



US 20060149626A1

(19) **United States**

(12) **Patent Application Publication**
Bennett et al.

(10) **Pub. No.: US 2006/0149626 A1**

(43) **Pub. Date: Jul. 6, 2006**

(54) **INTEGRATION OF WIC ITEMS AND
TRANSACTIONS INTO PERSONAL
SHOPPING DEVICES**

Publication Classification

(51) **Int. Cl.**
G06Q 30/00 (2006.01)

(52) **U.S. Cl.** **705/14**

(76) **Inventors: David Lawrence Bennett**, Raleigh, NC
(US); **Robert James Demick**, Raleigh,
NC (US); **David L. Johnson**, Clayton,
NC (US); **Thomas J. Prorock**, Raleigh,
NC (US); **Raymond Lee Waddell JR.**,
Raleigh, NC (US); **Long-Kim Vo**
Yates, Raleigh, NC (US)

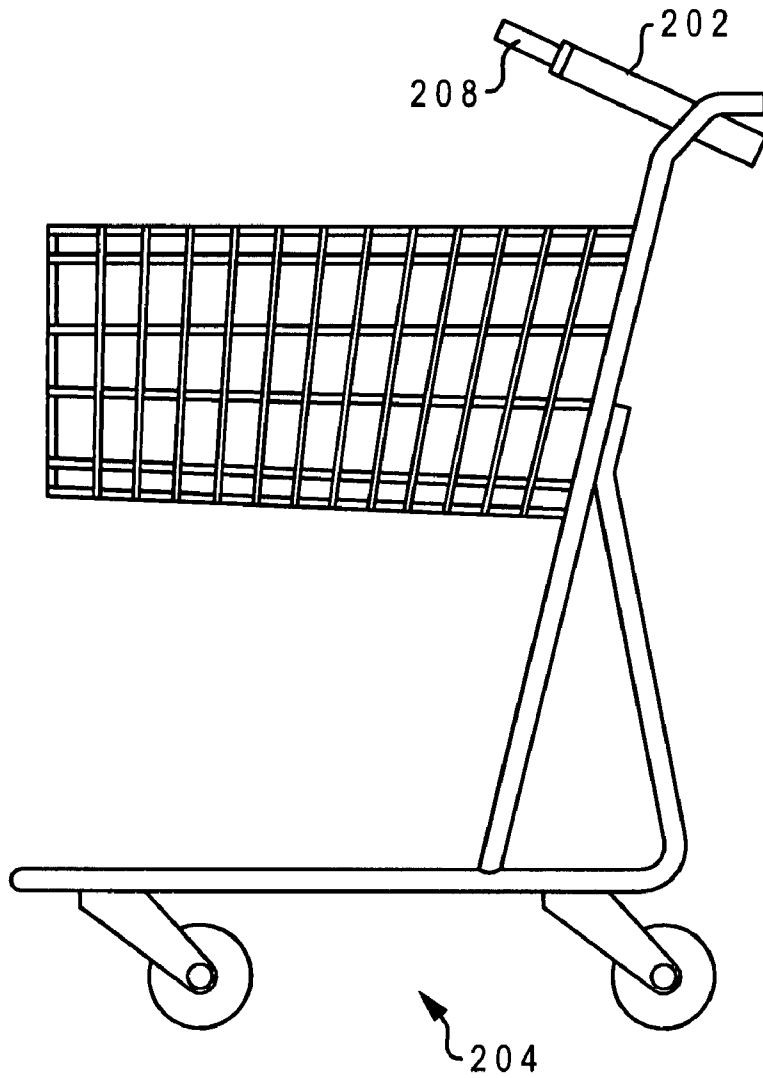
(57) **ABSTRACT**

A method, system and computer program product for providing access to government benefits is disclosed. The method comprises positioning a short-range transmitter in a predetermined product area in a store, and storing one or more marketing messages in the short-range transmitter, wherein the one or more marketing messages are associated with one or more specific products located in the predetermined product area. The one or more marketing messages are transmitted to a wireless computer, and a user is identified as a participant in a government benefits scheme. Available under a subsidy program are communicated to a user and upon purchase of an item, an analysis of benefits available under a subsidy program is provided.

Correspondence Address:
DILLON & YUDELL LLP
8911 N. CAPITAL OF TEXAS HWY.,
SUITE 2110
AUSTIN, TX 78759 (US)

(21) **Appl. No.: 11/026,781**

(22) **Filed: Dec. 30, 2004**



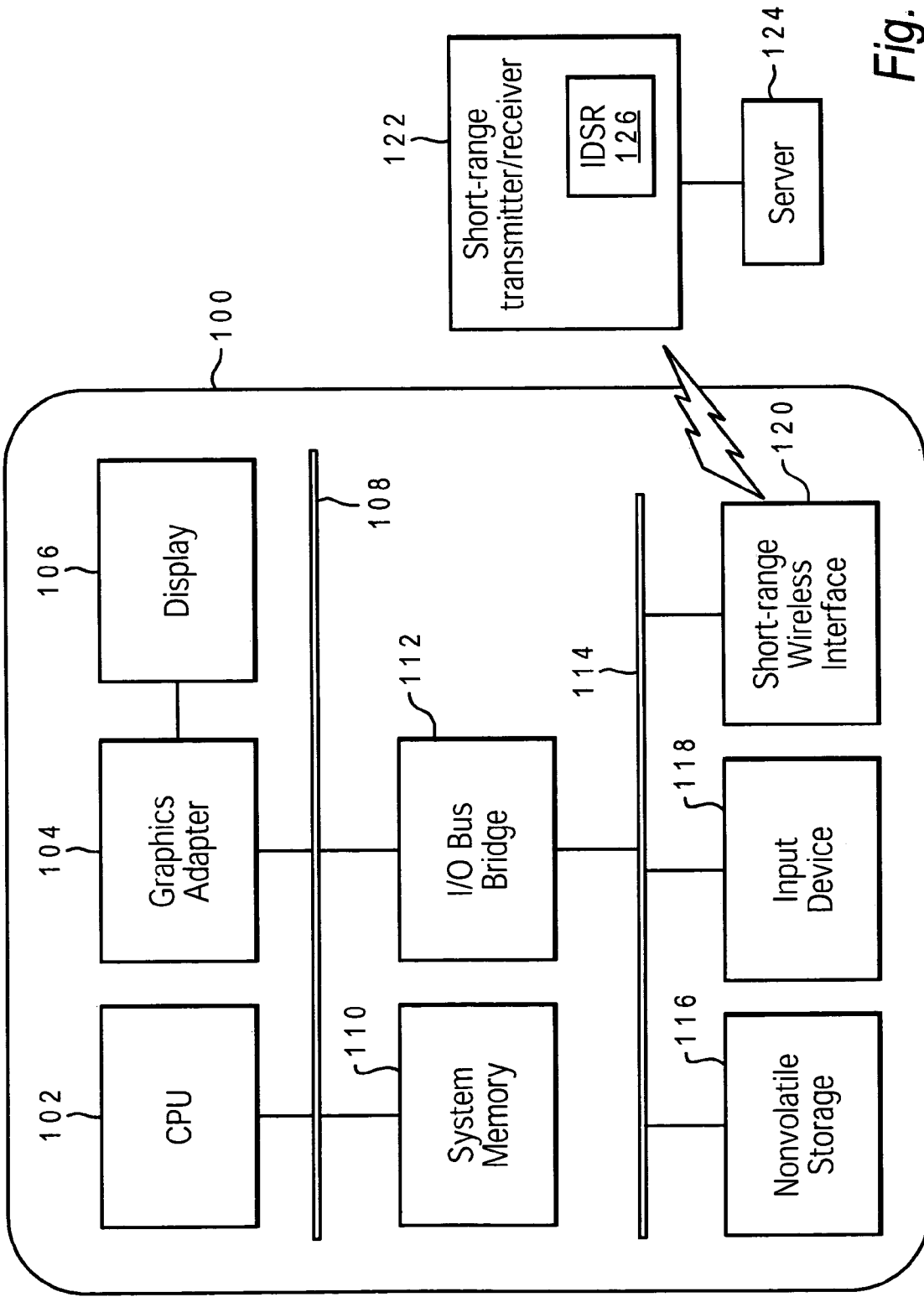


Fig. 1

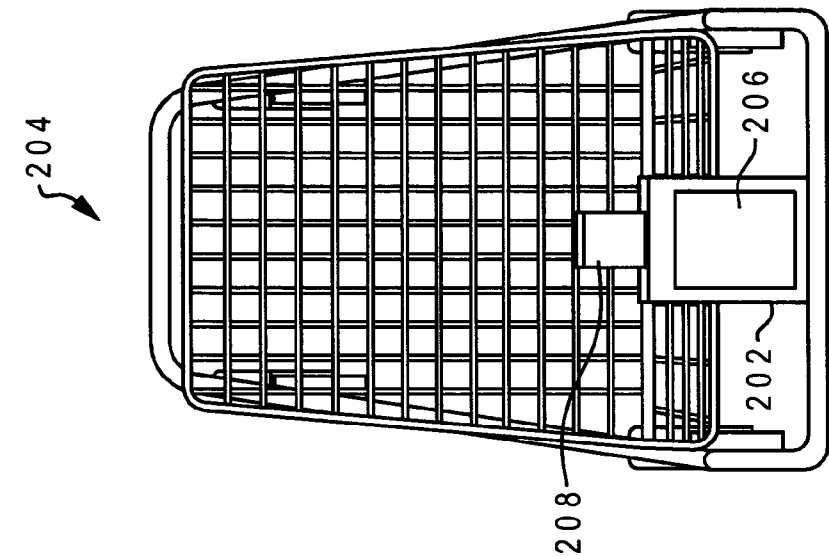


Fig. 2A

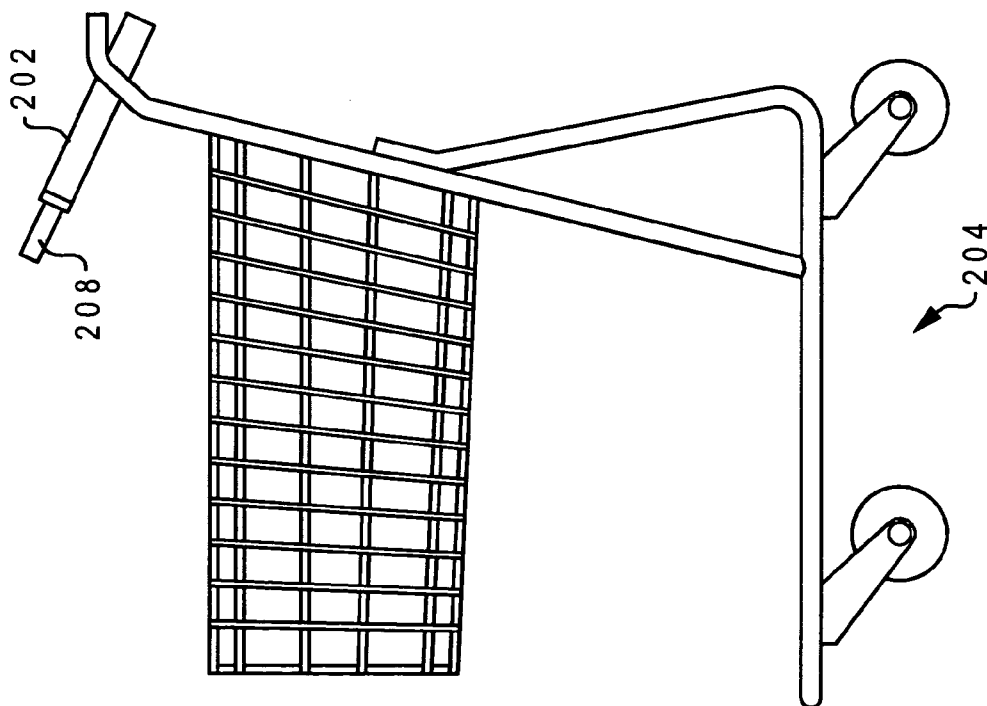


Fig. 2B

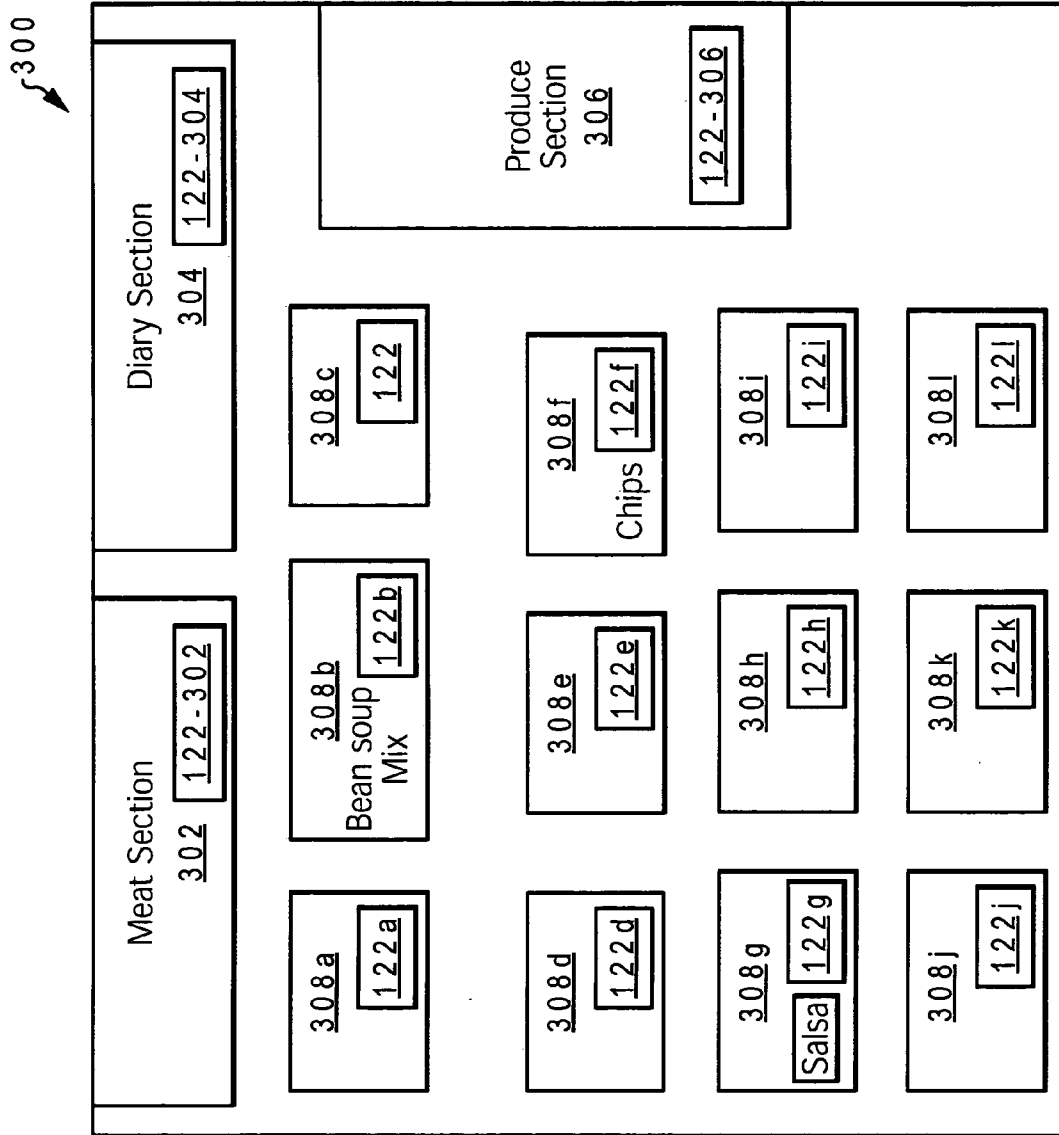


Fig. 3

400

ALL ITEMS INVENTORY VIEW				
Selected Item	Category and Subcategory	Unit of Measure, Quantity & Base Price	WIC Cost	OOP Cost
1 Gallon of A Milk	01-002	Gallon - 1 - 6.58	6.58	4.14
2 pounds of cheese	02-000	Pound - 2 - 3.58	4.16	6.16
2 cans of orange juice	04-002	Cans - 2 - 4.58	8.16	
6 pack of beer	NOT ELIGIBLE	Cans - 6 - 4.58		4.58
Totals:			14.74	10.74

418

410

408

406

404

402

Fig. 4

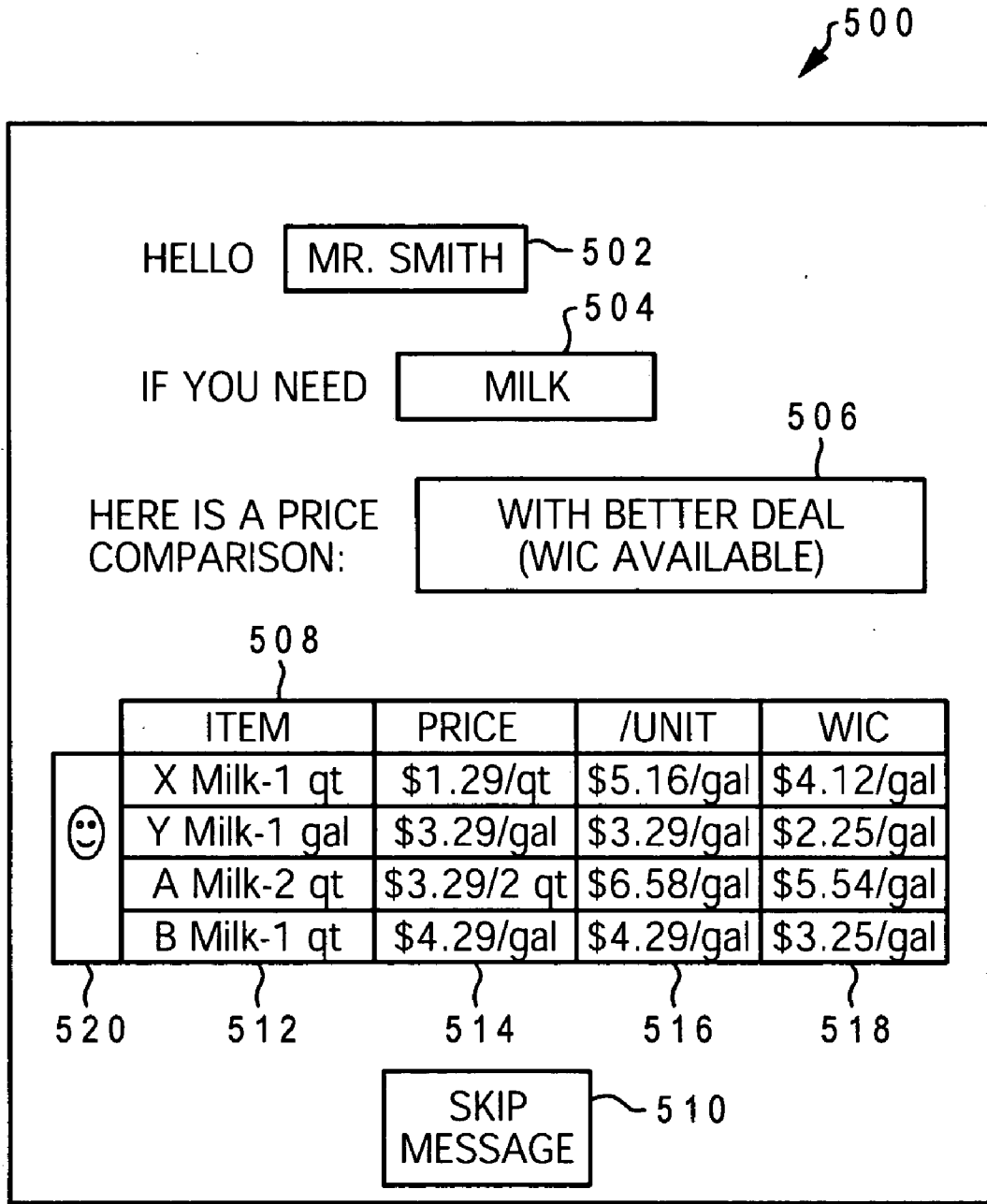



Fig. 5


600 ↗

CURRENT AVAILABLE BENEFITS VIEW			
Selected Item	Category, Subcategory and Expiration	Unit of Measure Quantity and Cost	
A brand (1 Gallon of) Milk	01-002 - 11/11/11	Gallon - 1 - 6.58	416 ↖ 
B brand (1 pound of) bread	02-000 - 11/12/12	Pound - 1 - 3.58	
Z brand (1 can of) orange juice	04-002 - 11/14/13	Can - 1 - 4.58	
X brand (1 pound of) ham	06-003 - 11/11/11	Can - 1 - 4.58	

602 ↗ 604 ↗ 606 ↗

Fig. 6

700 ↗

WIC ITEMS INVENTORY VIEW		
Selected Item	Category, Subcategory and Expiration	Unit of Measure Quantity and Cost
1 Gallon of A Milk	01-002	Gallon - 1 - 6.58  416
2 pounds of cheese	02-000	Pound - 2 - 3.58
2 cans of orange juice	04-002	Cans - 2 - 4.58

704 ↗

706 ↗

702 ↗

Fig. 7

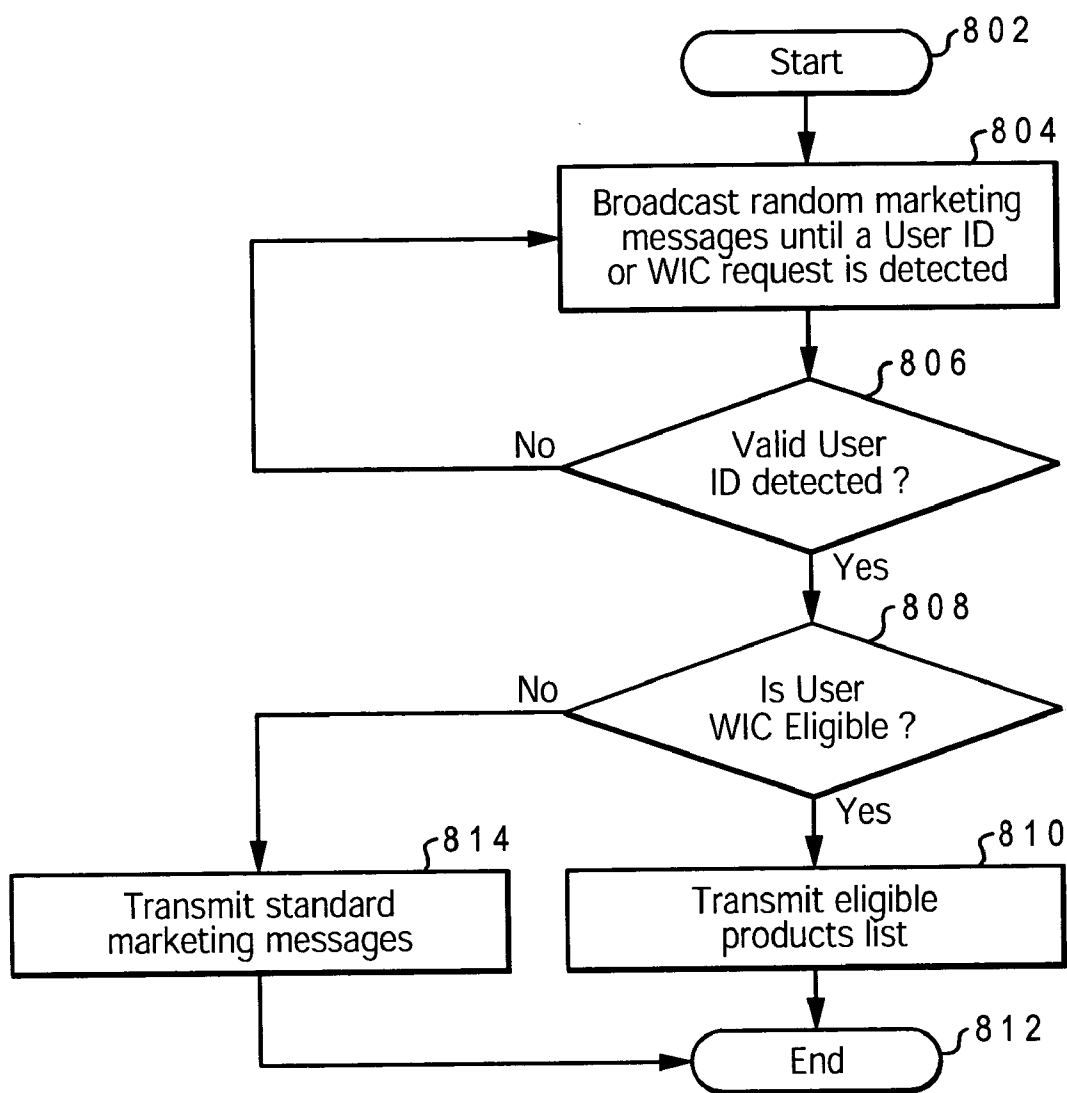


Fig. 8

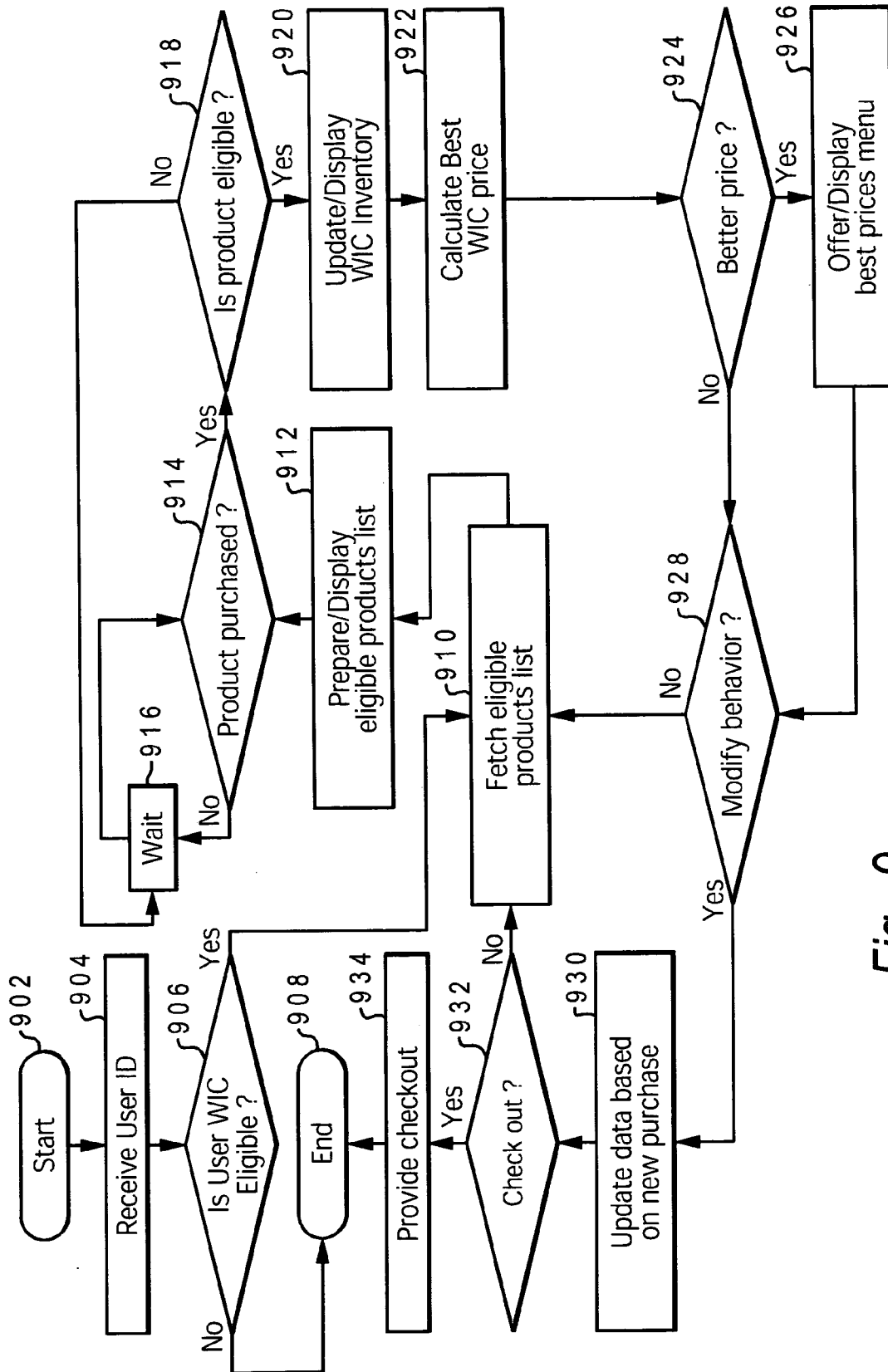


Fig. 9

Fig. 10
Fig. 10A
Fig. 10B

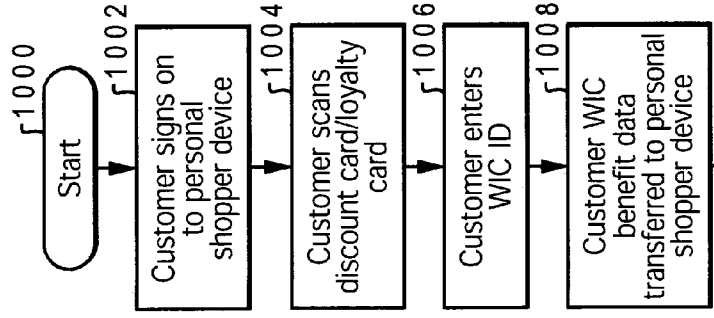
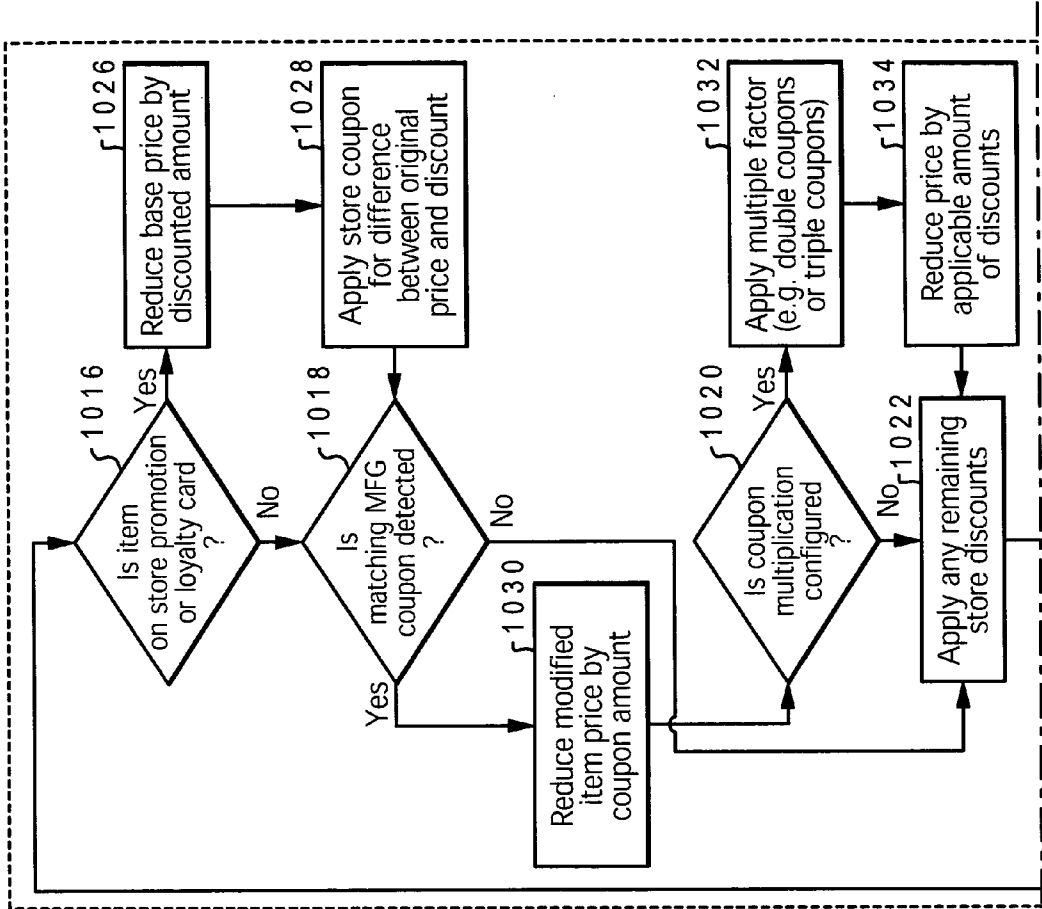


Fig. 10A



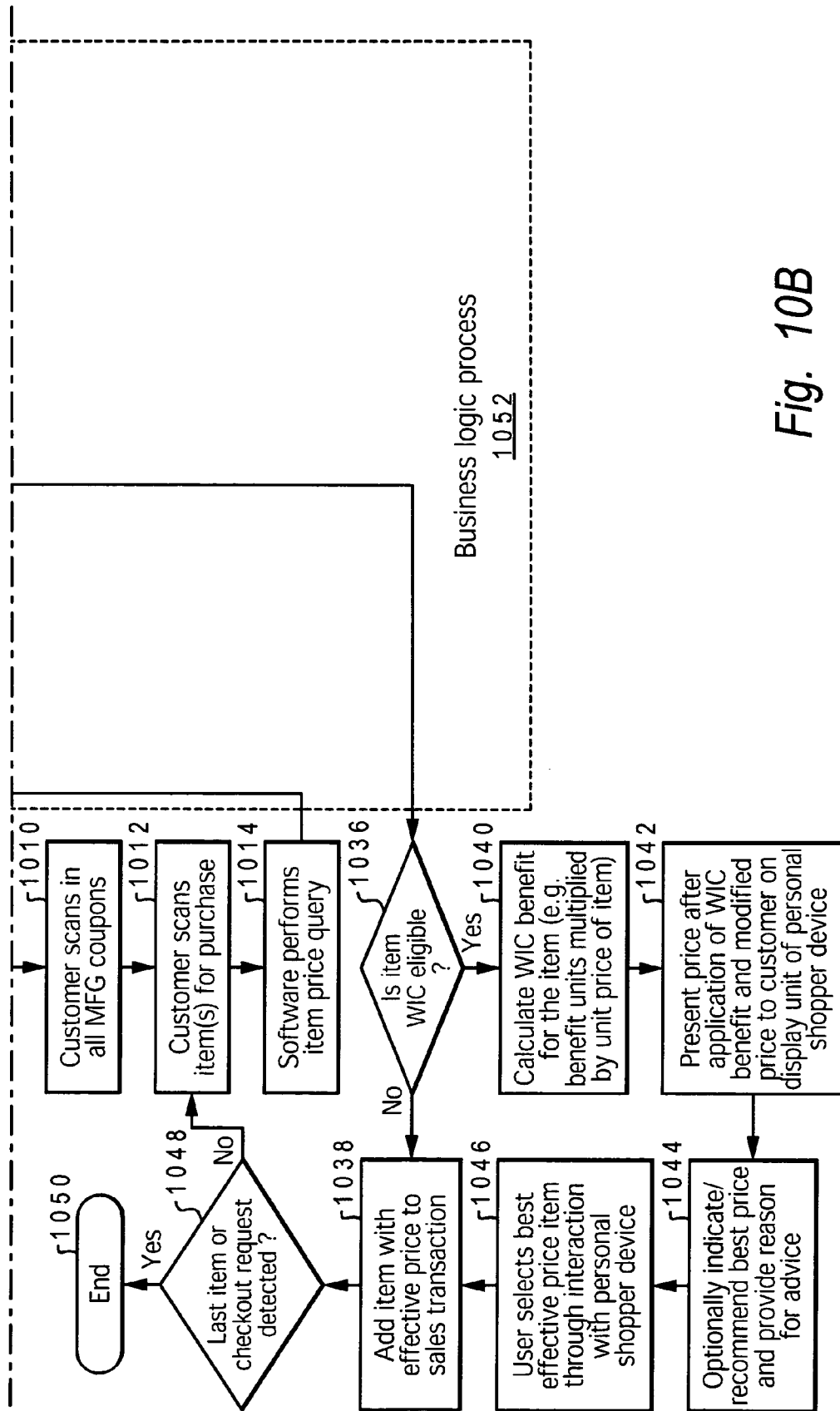
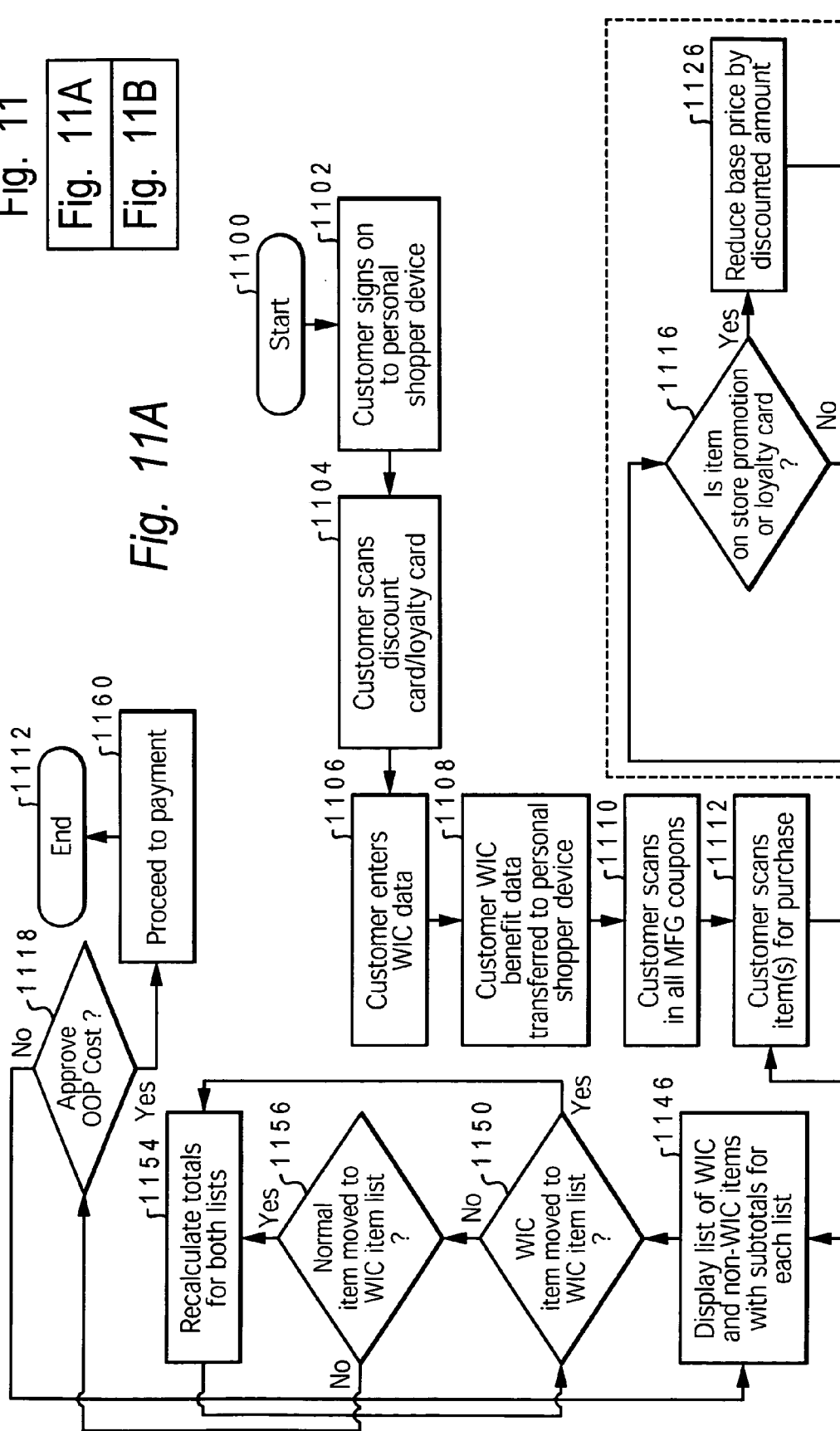


Fig. 10B

Fig. 11A
Fig. 11B



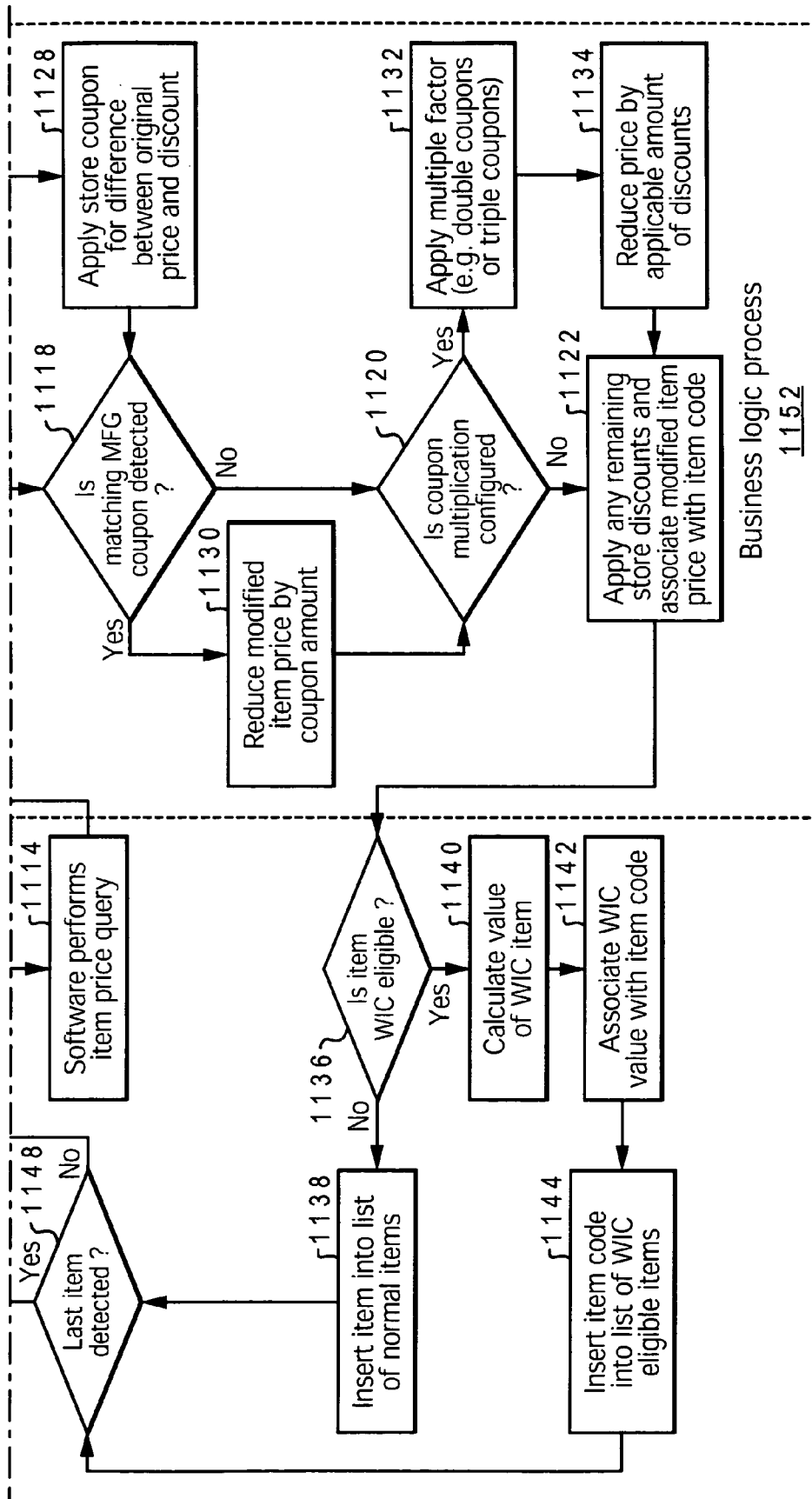


Fig. 11B

INTEGRATION OF WIC ITEMS AND TRANSACTIONS INTO PERSONAL SHOPPING DEVICES

BACKGROUND OF THE INVENTION

[0001] 1. Technical Field

[0002] The present invention relates in general to the field of computers, and in particular to wireless computers receiving signals from short-range transmitting devices. Still more particularly, the present invention relates to a method and system for providing access to government benefits by locating, detecting, prompting purchase of, and monitoring eligible Women, Infants, and Children (“WIC”) items in a store.

[0003] 2. Description of the Related Art

[0004] The United States Department of Agriculture administers a special supplemental nutrition program for women, infants and children, commonly referred to as “WIC”. The WIC program targets the low-income, nutritionally at risk population. In particular, the WIC program may assist pregnant women, infants up to their first birthday and children up to their fifth birthday. The WIC program provides many benefits to such women, infants and children, such as supplemental nutritious foods, nutrition education and counseling at WIC clinics and screening and referrals to other health, welfare and social services. The WIC program currently serves approximately 3.82 million children, 1.95 million infants and 1.86 million women at a cost of approximately 4.7 billion dollars.

[0005] Currently, WIC participants may receive checks or vouchers to purchase specific foods each month that are designed to supplement their diets. The foods provided are high in one or more of the following nutrients: protein, calcium, iron and vitamins A and C. These are the nutrients frequently lacking in the diets of the program’s target population. Different food packages are provided for different categories of participants.

[0006] The WIC foods in a food package that are available to be purchased by a particular WIC participant may not be easily identified in a grocery store. Some of these WIC items may be identified, such as by a sticker with the label “WIC authorized”. However, these stickers may not be self-evident. For example, the WIC eligible items, along with their WIC eligible labels, may be stocked in high or low positions on a shelf and hence may not be easily identified. Furthermore, not all of the WIC eligible items may be marked.

[0007] After the WIC participant placed the eligible WIC items that could be located in the grocery cart, the WIC participant may hand the cashier a paper voucher to purchase the items. There are various problems with using paper vouchers to purchase WIC items. For example, the cashier may assume incorrectly that the items purchased with the voucher were all eligible WIC items. Furthermore, using the paper voucher to purchase WIC items may result in long waits by retailers for reimbursement. Furthermore, the WIC participant may be uncomfortable to hand the cashier a WIC paper voucher due to the stigma associated with receiving food for free from a government program. Finally, users have traditionally experienced confusion in tracking the most efficient use of their benefits from a price-benefit perspective. Additionally, conventional solu-

tions lead to voided transactions (e.g. for lack of funds or benefits), because the user has limited ability to predict total real prices before a transaction is complete.

[0008] Consequently, the U.S. Department of Agriculture in 2002 promulgated a program, referred to as the Electronic Benefits Transfer (“EBT”) program, designed to replace the time-consuming and error-prone paper voucher system that was costly to administer, often uncomfortable for participants to use, and could result in long waits by retailers for reimbursement. Pilot programs for implementing the EBT program are now occurring across the country.

[0009] However, there are no currently available mobile shopping user interface systems that implement the WIC-EBT standard in a manner that is adequate for assisting the WIC participant in locating their WIC eligible items in the store and completing the purchase most beneficial to the participant.

[0010] This is especially true at the actual time of the purchase, such as in a grocery store or similar retail establishment. The prior art is inadequate to target the WIC-buying audience and facilitate their transactions. What is needed is a system, method and computer program product for providing access to government benefits by locating, detecting, prompting purchase of, and monitoring eligible Women, Infants, and Children (“WIC”) items in a store.

SUMMARY OF THE INVENTION

[0011] A method, system and computer program product for providing access to government benefits is disclosed. The method comprises positioning a short-range transmitter in a predetermined product area in a store, and storing one or more marketing messages in the short-range transmitter, wherein the one or more marketing messages are associated with one or more specific products located in the predetermined product area. The one or more marketing messages are transmitted to a wireless computer, and a user is identified as a participant in a government benefits scheme. Benefits available under a subsidy program are communicated to a user and upon purchase of an item, an analysis of benefits available under a subsidy program is provided.

[0012] The above, as well as additional purposes, features, and advantages of the present invention will become apparent in the following detailed written description.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] The novel features believed characteristic of the invention are set forth in the appended claims. The invention itself, however, as well as a preferred mode of use, further objects and advantages thereof, will best be understood by reference to the following detailed descriptions of an illustrative embodiment when read in conjunction with the accompanying drawings, wherein:

[0014] **FIG. 1** illustrates an exemplary computer system in which the present invention can be implemented, either as a wireless device for receiving a marketing message, a transmitter/receiver for communicating with the wireless device, and/or as a server that exchanges data with the wireless device via the transmitter/receiver;

[0015] **FIGS. 2A and 2B** depict an exemplary environment in which the wireless device is mounted to a shopping cart in a store;

[0016] FIG. 3 is an exemplary store plan layout in which the present invention may be implemented;

[0017] FIG. 4 illustrates a graphical user interface that correlates items that have been previously selected by a shopper with associated costs and available government benefits;

[0018] FIG. 5 depicts an exemplary Graphical User Interface (GUI) on the wireless device offering a price comparison based on available benefits to the shopper;

[0019] FIG. 6 illustrates an exemplary Graphical User Interface (GUI) on the wireless device offering an inventory of available benefits to the shopper;

[0020] FIG. 7 depicts an exemplary Graphical User Interface (GUI) on the wireless device for tracking an inventory of benefits currently being used by the shopper;

[0021] FIG. 8 is a flow chart of steps taken in a preferred embodiment of the present invention to transmitted information on available benefits to a wireless unit;

[0022] FIG. 9 is a flow chart of steps taken in a preferred embodiment of the present invention to provide government benefits and behavior modification during a shopping session;

[0023] FIG. 10 is a flow chart of steps taken in a preferred embodiment of the present invention to provide government benefits using a best-price function during a shopping session; and

[0024] FIG. 11 is a flow chart of steps taken in a preferred embodiment of the present invention to provide government benefits using an out-of-pocket cost function during a shopping session.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0025] Although the present invention is described with reference to the WIC program, as described above, it is noted that the principles of the present invention may be applied to any government benefit service program or other nongovernmental benefit programs. It is further noted that embodiments applying the principles of the present invention to other government benefit service programs and nongovernmental benefit programs would fall within the scope of the present invention. While the present invention is described with respect to a portable personal shopping device, one skilled in the art will realize that the invention may also be practiced with respect to fixed point of sale equipment without departing from the spirit and scope of the invention.

[0026] With reference now to FIG. 1, there is depicted a block diagram of an exemplary data processing system in which a preferred embodiment of the present invention may be implemented. Data processing system 100 includes a central processing unit (CPU) 102, which is connected to a system bus 108. In the exemplary embodiment, data processing system 100 includes a graphics adapter 104 also connected to system bus 108, for providing user interface information to a display 106.

[0027] Also connected to system bus 108 are a system memory 110 and an input/output (I/O) bus bridge 112. I/O bus bridge 112 couples an I/O bus 114 to system bus 108,

relaying and/or transforming data transactions from one bus to the other. Peripheral devices such as nonvolatile storage 116, which may be a hard disk drive, and input device 118, which may include a conventional mouse, a trackball, or the like, as well as a bar code or similar reader or a card reader or other similar device, is connected to I/O bus 114. Data processing system 100 will perform the method of the present invention using software, stored in memory system 110 and executed on CPU 102. The construction and use of software structures is well understood by those skilled in the relevant arts.

[0028] Data processing system 100 also includes a wireless interface 120. Wireless interface 120 is an interface that permits data processing system 100 to wirelessly communicate, preferably via a line-of-sight carrier signal such as a low-power infrared (IR) wave, with another data processing system, such as a short-range transmitter/receiver system 122, which also communicates with a server 124. Note that in a preferred embodiment, all communication is tuned down to a low-power level IR, such that there is only line-of-sight communication, such that no wireless communication occurs from reflected or other "bleed over" signals.

[0029] Short-range transmitter/receiver 122 may also include an IDentification Signal Receiver (IDSR) 126. IDSR 126 is a logic (hardware and/or software) that receives and processes an identification signal from a wireless computer such as a Personal Shopping Device (PSD).

[0030] In a preferred embodiment, the features shown for data processing system 100 are used by the PSD, while the short-range transmitter/receiver 122 uses all features shown for data processing system 100 except for the graphics adapter 104 and display 106, and the server 124 has all features shown for data processing system 100 except for the short-range wireless interface, since server 124 and short-range transmitter/receiver 122 preferably are able to communicate across long distances.

[0031] The exemplary embodiment shown in FIG. 1 is provided solely for the purposes of explaining the invention. Those skilled in the art will recognize that numerous variations are possible, both in form and function. For instance, data processing system 100 might also include a compact disk read-only memory (CD-ROM) or digital versatile disk (DVD) drive, a sound card and audio speakers, and numerous other optional components. All such variations are believed to be within the spirit and scope of the present invention.

[0032] Referring now to FIGS. 2A-2B, an exemplary use of data processing system 100 is shown. Data processing system 100 is depicted as a Personal Shopping Device (PSD) 202, which is attached to a shopping cart 204, preferably in a manner that is semi-fixed (i.e., requiring tools to remove PSD 202 from shopping cart 204, in order to prevent the theft of PSD 202). As seen in the top view of FIG. 2B, PSD 202 has an active viewing screen 206, which displays a Graphical User Interface (GUI) for displaying data, as well as for receiving inputs (preferably via a touch-screen capability) into PSD 202.

[0033] An exemplary use of PSD 202 may be in a retail establishment. As a shopper places items into shopping cart 204, the shopper scans the product using a bar code reader/magnetic card/smartcard reader module 208, which reads a

Universal Product Code (UPC) bar code from a product selected by the shopper and records the product in PSD **202**. Bar code reader/magnetic card/smartcard reader module **208** is also capable of reading a magnetic identification card for the purpose of identifying a user as a recipient of government benefits. In addition to bar code, magnetic cards, and smartcards, some embodiments of bar code reader/magnetic card/smartcard reader module **208** may be configured to read other forms of non-volatile memory devices, such as compact flash, memory keys, or memory sticks. The PSD **202** stores all items that have been scanned and placed in the shopping cart **204** into a list. When the customer checks out, the checker simply downloads the list (with prices) to conclude a shopping transaction.

[**0034**] Referring now to **FIG. 3**, there is illustrated an exemplary environment in which the present invention may be utilized. Store plan **300** depicts an arrangement of a retail store having multiple pre-determined product areas **308**. Within each product area **308** is a short-range transmitter/receiver **122**. Each short-range transmitter/receiver **122** preferably uses a low-power infrared (IR) carrier signal, such that communication with a short-range transmitter/receiver **122** is only available within the associated pre-determined product area **308** via line-of-sight, and not via reflected or other bleed-over signals. For exemplary purposes, note that store plan **300** may include a meat section **302**, a dairy section **304**, and a produce section **306**, each section also being a pre-determined product area having a short-range transmitter/receiver **122**. Each short-range transceiver **122** communicates with server **124** to retrieve shopping information and government benefits information in the form of marketing messages related to products available both throughout the store and in the vicinity of the short-range transceiver.

[**0035**] While the invention is explained with respect to an infrastructure involving short-range transmitter devices as depicted in **FIG. 3**, one skilled in the art will quickly realize that the invention is capable of being practiced in different communication environments, some as simple as being based on the scanning of an item, without departing from the scope of the invention.

[**0036**] Turning now to **FIG. 4**, a Graphical User Interface (GUI) that correlates items that have been previously selected by a shopper with associated costs and available government benefits is illustrated. **FIG. 4** illustrates an all items inventory view **400** of items purchased by a user of the personal shopping device **202** without regard to whether they have been purchased using a government benefit scheme or out-of-pocket with cash. All items inventory view **400** includes for each of several items a selected item column **402**, which lists the item under consideration. Category and subcategory column **404** lists the WIC eligibility category of the selected item or its ineligible status. Base price column **406** provides a base or 'shelf price' for the selected item without government benefits, but including any applicable loyalty discounts or coupons, as well as a unit of measure and quantity.

[**0037**] WIC cost column **408**, for WIC eligible items, lists the price after any applicable WIC discount. Out-of-pocket (OOP) cost item column **410**, for items that are WIC ineligible or that the user has selected to purchase without using government benefits, lists the cost that a user will pay

out of pocket. A user can choose to purchase a WIC eligible item without WIC benefits by touching a WIC removal button **412**, which provides a user with the option to claim or refuse to claim a benefit with respect to an individual item, or can choose to transfer an item purchased out-of-pocket back to a WIC purchase by actuating WIC reinstatement button **414**. The presence of the WIC removal button **412** and WIC reinstatement button **414** allows a user to eliminate transactions for which he lacks appropriate cash or benefits without the embarrassment of having to do so at the end of a transaction.

[**0038**] Where a more favorable price (with or without benefits) on a similar WIC category items is available, better price button **416** is made available in all items inventory view **400**. All items inventory view **400** additionally includes a totals line **418** with a total for WIC cost column **408** and a total for out-of-pocket cost column **410** for the inventory of items purchased.

[**0039**] Referring now to **FIG. 5**, an exemplary Graphical User Interface (GUI) on the wireless device offering a price comparison based on benefits available to the shopper is depicted. The depicted graphical user interface includes a price comparison view **500**, which would be activated by actuating better price button **416**. Price comparison view **500** is a means for providing behavior modification instructions to a user.

[**0040**] Price comparison view **500** includes an address line **502** for identifying a user, an item line **504** for identifying the item subject to price comparison, a notice line **506** for informing the user that a lower effective price is available through the WIC program on the same item or a comparable item, a price comparison box **508** for comparing the various prices available and a skip message box **510**. Alternatively, notice line **506** could be used to provide a nutritional comparison or instruction message. Within price comparison box **508**, several different items of a particular category are listed.

[**0041**] For the example shown with respect to **FIG. 5**, the item subject to price comparison is milk. Items that will be listed in price comparison box **508** will be milk or comparable items (such as soy milk). For each item that is listed in the price comparison, an item description column **512**, which provides the identity of the listed item, is displayed. Similarly price column **514**, displays a base of an item price before application of benefits. Per unit price column **516**, which displays a price per unit, and a benefits applied price column **518**, which displays a price per unit after application of WIC benefits are displayed. Additionally, a best price indicator **520** is displayed for demonstrating to the user what the best available pricing is.

[**0042**] Turning now to **FIG. 6**, an exemplary Graphical User Interface (GUI) on a wireless device offering an inventory of benefits available to the shopper is displayed. Currently available benefits view **600** illustrates the benefits available to a user storewide. For each available item, an item description **602** identifies the item on which benefits are available. A category, subcategory and benefits expiration date column **604** provides the WIC categorization of the item and the expiration date for the available benefit. A unit of measure, quantity and cost column **606** is displayed, with relevant quantitative data. For items that are subject to competitive pricing, a better price button **416** is also displayed.

[0043] Referring now to **FIG. 7**, an exemplary Graphical User Interface (GUI) on the wireless device for tracking an inventory of benefits currently being used by the shopper is displayed. The WIC items inventory view **700**, contains an item description column **702** for each item, which includes identification data for the item. Category and subcategory column **704** provides WIC classification data, and a unit quantity of measure and cost column **706** provides the relevant quantitative data. Better price button **416** is also displayed for items subject to price comparison.

[0044] With reference now to **FIG. 8**, a flow chart of steps taken in a preferred embodiment of the present invention to transmit information on available benefits to a wireless unit is depicted. The process starts at step **802**, which will typically correspond to activation of short range transmitter/receiver **122**. The process then moves to step **804**, which depicts short range transmitter/receiver **122** broadcasting random marketing messages until a user ID or WIC ID request is detected. The process then moves to step **806**, which illustrates server **124** determining if a valid user ID is detected. If a valid user ID is not detected, then the process returns to step **804**, which is described above.

[0045] If server **124** determines that a valid user ID is detected, then the process next moves to step **808**. At step **808**, server **124** determines if the user ID detected at step **806** is WIC eligible. If, at step **808**, server **124** determines that the user ID detected in **806** is WIC eligible, then the process next moves to step **810**. At step **810**, short range transmitter/receiver receives an eligible products list from server **124** containing marketing messages regarding products and benefits available to the user ID detected in step **806**, and those marketing messages are stored on short range transmitter/receiver **122** and transmitted to personal shopping device **202**. The process then ends at step **812**.

[0046] Returning to step **808**, if it is determined that the user is not WIC eligible, then the process next moves to step **814**, which depicts short range transmitter/receiver **122**, sending standard marketing messages, not containing benefit information to personal shopping device **202** and conducting a normal shopping session, the process then ends at step **812**.

[0047] Turning now to **FIG. 9**, a flow chart of steps taken in a preferred embodiment of the present invention to provide government benefits and behavior modification during a shopping session is illustrated. The process starts at step **902**, which will typically correspond to activation of a personal shopping device. The process next moves to step **904**, which depicts personal shopping device **202**, receiving a user ID through input device **118**. A user ID can be received by input device **118**, either by scanning a card through bar code reader/magnetic card/smartcard reader module **202**, or through tactile input through a keyboard device, or through other methods, such as an RFID card.

[0048] The process next moves to step **906**, which depicts personal shopping device **202** determining if a user is WIC eligible. If personal shopping device **202** determines that a user is not WIC eligible, then the process ends at step **908**. The end of the process at step **908** will typically lead to a user engaging in shopping through other processes not involving government benefits. If personal shopping device **202** determines that the user is WIC eligible, the process next moves to step **910**. Step **910** illustrates personal shopping device utilizing short range wireless interface **120** to

communicate with short range transmitter/receiver **122** and fetch an eligible products list. The process then moves to step **912**, which depicts personal shopping device **202**, preparing and displaying an eligible products list, such as current available benefits view **600**.

[0049] The process next proceeds to step **914**. At step **914**, personal shopping device **202** determines whether a product has been purchased. If a product has not been purchased, then the process next proceeds to step **916**, which depicts personal shopping device **202** entering a waiting state. The process then returns to step **914**. If, by contrast, if personal shopping device **202** determines that a product has been purchased at step **914**, the process next proceeds to step **918**, which depicts personal shopping device **202** determining if the product purchased at step **914** is WIC eligible. If the selected product is not WIC-eligible, the process returns to step **916**. If the selected product is WIC-eligible, the process next moves to step **920**, which depicts personal shopping device **202** updating and displaying WIC items inventory view **700**, which is one form of an inventory of benefit items. The process then moves to step **922**. At step **922**, personal shopping device **202** calculates the best available WIC price.

[0050] The process next proceeds to step **924**, which depicts personal shopping device **202** determining if a lower effective price is available. If no better price is available, then the process moves to step **928**, which is discussed below. If a better price is available, then the process moves to step **926**. At step **926**, personal shopping device **202** offers and possibly displays a best prices menu, which can take the form of displaying a better price button **416** in WIC items inventory view **700**, current available benefits view **600**, or all items inventory view **400** and waiting for a user to then actuate better price button **416** to display price comparison view **500**. Alternatively, price comparison view **500** may be displayed directly without resorting to any of WIC items inventory view **700**, current available benefits view **600**, or all items inventory view **400**.

[0051] The process then moves to step **928**, which depicts personal shopping device **202** determining whether the user intends to modify behavior by reading response to best price view **500**. If no behavior modification is indicated, then the process next moves to step **910** which is described above. If behavior modification is indicated, then the process next moves to step **930**, which depicts personal shopping device **202** updating its data based on new purchase. The process then moves to step **932**, which depicts personal shopping device determining whether the user is ready to checkout. If the user is not ready to checkout, then the process returns to step **910**, which is described above. If the user is ready to checkout, then the process moves to step **934**. At step **934**, personal shopping device **202** provides checkout services. The process then ends at step **908**.

[0052] Referring now to **FIG. 10**, a flow chart of steps taken in a preferred embodiment of the present invention to provide government benefits using a best-price function during a shopping session is depicted. The process starts at step **1000**. The process then moves to step **1002**. At step **1002**, a customer signs on to a personal shopping device **202**. The process then moves to step **1004**, which depicts a customer scanning a discount card or loyalty card through bar code reader/magnetic card/smartcard reader module **208**. The process next proceeds to step **1006**, which depicts a

customer entering a WIC ID through an input device 118 such as bar code reader/magnetic card/smartcard reader module 208. The process then moves to step 1008. At step 1008, customer WIC benefit data is transferred to personal shopping device 202 from server 124 through short range transmitter 122. The process next moves to step 1010, at which a customer scans in all manufacture coupons.

[0053] The process next proceeds to step 1012, at which a customer scans an item for purchase, and then proceeds to step 1014. At step 1014, personal shopping device 202 performs an item price query. The process then moves to step 1016, which begins business logic process 1052, containing steps 1016-1034. Step 1016 depicts personal shopping device determining if the purchased item is covered under a store promotion or loyalty card program. If the product is not covered under a store promotion or a loyalty card program, then the process moves to step 1018, which depicts personal shopping device 202 determining if the product matches a manufacturer coupon. If the selected product does not match a manufacturer coupon, then the process moves to step 1022. Step 1022 depicts personal shopping device 202 applying any remaining store discounts.

[0054] Returning to step 1016, if the item purchased is subject to a store promotion or loyalty card then the process next moves to step 1026, which depicts personal shopping device reducing the base price of the selected item by a discount amount. The process next moves to step 1028. At step 1028, personal shopping device 202 applies a store coupon for the difference between the original price and the discount price. The process then returns to step 1018. At step 1018, as described above, personal shopping device 202 determines whether a manufacturer coupon matches the selected item. If a manufacturer coupon matches the selected item, then the process moves to step 1030. At step 1030, personal shopping device reduces the modified item price by the coupon amount. The process then moves to step 1020. At step 1020, personal shopping device 202 determines if the coupon is configured for multiplication. If the coupon is configured for multiplication, then the process moves to step 1032. At step 1032, personal shopping device 202 applies an applicable multiple factor such as double coupons or triple coupons. The process then moves to step 1034. At step 1034, the personal shopping device 202 reduces the price by any applicable amount of discounts. The process then moves to step 1022, which is described above.

[0055] After step 1022, the process then moves to step 1036, which depicts personal shopping device 202 determining if the item is WIC eligible. If the item is not WIC eligible, then the process moves to step 1038 which depicts personal shopping device 202 adding the item, with its effective price, to a sales transaction. The process then moves to step 1048. At step 1048, the personal shopping device 202 determines whether a last item or checkout has been detected. If a last item or checkout has not been detected, then the process moves to step 1050, which depicts performing checkout service. The process then ends at step 1052. If a last item or checkout has not been detected, then the process returns to step 1012, which is described above.

[0056] Returning to step 1036, if an item is WIC eligible, then the process moves to step 1040. At step 1040, a WIC benefit is calculated by personal shopping device for the

item. The process then moves to step 1042. At step 1042, personal shopping device presents the price after application of the WIC benefit and the modified price from business process logic 1052 to the customer in price comparison view 500 on display 106 of personal shopping device 202. The process next moves to step 1044, which depicts price comparison view 500 optionally indicating a recommended price or best price and providing a reason for that advice. The process next moves to step 1046, at which user selects the item with the best effective price from price comparison view 500 through interaction with personal shopping device 202. The process then moves to step 1038, which is described above.

[0057] FIG. 11 is a flow chart of steps taken in a preferred embodiment of the present invention to provide government benefits using an out-of-pocket cost function during a shopping session. The process starts at step 1100. The process then moves to step 1102. At step 1102, a customer signs on to a personal shopping device 202. The process then moves to step 1104, which depicts a customer scanning a discount card or loyalty card through bar code reader/magnetic card/smartcard reader module 208. The process next proceeds to step 1106, which depicts a customer entering a WIC ID through an input device 118 such as bar code reader/magnetic card/smartcard reader module 208. The process then moves to step 1108. At step 1108, customer WIC benefit data is transferred to personal shopper device 202 from server 124 through short range transmitter 122. The process next moves to step 1110, at which a customer scans in all manufacture coupons.

[0058] The process next proceeds to step 1112, at which a customer scans an item for purchase, and then proceeds to step 1114. At step 1114, personal shopping device 202 performs an item price query. The process then moves to step 1116, which begins business logic process 1152, containing steps 1116-1134. Step 1116 depicts personal shopping device 202 determining if the purchased item is covered under a store promotion or loyalty card program. If the product is not covered under a store promotion or a loyalty card program, then the process moves to step 1118, which depicts personal shopping device 202 determining if the product matches a manufacturer coupon. If the product does not match manufacturer coupon, then the process moves to step 1122. Step 1122 depicts personal shopping device 202 applying any remaining store discounts.

[0059] Returning to step 1116, if the item purchased is subject to a store promotion or loyalty card, then the process next moves to step 1126, which depicts personal shopping device 202 reducing the base price of the selected item by a discount amount. The process next moves to step 1128. At step 1128, personal shopping device 202 applies a store coupon for the difference between the original price and the discount price. The process then returns to step 1118. At step 1118, as described above, personal shopping device 202 determines whether a manufacturer coupon matches the selected item. If a manufacturer coupon matches the selected item, then the process moves to step 1130. At step 1130, personal shopping device reduces the modified item price by the coupon amount. The process then moves to step 1120, which depicts personal shopping device 202 determining if the coupon is configured for multiplication. If the coupon is configured for multiplication, then the process moves to step 1132. At step 1132, personal shopping device 202 applies an

applicable multiple factor such as double coupons or triple coupons. The process then moves to step **1134**. At step **1134**, personal shopping device **202** reduces the price by any applicable amount of discounts. The process then moves to step **1122**, which is described above.

[0060] After step **1122**, the process then moves to step **1136**, which depicts personal shopping device **202** determining if the item is WIC eligible. If the item is not WIC eligible, then the process moves to step **1138**, which depicts the personal shopping device adding the items to a normal (non-WIC) items list. The process then moves to step **1148**. At step **1148**, if the personal shopping device **202** determines that a last item or checkout has not been detected, then the process moves to step **1146**, which is described below.

[0061] Returning to step **1136**, if an item is WIC eligible, then the process moves to step **1140**. At step **1140**, the value of a WIC benefit is calculated by personal shopping device **202** for the selected item. The process then moves to step **1142**. At step **1142**, personal shopping device **202** associates the WIC value of the item with the item code. The process next moves to step **1144**, which depicts personal shopping device **1144** inserting the item code into a list of WIC-eligible items, such as WIC Items inventory view **700**. The process next moves to step **1148**. At step **1148**, if the personal shopping device **202** determines that a last item or checkout has been detected, then the process moves to step **1146**.

[0062] At step **1146**, personal shopping device **202** displays a list of WIC and non-WIC items with subtotals for each list, such as all-items inventory view **400**. The process then moves to step **1150**, which illustrates personal shopping device **202** determining whether user has moved a 'normal' (non-WIC) item to the WIC items list, such as by actuating reinstatement button **414** to move an item to WIC cost column **408**. If an item has been moved to a 'normal' (non-WIC) item list, then the process moves to step **1154**, which depicts personal shopping device **202** recalculating and displaying totals for both lists. The process then returns to step **1150**.

[0063] At step **1150**, if an item has not been moved to a 'normal' (non-WIC) item list, then the process moves to step **1156**. At step **1156**, personal shopping device **202** determines whether a WIC item has been moved to the 'normal' (non-WIC) items list, such as by actuating removal button **412** to move an item to out-of-pocket (OOP) cost item column **410**. If a WIC item has been moved to the 'normal' (non-WIC) items list, then the process moves to step **1154**, which is described above. If a WIC item has not been moved to the 'normal' (non-WIC) items list, then the process moves to step **1158**. At step **1158**, personal shopping device **202** asks a user to approve his total out of pocket expense. If the user does not approve his out of pocket expense, then the process returns to step **1146**. If the user does approve his out of pocket expense, then the process next proceeds to step **1160**, which illustrates personal shopping device **202** proceeding to payment. The process then ends at step **1162**.

[0064] While the invention has been particularly shown as described with reference to a preferred embodiment, it will be understood by those skilled in the art that various changes in form and detail may be made therein without departing from the spirit and scope of the invention. It is also important to note that although the present invention has been

described in the context of a fully functional computer system, those skilled in the art will appreciate that the mechanisms of the present invention are capable of being distributed as a program product in a variety of forms, and that the present invention applies equally regardless of the particular type of signal bearing media utilized to actually carry out the distribution. Examples of signal bearing media include, without limitation, recordable type media such as floppy disks or CD ROMs and transmission type media such as analog or digital communication links.

What is claimed is:

1. A method comprising:

positioning a short-range transmitter in a predetermined product area in a store;

storing one or more marketing messages in the short-range transmitter, wherein the one or more marketing messages are associated with one or more specific products located in the predetermined product area;

transmitting the one or more marketing messages to a computer;

identifying a user as a participant in a government benefits scheme; and

communicating benefits available under a subsidy program to a user.

2. The method of claim 1, further comprising,

upon purchase of an item, providing an analysis of benefits available under a subsidy program.

3. The method of claim 2, wherein said step of providing an analysis of benefits available under a subsidy program to a user further comprises ascertaining the value of a government benefit to the user.

4. The method of claim 2, wherein said step of providing an analysis of benefits available under a subsidy program further comprises informing a user of the out-of-pocket cost of an item with a government benefit and the out-of-pocket cost of an item without a government benefit.

5. The method of claim 2, further comprising providing behavior modification instructions to a user.

6. The method of claim 5, wherein the step of providing behavior modification instructions to a user further comprises providing nutrition instructions to a user.

7. The method of claim 2, wherein said step of providing an analysis of benefits available under a subsidy program further comprises providing the user with the option to claim or refuse to claim a benefit with respect to an individual item

8. The method of claim 2, wherein said step of providing an analysis of benefits available under a subsidy program further comprises providing the user with notice of a comparable product that is available to said user at a lower effective price.

9. A system comprising:

a short-range transmitter in a predetermined product area in a store;

a storage device for storing one or more marketing messages in the short-range transmitter, wherein the one or more marketing messages are associated with one or more specific products located in the predetermined product area;

- a transmitting device for transmitting the one or more marketing messages to a wireless computer;
- a card reader for identifying a user as a participant in a government benefits scheme; and
- a display device for communicating benefits available under a subsidy program to a user.

10. The system of claim 9, further comprising a graphical interface for, upon purchase of an item, providing an analysis of benefits available under a subsidy program.

11. The system of claim 10, wherein said graphical interface for providing an analysis of benefits available under a subsidy program to a user further comprises graphical interface constructs for ascertaining the value of a government benefit to the user.

12. The system of claim 10, wherein said graphical interface for providing an analysis of benefits available under a subsidy program further comprises graphical interface constructs for informing a user of the out-of-pocket cost of an item with a government benefit and the out-of-pocket cost of an item without a government benefit.

13. The system of claim 10, further comprising graphical interface for providing behavior modification instructions to a user.

14. The system of claim 13, wherein the means for providing behavior modification instructions to a user further comprises graphical interface for providing nutrition instructions to a user.

15. The system of claim 10, wherein said graphical interface for providing an analysis of benefits available under a subsidy program further comprises graphical interface constructs for providing the user with the option to claim or refuse to claim a benefit with respect to an individual item

16. The system of claim 10, wherein said graphical interface for providing an analysis of benefits available under a subsidy program further comprises graphical interface constructs for providing the user with notice of a comparable product that is available to said user at a lower effective price.

17. A computer program product in a computer-readable medium comprising:

- a computer-readable medium;
- instructions on the computer-readable medium for positioning a short-range transmitter in a predetermined product area in a store;
- instructions on the computer-readable medium for storing one or more marketing messages in the short-range transmitter, wherein the one or more marketing mes-

sages are associated with one or more specific products located in the predetermined product area;

instructions on the computer-readable medium for transmitting the one or more marketing messages to a wireless computer;

instructions on the computer-readable medium for identifying a user as a participant in a government benefits scheme; and

instructions on the computer-readable medium for communicating benefits available under a subsidy program to a user.

18. The computer program product of claim 17, further comprising instructions, upon purchase of an item, providing an analysis of benefits available under a subsidy program.

19. The computer program product of claim 18, wherein said instructions for providing an analysis of benefits available under a subsidy program to a user further comprises instructions on the computer-readable medium for ascertaining the value of a government benefit to the user.

20. The computer program product of claim 18, wherein said instructions for providing an analysis of benefits available under a subsidy program further comprises instructions on the computer-readable medium for informing a user of the out-of-pocket cost of an item with a government benefit and the out-of-pocket cost of an item without a government benefit.

21. The computer program product of claim 17, further comprising instructions on the computer-readable medium for providing behavior modification instructions to a user.

22. The computer program product of claim 21, wherein the instructions for providing behavior modification instructions to a user further comprises instructions on the computer-readable medium for providing nutrition instructions to a user.

23. The computer program product of claim 18, wherein said instructions for providing an analysis of benefits available under a subsidy program further comprises instructions on the computer-readable medium for providing the user with the option to claim or refuse to claim a benefit with respect to an individual item

24. The computer program product of claim 18, wherein said instructions for providing an analysis of benefits available under a subsidy program further comprises instructions on the computer-readable medium for providing the user with notice of a comparable product that is available to said user at a lower effective price.

* * * * *