METHOD AND SYSTEM FOR SELLING SUPPLEMENTAL PRODUCTS AT A POINT-OF-SALE

The present application is a continuation-in-part application of co-pending Patent Application No. 08/920,116, entitled METHOD AND SYSTEM FOR PROCESSING SUPPLEMENTARY PRODUCT SALES AT A POINT-OF-SALE TERMINAL, filed on August 26, 1997, which is a continuation-in-part of co-pending Patent Application No. 08/822,709, entitled SYSTEM AND METHOD FOR PERFORMING LOTTERY TICKET TRANSACTIONS UTILIZING POINT-OF-SALE TERMINALS, filed on March 21, 1997, each of which are incorporated herein by reference.

CROSS REFERENCE TO RELATED CO-PENDING APPLICATIONS

The present invention is related to the following United States Patent Applications co-pending herewith:

U.S. Patent Application Ser. No. 09/045,036, entitled METHOD AND APPARATUS FOR FACILITATING THE PLAY OF FRACTIONAL LOTTERY TICKETS UTILIZING POINT-OF-SALE TERMINALS in the name of Jay S. Walker et al., U.S. Patent Application Ser. No. 09/045,518, entitled METHOD AND APPARATUS FOR PROCESSING A SUPPLEMENTARY PRODUCT AT A POINT-OF-SALE TERMINAL in the name of Andrew S. Van Luchene, U.S. Patent Application Ser. No. 09/045,386, entitled METHOD AND APPARATUS FOR CONTROLLING THE PERFORMANCE OF A SUPPLEMENTARY PROCESS AT A POINT-OF-SALE TERMINAL in the name of Jay S. Walker et al., U.S. Patent Application Ser. No. 09/045,347, entitled METHOD AND APPARATUS FOR PROCESSING A SUPPLEMENTARY PRODUCT SALE AT A POINT-OF-SALE TERMINAL in the name of Dean Alderucci et al., and U.S. Patent Application Ser. No. 09/045,084, entitled METHOD AND APPARATUS FOR CONTROLLING OFFERS THAT ARE PROVIDED AT A POINT-OF-SALE TERMINAL in the name of Andrew S. Van Luchene, each filed on March 20, 1998, assigned to the assignee of the present invention and incorporated by reference herein.

FIELD OF THE INVENTION

The present invention relates generally to point-of-sale terminals and more specifically to systems and methods for handling change at point-of-sale terminals.

BACKGROUND OF THE INVENTION

Point-of-sale ("POS") terminals, such as cash registers, are used in a wide variety of businesses for performing processes such as calculating the total price of a purchase (goods or services) and calculating the amount of change due to a customer. Depending on their level of sophistication, such POS terminals may be further useful in performing related functions such as inventory management and credit card transactions. In addition, POS terminals may be used with and/or function as an offering system, providing sales offers and/or prompting operators to provide sales offers to customers performing transactions thereat. Such offering systems may be used, for example, to provide supplemental products or services to the customer, and to increase sales to the operator. Such sales offers may further function to increase the average profit per transaction recognized by the operator.

One type of offering system is described in the parent application cited above, Patent Application No. 08/920,116, entitled METHOD AND SYSTEM FOR PROCESSING SUPPLEMENTARY PRODUCT SALES AT A POINT-OF-SALE TERMINAL, filed on August 26, 1997, in the name of Walker, et al. As described therein, a customer at a POS terminal is offered an "upsell" in exchange for an amount of change due. In the referenced application, the POS terminal is operative to determine the amount of change due a customer, and an upsell that may be offered to the customer in lieu of that change due. For example, a customer purchasing a product for $1.74 and tendering $2.00 is due $0.26 in change. In operation, the offering system determines one or more upsells that may be offered to the customer in lieu of this $0.26 change. The upsell price, $0.26, thus depends on the purchase price $1.74 and the amount tendered $2.00 by the customer. The upsell itself may be selected based on many different parameters, examples including relation to goods or services purchased, and profit to the seller.

Another type of offering system is a computer-determined "suggestive sell". U.S. Patent No. 5,353,219 describes a system for suggesting items for a customer to purchase at conventional item prices.

As mentioned above, many different criteria may be used for selecting upsells to offer to customers. An offer to a customer at a fast-food restaurant, for example, may include food items, which are typically available at a small incremental cost to the store owner. Offers to customers at drug stores may include sample products, coupons, or other items appropriate for the particular store type. Precisely which upsell to offer may be chosen according to a predetermined program, or manually by a manager or other operator.

The Winn-Dixie Stores, Inc. "EVEN IT UP!" program, operated in conjunction with the Salvation Army, provides a system whereby Winn-Dixie customers can choose to divert any change due from their purchase to a donation to the Salvation Army. Funds directed into the "EVEN IT UP!" program are dispersed by the Salvation Army as food certificates for the needy. The food certificates are redeemable at Winn-Dixie stores for nutritional perishables. While noble in nature, the "EVEN IT UP!" program is severely limited in function in that it offers only one choice for use of a customer's change. That use is a charitable contribution to the Salvation Army, with no option given to the customer to use the change to his own benefit except the receipt of cash in the normal manner.

U.S. Patent Number 5,621,640 to Burke describes a point-of-sale system, including a cash register, wherein pre-established accounts are used to collect change due the customer and apportion that change to selected charities. The charities are first selected by the customer, and accounts established for each customer's selected charities. The accounts are identifiable through the use of a card issued to the customer.

When a purchase is made at a qualified point-of-sale terminal, the change due the customer is calculated, and the customer indicates whether he would prefer the change himself, or that it be donated to the pre-established charities. When the customer desires to direct the change to the charities, he places the card into a reader, and enters data such as a customer identifier which indicates the change should be directed to the charities. The point-of-sale system them functions to

automatically distribute the change to the charities through the pre-established accounts. The change may be distributed to the charities in real time, or it may be collected in accounts with other donors' change until a minimum donation amount is reached. This minimum donation amount is then transmitted to the third-party bank or charity.

U.S. Patent No. 5,302,811 to Fukatsu shows a point-of-sale system containing many automatic features for handling credit card, bank note, and coin transactions. As one feature, a customer may choose to have change due from a transaction credited to a prepaid card. Any credit collected on the prepaid card can be used to pay for transactions at the point-of-sale system. The system further provides the options of having the change deposited into a pre-established account, the account identified by a credit or cash card readable by the point-of-sale system. While providing customers alternatives to receiving change, only a single such alternative is provided, i.e. receiving a currency credit.

Generally, the distribution and handling of change is undesirable to all of the parties involved. It is an expensive burden to the seller, costing upwards of an estimated hundreds of thousands of dollars per year for some large businesses. It is undesirable for the customer. Coinage is known to carry unhealthy bacteria, and is typically perceived as having a very low value in comparison to the handling burden. Further, many banks will typically charge a significant fee for the service of counting and converting coins to credit or paper currency.

The Winn-Dixie, Burke, and Fukatsu systems are limited to providing change due in the form of a credit to a card or account. The Walker et al. system, while the most flexible and useful of the group, contemplates further developments in the area of how to effectively and usefully provide both customers and POS operators systems and methods for processing transactions and particularly for receiving and processing payments at POS terminals.

In sum, it would be highly desirable to provide systems and methods for flexibly processing transaction payments at POS terminals.

SUMMARY OF THE INVENTION

An object of the present invention is to provide a system and method enabling a customer to pre-register instructions for processing transactions at POS terminals.

Another object of the invention is to provide a system and method which enables a seller to provide supplemental goods and services to a buyer, during a transaction, in accordance with pre-registered instructions provided by the buyer.

In accordance with one aspect of the invention, there is provided a method and apparatus for processing a transaction, the method including the steps of: receiving an identifier of a customer account; determining an upsell associated with the identifier, the upsell having an upsell price; determining a purchase price for a purchase associated with the identifier; and determining an upsell credit for applying to the upsell price.

In accordance with another aspect of the invention, there is provided a method and system for processing a transaction, the method comprising the steps of: receiving an identifier of a customer account; determining an upsell associated with the identifier; determining a purchase price for a purchase associated with the identifier; and determining instructions associated with the identifier for adjusting the purchase price to provide an adjusted purchase price including a credit for the upsell.

BRIEF DESCRIPTION OF THE DRAWINGS

These and other objects, features, and advantages of the invention will become apparent to the reader upon consideration of the following detailed description of the invention, when read in conjunction with the drawing Figures, in which:

Fig. 1 is a block diagram showing a point-of-sale system in accordance with the present invention;

Fig. 2 is a block diagram showing details of the store controller of Fig. 1;

Fig. 3 is a block diagram of an exemplary embodiment of a POS register of Fig. 1;

Fig. 4 is a block diagram of an alternate embodiment of the POS register

of Fig. 1;

Fig. 5 is a table showing sample contents of the frequent shopper account database of Fig. 2;

Fig. 6 is a table showing sample contents of the selected upsell database of Fig. 2;

Fig. 7 is a table showing sample contents of the transaction database of Fig. 2;

Fig. 8 is a table showing sample contents of the purchased upsell database of Fig. 2;

Fig. 9 is an overview of an upsell registration, transaction, and delivery process in accordance with an embodiment of the invention;

Figs. 10A-B together show a flow chart showing a process of registering a frequent shopper for an upsell;

Figs. 11A-C together constitute a flow chart showing a process of executing a transaction for a frequent shopper having a registered upsell;

Fig. 12 is a flow chart showing a process of redeeming an upsell;

Fig.13 is a flow chart showing a process of converting an upsell monetary value to a service credit;

Fig. 14 is a plan view of a printed register receipt including customer data in accordance with the present invention; and

Figs.15-17 are plan views of alternate embodiments of printed register receipts including customer data in accordance with the present invention.

DETAILED DESCRIPTION OF THE INVENTION

While the parent case to Walker et al. discussed above provides various systems and methods for upsells, the present invention supplements those systems and methods with inventions for processing monies concomitant to transactions in accordance with pre-registered instructions.

In accordance with one aspect of the present invention, there is provided a system and method for enabling a customer to buy and a seller to provide upsells in accordance with pre-registered, automatically executed instructions, pursuant to transactions at POS systems. Such POS systems include, for example, the type

used in retail stores such as supermarkets and drug stores. Such instructions would typically identify the goods/services to be upsold, and directions for adjusting a purchase price to add a credit to be applied to the upsell.

While the current invention will be seen to have many different applications, for purposes of illustration it is described herein as implemented in a POS system used in a food store or supermarket. Such a supermarket is of the type wherein returning customers are encouraged to join a frequent shopper program, and identified as a participant in such a program by a frequent shopper account identifier such as an identification number. Such frequent shopper programs are well known in the art, and encourage repeat business in exchange for store-offered incentives. The terms "customer" and "shopper" are used interchangeably to indicate a buyer.

"Upsell," as used herein, means supplemental goods, typically identified through a pre-registration process, towards which a customer may make a payment during a transaction for a conventional purchase. An upsell may be "instant," in that it is purchased during the transaction, or "tiered," in that it is purchased by the accumulation of funds over more than a single transaction. As used herein, the terms "goods" and "products" are inclusive of goods and/or services.

The term "round-up amount" as used herein indicates an amount of currency which, when added to a purchase price, results in a rounding of the purchase price to a larger denomination; i.e. a rounding to a multiple of a coin or a paper currency denomination. The term "rounded price" comprises the denomination which is the sum of the purchase price and the round-up amount. The term "rounding multiple" comprises a multiple of a specified currency denomination, which may be selected as a rounded price.

The term "layaway amount" denotes a customer-identified value to be added to any purchase price, the sum of which may then optionally be rounded to a higher denomination. The term "change due" indicates the difference between the price of a purchase and the payment tendered by a purchaser which, in a conventional transaction, would be returned as change to the purchaser.

The term "adjusted price" is used to describe the purchase price as adjusted by the round-up amount (in which case it equals the rounded price), the layaway

amount, or the change due amount. The term "upsell credit" is used to describe the amount of the adjusted price to be applied towards the price of the upsell; alternatively, the round-up amount, the layaway amount, or the change due. The use of the above-described terminology is further explained with respect to the description of the various Figures set out below.

With reference now to Fig. 1, a POS system 10 includes a centralized store controller 12, interconnected in a conventional manner to POS registers 14, 16, 18, the later also known in the art as "cash registers" and "POS terminals". Many such systems 10 are commercially available and well known to those skilled in the art, including, for example systems sold by IBM, National Cash Register, and others. The interconnections between controller 12 and POS registers 14, 16, 18 include any appropriate communications path, for example a local-area network (LAN) (wired or wireless), a wireless radio frequency system, a cellular radio system, and the like. While only three POS registers are shown connected to a single store controller, many such registers may be used, and the function of the controller may be distributed amongst multiple store controllers in a straight-forward manner.

Continuing with reference to Fig. 2, store controller 12 comprises a conventional computer system as supplied with a POS system, for example an IBM RS2000® network server, or an ALPHA® network server as available from Digital Equipment Corporation, programmed to operate in accordance with the present invention. Store controller 12 is shown to include a central processing unit (CPU) 20 connected to a storage device 22 and a communications interface 24. CPU 20 comprises a conventional microprocessor of a type dependent on the selected computer system, for example an Intel PENTIUM®, DEC ALPHA® or IBM POWERPC® compatible microprocessor.

Storage device 22 comprises an appropriate arrangement of magnetic, semiconductor, and/or optical memory components, many of which are well known to those skilled in the art. Communications interface 24 is selected to be compatible with the communications medium chosen above, and would comprise, for example, a conventional LAN card to interface with a LAN network, or a conventional cellular interface to support cellular communications.

In accordance with the present invention, storage device 22 of store controller 12 is shown to store four databases, including: a frequent shopper account database 50, an upsell database 60, a transaction database 70, and a purchased upsell database 80. Further contained in storage device 22 is an upsell control program 90, in the form of executable computer software, functional to operate store controller 12 in accordance with the processes shown and described below.

With reference to Fig. 3, an exemplary embodiment of POS register 14 is shown, including a processor 31 connected to: an input device 32 such as an alpha-numeric keypad; a display device 33 such as a light-emitting diode display (LED), liquid crystal display (LCD), or video display; a printer 34; a storage device 35 containing a POS control program 36; and a communication device 37, such as a LAN card, for connecting POS register 14 to store controller 12. It will be appreciated that, while an exemplary embodiment is shown for purposes of illustrating the present invention, many different, detailed embodiments of POS registers are known to those skilled in the art.

Referring now to Fig. 4, an alternate embodiment of a POS register 40 is shown including all of the elements of POS register 14 as described above, and further connected to a coupon controller 42 for printing and distributing coupons in accordance with the present invention. Controller 42 is seen to include a processor 44 comprising a conventional processor of the type described above, connected to: a printer 45; and a storage device 46 containing an upsell coupon control program 47.

While POS registers 14 (Fig. 3) and 40 (Fig. 4) provide essentially the same functionality for purposes of implementing the present invention, the latter may provide more flexibility in operation. That is, the printer 45 of coupon controller 42 may be specially selected for the function of printing coupons or receipts pertinent to the present invention. Further, data relating to the offering and/or printing of coupons may be maintained in storage device 46, providing fast and easy access to use and update such data. The present invention contemplates the maintenance of data such as that shown in storage device 46 across multiple systems, including coupon controller 42. Further, the use of coupon printers is

well known in the art, for example as in the systems provided by Catalina Inc. for processing grocery coupons.

For purposes of illustration and explanation, the present invention has been shown with three software programs, upsell program 90 (Fig. 2), POS control program 36 (Fig. 3), and upsell coupon control program 47 (Fig. 4). In practice, the various functional aspects of the programs, which are described in detail below, can be distributed across the various systems and programs in a variety of ways, many of which will be apparent to those skilled in the art. The invention is not limited to the implementation of particular software or data on one particular system. Further, in an alternate embodiment of the invention, the functions and features of central controller 12 may be contained in one or more POS registers.

With reference now to Fig. 5, frequent shopper account database 50 is shown in table form to include, for a specified date field 52, six records 54A-54F, each record containing seven fields 56A-56G. Fields 56A-G include data identifying frequent shoppers, their selected upsells, and account credits, including: a frequent shopper number field 56A comprising a unique identifier assigned to each frequent shopper account; a name field 56B including a customer name; an address field 56C including a customer address; a registered upsell code field 56D including a code identifying a customer-selected upsell; an upsell purchase price field 56E containing the price for the customer-selected upsell; an account balance field 56F showing the balance accrued towards the selected upsell purchase price 56E on the table date 52; and an upsell instructions field 56G used to store customer-designated instructions for determining an upsell amount to be added to each purchase.

Continuing with reference to Fig. 5, upsell instructions 56G for record 54A are seen to identify a rounding multiple (RM) of $1.00, indicating that for each customer transaction, the purchase price is to be rounded up to the nearest whole dollar amount. A similar upsell instruction is contained in record 54B. Record 54C includes an upsell instruction identifying a layaway amount (L) of $2.00, indicating that a $2.00 layaway amount is to be added to a purchase price. Record 54D indicates the amount to be collected and credited towards the upsell is equal

to the amount of change due (CD) the customer. Record 54E indicates a layaway amount of $2.00 to be added to a purchase price. Record 54F contains a rounding multiple of $5.00, indicating that the purchase price is to be rounded up to the nearest whole dollar multiple of $5.00 (i.e. $5.00, $10.00, $15.00, etc...).

It will be noted that layaway amounts may be implemented with respect to tiered upsells, as per record54C where the upsell price is seen to be $5.00, and also to instant upsells, as in record 54E where the upsell will be seen to constitute frequent flyer miles which are purchased on a per-transaction basis. The difference between a layaway amount and a rounding multiple is that when a rounding multiple is used, a purchase price is rounded to a nearest multiple of the selected rounding multiple. When a layaway amount is used, the layaway amount is added to the purchase price, which may then optionally be rounded up.

Rounding multiples of $X.00 (i.e. a selected "X dollar" value, which may be a whole or partial dollar value) indicate that a purchase price is to be rounded up to the nearest multiple of $X.00 greater than the purchase price. For example, with a rounding multiple RM = $2.00, prices in the range of 0-$1.99 are rounded to $2.00; prices in the range of $2.01-3.99 are rounded to $4.00; prices in the range of $4.01-5.99 are rounded to $6.00; etc.... It will be appreciated that rounding multiples need not be limited to whole dollar amounts, but may be based on coin values (i.e. round up to the nearest $0.25 or $0.50, for example), or larger paper money denominations (i.e. $10.00, $20.00, etc...). Many other rounding schemes and formulae will be obvious to those skilled in the art.

With reference now to Fig. 6, upsell database 60 contains data identifying available upsells, and is shown to include six records 60A-60F, each record comprising three fields: an upsell code field 62A comprising a unique identifier for each available upsell and containing data corresponding to registered upsell code field 56D of frequent shopper account database 50, a description of each upsell 62B, and an upsell purchase price 62C for each upsell, this purchase price data corresponding to the data in upsell purchase price field 56E of frequent shopper account database 50.

With reference to Fig. 7, transaction database 70 includes data relevant to transactions that occur at the various POS registers 14, 16, 18. More specifically,

each entry table in transaction database 70 includes data specific to one particular transaction for a specific frequent shopper identifier. Examining header 72 of the database, the illustrated table is seen to include transaction data for a frequent shopper identifier 72A, at a particular store 72B, having a transaction number 72C assigned by POS system 10, at a specific POS register 72D, and on a particular date 72E. Based on the frequent shopper identifier #123461, this illustrated transaction is seen to correspond to "Phil Johnson," identified in record 54F of frequent shopper account database 50 (Fig. 5). Other such tables (not shown) in transaction database 70 include data for other specific transactions.

Continuing with reference to Fig. 7, for the above-identified transaction, database 70 is seen to include two records 74A-74B, each containing four fields 76A-76D relevant to a particular good purchased during the transaction identified in header 72. In particular, for each record 74A, B, there is provided an item code field 76A containing a unique identifier for a purchased item, a description field 76B containing a description of the purchased item, a price field 76C including a price for the item, and a subtotal field 76D, containing a running subtotal of item costs. A tax entry 78 includes a tax calculation reflected in the price and subtotal fields 76C, 76D, respectively. An adjusted price entry 79 includes an adjusted price, here a rounded price 79A, to be collected from the consumer (in this instance, $5.00), and a round-up amount 79B equal to the difference between rounded price 79A and the purchase price including taxes (in this instance $3.74). The upsell credit, herein round-up amount 79B, thus comprises: 5.00 – 3.74 = $1.26.

The adjusted price 79A, in this case a rounded price, is thus seen to be a function of the actual purchase price of customer-selected goods and/or services, as modified in accordance with the upsell instructions in field 56G of frequent shopper account database 50 (Fig. 5).

In the illustrated embodiment, the rounded price is calculated in accordance with the upsell instructions field 56G of record 54F (both of Fig. 5), indicating a rounding multiple of $5.00. The transaction subtotal of $3.74 is thus rounded in accordance with the $5.00 rounding multiple to the nearest multiple of $5.00 higher than the purchase price, in this instance $5.00. If, for example, a $2.00

layaway amount had instead been pre-registered, then $2.00 would have been added to the $3.74 transaction subtotal for an adjusted price of $5.74 to be charged to the customer. If, for example, 'change due' instructions had been registered in the upsell instructions, then the adjusted price would have been the payment tendered, and the upsell credit would have been set equal to the difference between the purchase price and a payment amount tendered by the purchaser.

Referring now to Fig. 8, purchased upsell database 80 includes data identifying upsells which have been paid for in their entirety and are available for delivery to/use by the customer. Purchased upsells includes those items which are actually in the possession of the customer (such as delivered goods), those items which are available for immediate use by the customer (such as earned telephone time credited to an account), and those items for which the customer is entitled to take possession.

Continuing with reference to Fig. 8, purchased upsell database 80 is seen to include four records 84A-84D, each containing four fields 86A-86D. A code number field 86A includes a code that uniquely identifies each upsell that has been fully paid for, and is generated by POS system 10 as needed for specific transactions. Active date field 86B includes the date of the transaction in which the purchase price of the upsell was met or exceeded, while transaction number field 86C includes the corresponding transaction number 72C from transaction database 70. Upsell code 86D identifies the upsell as it is similarly referenced in field 62A of upsell database 60.

Referring now to Fig. 9, an overview 900 of an upsell process implemented in accordance with the present invention is shown including a registration subprocess 900A, a transaction subprocess 900B, and a delivery or redemption subprocess 900C. In step 92 of the registration subprocess, a customer described herein as a frequent shopper registers for an upsell. The details of this registration process are shown in Figs. 10A-B.

Pursuant to transaction subprocess 900B, upon shopping at the supermarket, the customer initiates a transaction (step 94) at a POS register; for example the purchase of goods. The POS system functions to determine if the shopper is a registered frequent shopper having an upsell registered with his

frequent shopper account (step 96). If there is no upsell registered, the transaction is processed in a conventional manner (step 98). If an upsell is registered, it is processed (step 100) in association with the shopper's transaction.

Continuing with Fig. 9, a determination is made as to whether the upsell process associated with the transaction results in the purchase of that upsell (step 102); that is, has the upsell been paid for in full? If not, then any appropriate credit is applied to the upsell account (step 104). It is noted that an upsell can be paid off in several ways, including: accumulating a credit sufficient to pay the upsell purchase price; and, where an 'instant' upsell such as telephone time is being purchased, converting the upsell credit from the transaction directly to the instant goods. The transaction process highlighted here is described in greater detail with respect to Figs. 11A-C below.

In step 106 of redemption subprocess 900C it is determined if the purchased upsell is an instant upsell. If so, the goods are provided and/or the upsell credit is converted to a service credit (step 108) as described in detail with respect to Fig. 13 below. If the purchased upsell is not an instant upsell, then an appropriate redemption or delivery process is initiated (step 110) as described in further detail with respect to Fig. 12 below.

Referring now to Figs. 10A-B, upsell registration subprocess 900A of upsell process 90 (Fig. 9) is shown, wherein a frequent shopper is registered to purchase a pre-selected upsell. Upsell registration subprocess 900A is preferably executed with customer input at a courtesy desk provided by a supermarket, the courtesy desk typically utilized by supermarket personnel to provide customer services such as frequent shopper registration.

On initiating the upsell registration process (step 902), an operator such as a customer service representative receives and inputs into store controller 12 (step 904) a customer request to register for an automatic upsell. Such a request may be based, for example, on an upsell catalog or other advertising material containing information identifying various upsells available to the customer from participation in the supermarket's program.

The customer is interrogated to determine if they are a registered frequent shopper (step 906), and if they are not, the necessary frequent shopper information

is received and input into central controller 12 (step 908). The resulting frequent shopper number/identifier, generated by controller 12 is provided to the customer (step 910). A new frequent shopper entry is simultaneously created in frequent shopper account database 50, including the frequent shopper identifier stored in field 56A (step 912). The newly registered frequent shopper, as well as any preregistered frequent shoppers identified in step 906, is then offered a selection of upsells (step 914).

As shown in upsell database 60 of Fig. 6, upsells may comprise fixed-price items such as $1.00 lottery tickets (record 60B), toaster ovens (record 60D), pre-paid phone cards (record 60C), and other goods. Higher cost, fixed-price items are referred to herein as 'tiered' upsells, because monies must typically be accumulated over a number of transactions in order to purchase these items.

Upsells may further comprise instant, or 'coinage-due' goods such as fractional lottery tickets (record 60A), telephone time (record 60E), and frequent flyer miles (record 60F), which are awarded at every transaction in an amount determined by the corresponding upsell credit: i.e. the round-up, layaway, or change due amount (record 60A). Instant upsells such as telephone time and frequent flyer miles may be added into a pre-established account, or provided with directions for their individual usage. Instant upsells may further comprise any other appropriate good wherein any amount of round-up is converted to the service.

Other exemplary types of upsells include: fast food items; related products (e.g batteries when an electronic device has been sold); service contracts for particular products; discount or credit coupons for future purchases; and 'impulse purchase' items. It will be obvious to those skilled in the art that a virtually limitless number of upsells may be identified and sold depending on the particular circumstances of a POS transaction.

Continuing with reference to Fig. 10B, appropriate input is provided to controller 12 pursuant to a customer selection of an upsell (step 916), for example an upsell code 62A of upsell database 60. The input data is used to identify the upsell and retrieve related upsell data (step 918) from upsell database 60 (Fig. 6). Upsell instructions are then received from the customer (step 919) wherein the

customer selects a layaway amount, a roundup amount, or a change due amount to be added to a purchase cost of each transaction for payment of/towards the upsell. The upsell data code and upsell price from fields 62A and 62C of upsell database 60, and the received upsell instructions, are then entered into appropriate fields 56D, 56E and 56G of frequent shopper account database 50 (step 920), respectively, whereby to associate the selected upsell with the frequent shopper information. The process then ends (step 922). A rejection of available upsells by a customer at step 916 would similarly end the registration process.

Examining now Fig.s 11A-C, upsell transaction subprocess 900B is shown wherein a supermarket transaction includes an upsell transaction in accordance with the present invention. The process is typically initiated at a POS register such as 14, 16, or 18, and includes data input into the POS register, and subsequently communicated with controller 12, based on products being purchased during the transaction, and data provided by the customer.

Upon initiating the process (step 924), an operator receives a frequent shopper number from the customer and enters same into the POS terminal (step 926). The operator then enters codes and/or prices of goods into the POS terminal (step 928), for example by scanning bar codes off of food products. The POS terminal then cooperates with controller 12 in a well known manner to calculate the subtotal of the purchased item costs, and to create a transaction record in transaction database 70 (step 930). Using the inputted frequent shopper number to identify the record, the system checks data contained in field 56D of frequent shopper account database 50 to determine if the shopper is registered for an upsell (step 934). If there is no registered upsell (step 934), or if no frequent shopper code was entered to indicate a frequent shopper at step 926, then the transaction is processed in a conventional manner (step 936).

If the shopper is a frequent shopper registered for an upsell, then any upsell instructions associated with the frequent shopper number are retrieved from field 56G of frequent shopper database 50 (step 937). For example the frequent shopper Phil Johnson indicated by record 54F in frequent shopper account database 50 is registered for upsell "D," a toaster oven as shown in upsell database 60, and has indicated at registration a rounding multiple of $5.00 (field 56G).

In the preferred embodiment, the subtotal of the item cost calculated in step 930 above and shown in field 76D of record 78 of transaction database 70 is then adjusted in accordance with the upsell instructions in field 56G of Fig. 5. For example, examining the record illustrated for transaction database 70, a transaction for frequent shopper 123461 Phil Johnson, the purchase price of $3.74 is rounded up to the adjusted, rounded price of $5.00, the nearest multiple of the designated rounding multiple of $5.00 that is higher than the purchase price.

Other round-up multiples would be processed in accordance with the round-up processes described pursuant to Fig. 5 above. If the upsell instructions were to indicate a layaway amount, then in lieu of rounding up to a rounding multiple, that layaway amount would be added to the purchase price to determine the adjusted price. For example, if a layaway amount of $3.00 were indicated in the upsell instructions, then $3.00 would be added to the purchase price of $3.74 for an adjusted price of $6.74. If the upsell instructions were to indicate the amount of change due as the upsell credit, then monies would be collected from the customer based on the purchase price (i.e. $3.74), the adjusted price would constitute the monies/payment tendered, and any change due from the customer tendered payment would be credited towards the registered upsell. For example, if the customer tendered $10.00 towards the $3.74 purchase price, then the difference of $6.26 (10.00-3.74) would be credited towards the upsell.

Continuing now with reference to Fig. 11B, the purchase price adjusted in accordance with the upsell instructions, providing in the described example the rounded price shown in field 76D of record 79 in transaction database 70, is output from the POS register (step 940) and provided to the customer. Payment is received from the customer, and an indication of payment is input to the POS terminal (step 942). An upsell credit is thus available for applying towards a registered upsell, the value of the upsell credit dependent on the upsell instructions. In the example transaction illustrated in Fig. 7, this upsell credit is $1.26, the round-up amount resulting from the $5.00 rounding multiple. The invention of course contemplates the use of a credit card, check, traveler's check, or any form of payment provided by the customer to pay the total transaction price.

The registered upsell data in field 56D of frequent shopper account database 50 is retrieved and used to index and retrieve upsell data from upsell database 60 (Fig. 6) (step 944). A determination is made as to whether the upsell is an instant or tiered upsell (step 946). As described above, instant upsells are awarded substantially instantaneously based on the round-up amount, layaway amount, or change due the customer. Tiered upsells are those for which monies must be accumulated in order to pay a registered upsell price.

Considering first the delivery of an instant upsell, a purchased upsell code is generated by controller 12 (step 948) and both stored in field 86A of purchased upsell database 80 and printed on the customer receipt (step 950) for delivery to the customer. Purchased upsell database 80 is updated (step 952) through the creation of a record to store the purchased upsell code and concomitant data. The upsell transaction process is then complete (step 954 of Fig. 11C), and the actual conversion of the instant upsell to a service credit is initiated and performed in accordance with Fig. 13, described below.

Considering now the delivery of a tiered upsell, the upsell credit (i.e. the round-up amount) calculated above is added to the account balance in field 56F of the frequent shopper account database 50 (step 958). As shown in Fig. 11C, the system then compares the account balance in field 56F to the upsell purchase price in field 56E (step 960) to determine if the upsell purchase is complete, or if further upsell credit must be accumulated during subsequent purchases. If the account balance is less than the upsell purchase price, the increased account balance is printed for providing to the customer (step 962), and the upsell transaction process ends.

Considering now the situation in which the account balance equals or exceeds the upsell purchase price, the upsell purchase price is deducted from the upsell account balance in the frequent shopper account database (step 964). It is noted that this may leave a credit balance in the upsell account, which can for example be applied to a future purchase, or returned to the customer.

Controller 12 functions to generate a purchased upsell code(step 966) and create an appropriate record in purchased upsell database 80 (step 968). The purchased upsell code is printed for providing to the customer (step 970), the

upsell transaction process ends (step 954), and a redemption or delivery process is initiated as described with respect to Fig. 12.

It will be understood that, if the upsell instructions had indicated a layaway amount or change due amount in lieu of the described rounding multiple, the upsell credit would have been calculated as the layaway amount (rounded or un-) or the change due amount, instead of the illustrated round-up amount.

With reference now to Fig. 12, one embodiment of redemption subprocess 900C is shown for tiered upsells. The upsell redemption process includes data exchanged with controller 12, and is performed at a location and in a manner dependent on the particular upsell. Small, stocked items such as grocery items and lottery tickets may be delivered within the supermarket, for example at the courtesy desk. Larger items may require delivery at a remote location, or may be shipped subsequent to validating the transaction by phone, the Internet, or mail, for example. Alternatively, the shipment of a purchased upsell may be initiated automatically by POS system 10, in accordance with instructions stored in frequent shopper account database 50.

Upon initiating the redemption process (step 972), the purchased upsell information, particularly the purchased upsell code, is received from the customer and entered into controller 12 (step 974), for example through a POS terminal. The upsell code is used to retrieve the corresponding purchased upsell record from purchased upsell database 80 (steps 976), and the upsell data in the database is compared to that on the customer receipt (step 978), thereby validating the code. If the information in the purchased upsell database does not match the customer information (step 980), then the upsell redemption is denied (step 982) and the process ends (step 984). If the customer data matches the database data (step 980), the upsell is provided to, or delivery arranged for, the upsell goods (step 986). Purchased upsell database 80 is then updated to reflect delivery of the goods (step 988), for example by deleting the record for a delivered upsell. Alternatively, a 'delivered goods' field may be added to the database in a conventional manner.

Referring now to Fig. 13, an alternate redemption subprocess 900C' is shown wherein the upsell round-up amount is converted into a service credit.

Upon initiating the conversion process (step 990), the upsell credit (i.e. the round-up value) is automatically calculated (step 992) as per the process described above with respect to Figs. 11A-C. The conversion factor is retrieved from upsell database 60, and the upsell credit is converted into a service credit value (step 994). For example, in entry 60E of the upsell database, it is seen that telephone minutes cost twelve cents per minute. Entry 60F indicates that frequent flyer miles convert at the rate of six cents per mile. A round up value of sixty cents would thus convert to five telephone minutes, or ten frequent flyer miles.

Continuing with Fig. 13, a test is performed to determine if a pre-established service account exists (step 996). An appropriate account identifier may, for example, be stored in an additional field of frequent shopper account database 50 (Fig. 5), or provided by the shopper during the transaction. If no pre-established account is identified, then the value of the service credit and redemption instructions are printed on a customer receipt (steps 1004 and 1006). If a pre-established service account is identified, then the service credit resulting from the transaction is added to that account (step 998). Preferably, a confirmation of the newly added credit is provided to the customer on the customer receipt (step 1000). Once the service credit is appropriately established and communicated to the customer, the process ends (step 1002).

Referring now to Fig. 14, an example of a customer receipt for the transaction illustrated in transaction database 70 of Fig. 7 is shown, including (with like data on the receipt indicated by like reference numbers to those shown in the transaction record) at the top of the receipt: transaction number 72C, store identifier number 72B, POS register identifier number 72D, frequent shopper identifiers 72A, and transaction date 72E. Underneath the above-described data are: the purchased items as identified in database records 74A, 74B, the tax as described in record 78, and the round up amount of $1.26 and rounded price of $5.00, together indicated at 79.

Continuing with reference to Fig. 14, further included on the receipt is the upsell description "Toaster Oven" from field 62B, of record 60D in upsell database 60, and the code "2422879" from field 86A of record 84B in purchased upsell database 80. As will be apparent from a consideration of record 54F of frequent

shopper account database 50, the illustrated transaction results in the completed purchase of the toaster oven. Accordingly, directions 142 are provided on receipt 140, indicating that the receipt may be redeemed for the toaster oven at the service desk.

Figs. 15, 16, and 17 are examples of other customer receipts for different upsells or upsell circumstances. For purposes of simplifying the description, all identifying data towards the tops of the receipts is removed.

Examining first Fig. 15, a receipt 150 would result from the purchase of a 20 minute telephone card upsell, and includes a purchase code 152 and description 154 identifying same. Directions 156 are provided for the using the telephone card.

Fig. 16 shows a receipt 160 wherein the upsell is a toaster oven, but the transaction generating the receipt has not resulted in the purchase of same. Information 162 indicates the status of the customer's account.

Fig. 17 shows a receipt 170 wherein the upsell credit has been converted from a $1.26 credit to 21 frequent flyer miles, including directions 172 on how to claim same.

There has thus been provided a new and improved method and system for buyers to request and for sellers to provide upsells in accordance with pre-registered, automatically processed instructions. The invention has particular application in the retail industry, for example supermarkets, fast-food restaurants, pharmacies, and the like. The invention provides consumers with a convenient and simple method of purchasing goods and/or services. The invention provides merchants with a valuable service useful not only for increasing sales, but for attracting and retaining customers.

While the invention has been described with respect to particular embodiments, it is not thus limited. For example, while specific database formats and tables have been shown and described, numerous other embodiments will be obvious to those skilled in the art. Further, while the invention has been described with respect to a supermarket frequent shopper program, it is applicable to any transaction environment permitting the registration of upsell instructions. The

scope of the invention is thus intended to encompass the entire scope of the appended claims.

WHAT IS CLAIMED IS:

1. A method of processing a transaction, comprising the steps of:

receiving an identifier of a customer account;

determining an upsell associated with said identifier, said upsell having an upsell price;

determining a purchase price for a purchase associated with said identifier; and

determining an upsell credit for applying to said upsell price.

2. A method in accordance with claim 1 and further including the step of outputting said upsell credit.

3. A method in accordance with claim 1 and further including the step of applying said upsell credit to said upsell price.

4. A method in accordance with claim 1 wherein said step of determining an upsell includes the steps of:

registering said upsell prior to said purchase; and

retrieving said upsell pursuant to said purchase.

5. A method in accordance with claim 1 and further including the step of storing a plurality of identifiers each associated with a respective customer account.

6. A method in accordance with claim 1 wherein said step of determining an upsell credit includes the steps of:

determining a price adjustment associated with said identifier; and

applying said price adjustment to said purchase price.

7. A system for processing a transaction, comprising:

means for receiving an identifier of a customer account;

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means for determining an upsell associated with said identifier, said upsell having an upsell price;

means for determining a purchase price for a purchase associated with said identifier; and

means for determining an upsell credit for applying to said upsell price.

8. A method of operation of a point-of-sale (POS) system, comprising the steps of:

receiving an identifier of a customer account;

retrieving an upsell associated with said identifier, said upsell having an upsell price;

receiving a purchase price for a purchase associated with said identifier;

calculating an upsell credit for applying to said upsell price; and

generating a customer receipt including said upsell credit.

9. A method in accordance with claim 8 and further including the step of applying said upsell credit to said upsell price.

10. A method in accordance with claim 8 wherein said step of retrieving an upsell includes the steps of:

storing said upsell prior to said purchase; and

retrieving said upsell pursuant to said purchase.

11. A method in accordance with claim 8 and further including the step of storing a plurality of identifiers each associated with a respective customer account.

12. A method in accordance with claim 8 wherein said step of determining an upsell credit includes the steps of:

determining a price adjustment associated with said identifier; and

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applying said price adjustment to said purchase price.

13. A method in accordance with claim 8 wherein said purchase comprises a sale of goods transacted by said POS system.

14. A point-of-sale (POS) system, comprising:

a processor;

a memory connected to said processor and storing a program;

said processor operative with said program in said memory to

receive an identifier of a customer account;

retrieve an upsell associated with said identifier, said upsell having an upsell price;

receive a purchase price for a purchase associated with said identifier;

calculate an upsell credit for applying to said upsell price; and

generate a customer receipt including said upsell credit.

15. A method of processing a transaction, comprising the steps of:

receiving an identifier of a customer account;

determining an upsell associated with said identifier;

determining a purchase price for a purchase associated with said identifier; and

determining instructions associated with said identifier for adjusting said purchase price to provide an adjusted purchase price including a credit for said upsell.

16. A method in accordance with claim 15 wherein said instructions include rounding up said purchase price.

17. A method in accordance with claim 16 wherein said instructions include rounding up said purchase price to a specified rounding multiple.

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18. A method in accordance with claim 15 wherein said instructions include adding a predetermined layaway amount to said purchase price.

19. A method in accordance with claim 18 wherein said instructions include rounding up said purchase price plus said predetermined layaway amount.

20. A method in accordance with claim 15 wherein said instructions include setting said purchase price to equal an amount tendered for said purchase.

21. A method in accordance with claim 15 and further comprising the step of adding said credit to a balance of said customer account.

22. A method in accordance with claim 21 and further including the step of comparing said balance to a cost of said upsell.

23. A method in accordance with claim 15 and further comprising the step of substantially instantaneously applying said credit to purchase said upsell.

24. A system for processing a transaction, comprising:

means for receiving an identifier of a customer account;

means for determining an upsell associated with said identifier;

means for determining a purchase price for a purchase associated with said identifier; and

means for determining instructions associated with said identifier for adjusting said purchase price to provide an adjusted purchase price including a credit for said upsell.

25. A method of operation of a point-of-sale (POS) system, comprising the steps of:

receiving an identifier of a customer account;

determining an upsell associated with said identifier;



determining instructions associated with said identifier for adjusting a price;

determining a purchase price for a purchase transaction occurring at said POS system associated with said identifier;

using said instructions to adjust said purchase price to provide an adjusted purchase price including a credit for said upsell; and

generating a customer receipt including said adjusted purchase price.

26. A method in accordance with claim 25 wherein said instructions include rounding up said purchase price.

27. A method in accordance with claim 26 wherein said instructions including rounding up said purchase price to a specified rounding multiple.

28. A method in accordance with claim 25 wherein said instructions include adding a predetermined layaway amount to said purchase price.

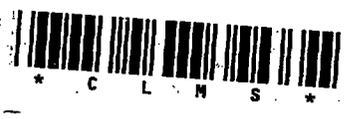
29. A method in accordance with claim 28 wherein said instructions include rounding up said purchase price plus said predetermined layaway amount.

30. A method in accordance with claim 25 wherein said instructions include setting said purchase price to equal an amount tendered for said purchase.

31. A method in accordance with claim 25 and further comprising the step of adding said credit to a balance of said customer account.

32. A method in accordance with claim 31 and further including the step of comparing said balance to a cost of said upsell.

33. A method in accordance with claim 25 and further comprising the step of substantially instantaneously applying said credit to purchase said upsell.



34. A method of operation of a point-of-sale (POS) system, comprising the steps of:

a processor;

a memory connected to said processor and storing a program;

said processor operative with said program in said memory to

receive an identifier of a customer account;

determine an upsell associated with said identifier;

determine instructions associated with said identifier for adjusting a price;

determine a purchase price for a purchase transaction occurring at said POS system associated with said identifier;

use said instructions to adjust said purchase price to provide an adjusted purchase price including a credit for said upsell; and

generating a customer receipt including said adjusted purchase price.

35. A method of operation of a point-of-sale (POS) terminal, comprising the steps of:

inputting into said POS terminal transaction data including a customer account identifier; and

receiving from said POS terminal an identifier of a pre-registered upsell associated with said customer account identifier.

36. A method in accordance with claim 35 and further including the step of generating a customer receipt including an identifier of said pre-registered upsell.

37. A method in accordance with claim 35 wherein said transaction data relates to a transaction occurring at said POS terminal.

38. A method of operation of a point-of-sale (POS) terminal, comprising the steps of:

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inputting into said POS terminal transaction data including a customer account identifier and a purchase price; and

receiving from said POS terminal an adjusted price determined by applying pre-registered upsell instructions associated with said customer account identifier to said purchase price.

39. A method in accordance with claim 38 wherein said adjusted price is rounded up.

40. A method in accordance with claim 38 wherein said adjusted price includes an added layaway value.

41. A method in accordance with claim 38 wherein said adjusted price is set equal to an amount tendered in payment for said purchase price

42. A method of processing a transaction, comprising the steps of:

receiving an identifier of a customer account;

determining an upsell to a service associated with said identifier, said upsell including a conversion factor;

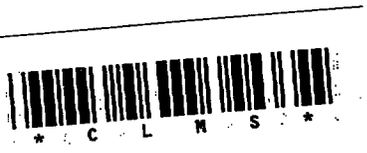
determining a purchase price for a purchase associated with said identifier;

determining an upsell credit for purchasing said service; and

converting said upsell credit to said service using said conversion factor.

43. A method in accordance with claim 42 and further including the step of generating a signal to initiate said service in accordance with the quantity of said service resulting from said step of converting said upsell credit.

44. A method in accordance with claim 42 wherein said service comprises a telecommunications service and said conversion factor comprises a factor for converting currency to said telecommunications service.



45. A method in accordance with claim 42 wherein said service comprises frequent flyer miles and said conversion factor comprises a factor for converting currency to said frequent flyer miles.

46. A method in accordance with claim 42 wherein said step of determining an upsell credit comprises the step of adjusting said purchase price in accordance with pre-registered upsell instructions to provide said upsell credit.

47. A system for processing a transaction, comprising:

means for receiving an identifier of a customer account;

means for determining an upsell to a service associated with said identifier, said upsell including a conversion factor;

means for determining a purchase price for a purchase associated with said identifier;

means for determining an upsell credit for purchasing said service; and

means for converting said upsell credit to said service using said conversion factor.

48. A method of operation of a point-of-sale (POS) system, comprising the steps of:

receiving an identifier of a customer account;

determining an upsell to a service associated with said identifier, said upsell including a conversion factor;

receiving a purchase price for a purchase;

determining an upsell credit for purchasing said service;

converting said upsell credit to said service using said conversion factor; and

generating a customer receipt including an indication of said upsell credit and an indication of said service.

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49. A method in accordance with claim 48 wherein said service comprises a telecommunications service and said conversion factor comprises a factor for converting currency to said telecommunications service.

50. A method in accordance with claim 48 wherein said service comprises frequent flyer miles and said conversion factor comprises a factor for converting currency to said frequent flyer miles.

51. A method in accordance with claim 48 wherein said step of determining an upsell credit comprises the step of adjusting said purchase price in accordance with pre-registered upsell instructions to provide said upsell credit.

52. A point-of-sale (POS) system, comprising:

a processor;

a memory connected to said processor and storing a program;

said processor operative with said program in said memory to

receive an identifier of a customer account;

determine an upsell to a service associated with said identifier, said upsell including a conversion factor;

receive a purchase price for a purchase;

determine an upsell credit for purchasing said service;

convert said upsell credit to said service using said conversion factor; and

generate a customer receipt including said upsell credit and an indicator of said service.