on food, lifestyle, electronics, and entertainment direct from retailers. The program aggregates 1000+ loyalty programs into a single account accessible and transactionable from the mobile device. Coupon codes, PINs, SKUs, and barcodes are aggregated from multiple programs, recognized by participating POS terminals, stored on a secure server, and accessible from a single BREW/FLASH/J2ME application. Accounting checks & balances are managed per transaction by an accounting server, which then exchanges data with the application server, to which the application synchronizes.

[0017] In an embodiment: the POS terminal exchanges data and updates a centralized Accounting Server. Accounting Server updates an Application Server storing the Virtual Account. The Virtual Account is accessible and viewable by Mobile Application on device.

Introduction to the Stored Account Value Rewards (SAVR) Program

[0018] Point of Sale Systems (POS)—POS terminals accept rebates, PINs, SKUs, and Barcodes (Discount Codes) in a multiple of different ways, but all forms of discounts and against a transaction resolve to a numerical ID or code that requires authentication. This invention uses the single point of convergence by integrating with the POS backend processing software; thus allowing a single view to the single process in place for updating POS processing systems when new PINs, SKUs, and discount codes are added. Using this process, participating POS terminals will be prepared to recog-

nize and process new PINs and codes that will be recognized as Mobile Transactions and routed to appropriate accounting systems processing, AAA, and reporting environments.

[0019] POS systems and AAA servers are prepared to receive new Discount Codes for this mobile program by updating the scripts containing the algorithm for reversing discount codes to recognize the mobile identifier, and route to the appropriate AAA server. POS terminals will perform standard discount code look-up authentication as it would for any discount or gift card. When discount code is authenticated, the POS determines transaction as mobile transaction. The transaction is processed in its own usual fashion and per the retailers Terms and Conditions, but additionally all transactional data is copied to the centralized Accounting Server.

[0020] MDN is used as cash register locator for tax purposes.

[0021] Accounting Server—The Accounting Server is a secure centralized server that processes and stores the transactional data for each virtual account ID. This server is networked to all participating POS terminal processing systems, the AAA server, and the Application Server to which the data is synchronized and exported. The Accounting Server hosts, posts, aggregates, and manages the participating loyalty program rules, currencies, and transactional data. For each transaction at retail POS, the Accounting Server processes the transactions against the appropriate loyalty account by crediting or debiting the stored value/balance. The Accounting Server makes account metadata available for additional servers and systems to extract information real time. This server has the following functionalities:

[0022] For new accounts, when Accounting Server receives registration data, the Accounting Server creates a session and aggregates all participating retailers and starting balances, creates discount codes specific to the account, then stores them under a Virtual Account ID. Virtual Account IDs are unique identification numbers that will follow users across any mobile phone or device. Each participating retailer within the account is assigned a sub-account ID, which is tied to the Virtual Account ID. Using a series of algorithms, the discount codes resolve back to the Retailer ID, so transactions can be resolved back to the Virtual Account ID. Accounting Server stores new accounts in live environment available for POS terminal processing systems, reporting systems, and APIs for add-on management applications. All IDs are invisible to the user.

[0023] Accounting Server activates new account by applying MDN, MIN, and other data passed by the Application Server against an algorithm to create a unique ID for the account called the Virtual Account ID.

[0024] Algorithm is applied against MIN/MDN/IMSI/MSISDN to create Virtual Account ID.

[0025] Algorithm is applied against Virtual Account ID to create Retail Account IDs for each participating retailers offers within Virtual Account.

[0026] Any sub account or loyalty program added later is created against the unique ID.

[0027] Algorithm is applied against each Retailer ID to create Discount Codes stored in account.

[0028] Algorithm is added to AAA script for reversing and authenticating discount codes for POS.

[0029] Accounting server uses discount code to determine Virtual Account ID, enabling all transactional data to be routed to appropriate Virtual account copied to all reporting systems accordingly.

Discount Codes (PINs/SKUs/Barcodes)

[0030] Discount codes presented at retail POS must be traceable back to user's Virtual Account for transaction processing, reporting, gifting, rewards, and additional features. Discount codes stay with each retailer sub account allowing the value to be debited like a gift card, and credited for rewards. To achieve this, discount codes are created and assigned when Accounting Server receives initial registration data. Information sent by mobile device is used against an algorithm to create discount codes under each retailer ID. As mentioned above, the reverse algorithm is used against discount codes to determine the Virtual Account ID during a transaction; thus linking the account to the retail transaction, and enabling more data to be captured and with minimal interaction from the customer and cashier.

[0031] Application Server—Application Server hosts the environment for the Virtual Account accessed by the application. Although the Accounting Server synchronizes transactional data with the Application server, this environment is kept securely separate for security reasons.

[0032] The Application Server is designed to synchronize with multiple external environments to provide a comprehensive Virtual Account that manages different loyalty programs into a single account accessible and transactionable from the mobile device. At this application layer, the virtual account can exchange credit and debit updates with the Accounting Server in real-time, synchronize data with many additional POS terminal aggregators, synchronize profile updates and deltas with device application, and export more robust reporting data than loyalty and reward programs in place today.

[0033] Handset Application—The downloadable application serves as the viewer and dashboard to the virtual consolidation of retail reward programs. Once the user downloads and registers, users access and sync with their Virtual Account residing on the Application Server. Registered users have real-time access to participating retailers' discounted offers, and present the offers on their mobile device at retailers' POS terminals. The application manages and displays the correct balance, credits, debits, and point conversions associated with the retailer's loyalty, affinity, and frequent customer reward program.

[0034] The network aware application can be in any runtime supporting interactive menu system and a secure network connection including, but not limited to Flash, J2ME, and BREW. The application synchronizes the over a wireless data network, authenticating the user, synchronizes the Application Server to update the account profile on the mobile device.

Registering a Virtual Profile

[0035] Users must register within the application to activate a virtual account and profile. Users set up accounts similar to a new Mobile Outlook Express POP3 or Mobile Gmail account except that the POP & STMP servers are already hardcoded to point to the Application Server. Registration requires the user to provide a username/nickname/password, and can choose the frequency that the account is synchronizes automatically.

Synchronization

[0036] Act of synchronizing is similar to ActiveSync or pocket Quicken for PDAs. Once the Users login information is authenticated, account data for each participating retailers is updated.

[0037] For security reasons the handset only synchronizes with Application layer, and not directly with Accounting layer. To thwart fraud or hacking, the Application Server will have separate authentication and encryption for allowing device access vs. authenticating with Accounting Server. As the number of retailers increases, the application can sync with multiple Applications Servers to update resident account profile.

User Interface

[0038] The network aware application is menu driven allowing user to access and edit profile settings, account settings, retailers, and participating retailers. The Interface features a unique interface for easy navigation across multiple retailers, and each retailer's multiple offers.

Customization & Personalization

[0039] Not all retailer's offers appeal to all users nor will they match all lifestyle spending habits. users are offered two options to personalize their Virtual Account profile: (a) choose among pre-categorized personas identified by popular mobile industry analysts including but not limited to Road Warrior, Soccer mom, Gadget Geek, and Graduates, or (b) manually delete retailers.

[0040] To alleviate risk of users churning due to retail offer overload, using proprietary logic, accounts without usage are deleted and substituted with retailers that relate or match redemption behavior. Additionally, can delete retailers manually, and keep only they offers important to their lifestyle. Additionally, users may add retailers from a networked catalog of participating retailers, including choosing the a line item entry for submitting a program they do not see in the catalog.

Gifting

[0041] In the event a customer would like to gift the use of their discount code, the account owner can gift a 1-time use discount code to another mobile device. Transport of the gifted discount code may be SMS, IR, Bluetooth, etc. For example, customer chooses to bestow a Starbucks discount upon a friend to help reach the Starbucks monthly spending limits for additional free offers. In this case, the device application will create a 1-time discount code based on the original discount code, and encapsulate the new discount code in an SMS message. In actuality, this 1-time discount code has no limitations regarding transport, only that the discount code be presented at POS terminal. The transaction is accurately recorded against the account holder's transaction log, and displayed in profile. Retailers will now have visibility into the equivalent of customers gifting/sharing use of their gift cards.

[0042] While the invention has been described with reference to the exemplary embodiments thereof, those skilled in the art will be able to make various modifications to the described embodiments of the invention without departing from the true spirit and scope of the invention.

1-10. (canceled)

11. A method of facilitating a sales transaction with an Internet capable mobile device, comprising:
 a remote computer system receiving from a physical point of sale (POS) terminal, bar code data for purchase of a product or service, wherein the bar code data originates from the Internet capable mobile device as a bar code;

 the remote computer system processing the bar code data to determine an account identifier that identifies a given user of the Internet capable mobile device;
 the remote computer system, in response to at least the processed bar code data, communicating an authentication for the sales transaction to the physical POS terminal; and
 the remote computer system updating an account for the given user to reflect use of the bar code.

12. The method of facilitating a sales transaction with an Internet capable mobile device according to claim 11, further comprising:
 aggregating a plurality of retail discounts specifically for use by the given user.

13. The method of facilitating a sales transaction with an Internet capable mobile device according to claim 11, further comprising:
 pushing, from the remote computer system, a suggested retailer program from the account for the given user, to the Internet capable mobile device.

14. The method of facilitating a sales transaction with an Internet capable mobile device according to claim 11, further comprising:
 adding a gift value into the account for the given user.

15. The method of facilitating a sales transaction with an Internet capable mobile device according to claim 14, wherein:
 the gift value is transferred into the account for the given user of the Internet capable mobile device from a different user of a different Internet capable mobile device.

16. The method of facilitating a sales transaction with an Internet capable mobile device according to claim 11, further comprising:
 adding a loyalty reward value into the account for the given user.

17. The method of facilitating a sales transaction with an Internet capable mobile device according to claim 11, further comprising:
 the remote computer system synchronizing with multiple external computer systems to provide a consolidated, single account for the given user.

18. The method of facilitating a sales transaction with an Internet capable mobile device according to claim 17, further comprising:
 the remote computer system managing a plurality of different loyalty programs in the single account for the given user.

19. The method of facilitating a sales transaction with an Internet capable mobile device according to claim 11, further comprising:
 the account for the given user including a plurality of retailer sub accounts.

20. The method of facilitating a sales transaction with an Internet capable mobile device according to claim 19, wherein the bar code is unique to one of the plurality of retailer sub accounts.

21. The method of facilitating a sales transaction with an Internet capable mobile device according to claim 11, wherein:
 the remote computer system debits the account for the given user of the mobile device to reflect use of the bar code.

22. The method of facilitating a sales transaction with an Internet capable mobile device according to claim **11**, wherein:

the bar code comprises a redemption code that is redeemable to complete the purchase of the product or service that is a subject of the sales transaction.

23. The method of facilitating a sales transaction with an Internet capable mobile device according to claim **11**, wherein:

the bar code is issued by the remote computer system to the given user of the Internet capable mobile device at a time prior to completion of the sales transaction.

24. The method of facilitating a sales transaction with an Internet capable mobile device according to claim **11**, wherein:

the bar code has a monetary value creditable to the given user towards the purchase of the product or service that is a subject of the sales transaction.

25. The method of facilitating a sales transaction with an Internet capable mobile device according to claim **11**, wherein:

the remote computer system processes similar sales transactions on behalf of a plurality of different merchants for a plurality of different users in addition to the given user.

26. The method of facilitating a sales transaction with an Internet capable mobile device according to claim **11**, wherein:

the bar code comprises a discount code that is redeemable for applying a discount to the product or service that is a subject of the sales transaction.

* * * * *