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Fuisz et al.

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(54) **METHODS FOR DETERMINING CUSTOMER MOTIVATIONS IN PURCHASING DECISIONS**

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(52) **U.S. Cl.** **705/26**; 705/10; 705/27; 705/28
(58) **Field of Search** 705/10, 22, 28, 705/26–27; G06F 17/60

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See the attachment for a continuation sheet.*

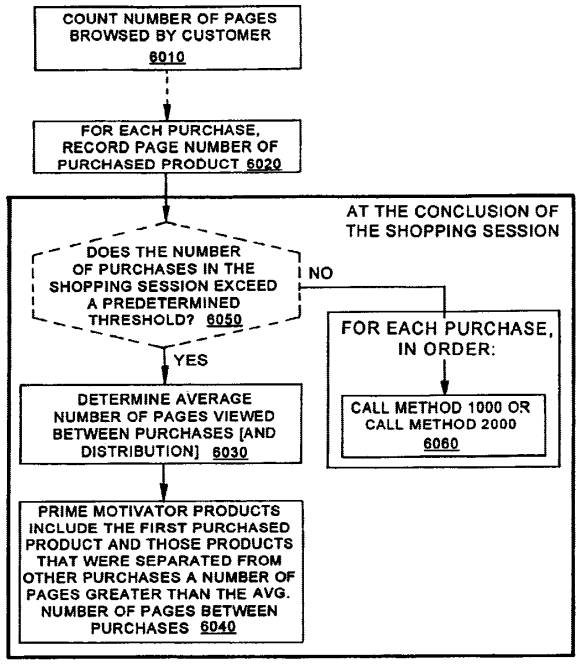
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(57) **ABSTRACT**

Methods provide for auditing of on-line commercial transactions to determine what products are the primary motivations for a customer to begin an on-line shopping session. When a purchase is made during a shopping session, the method determines whether a purchased product is related to a previous "prime motivator" product. If so, the product is designated as a derivative product and a derivative count associated with the product is incremented. If not, the product itself is designated a prime motivator product and a prime motivator count associated with the product is incremented. The method may be repeated for every purchase fielded by an on-line commercial site.

22 Claims, 6 Drawing Sheets



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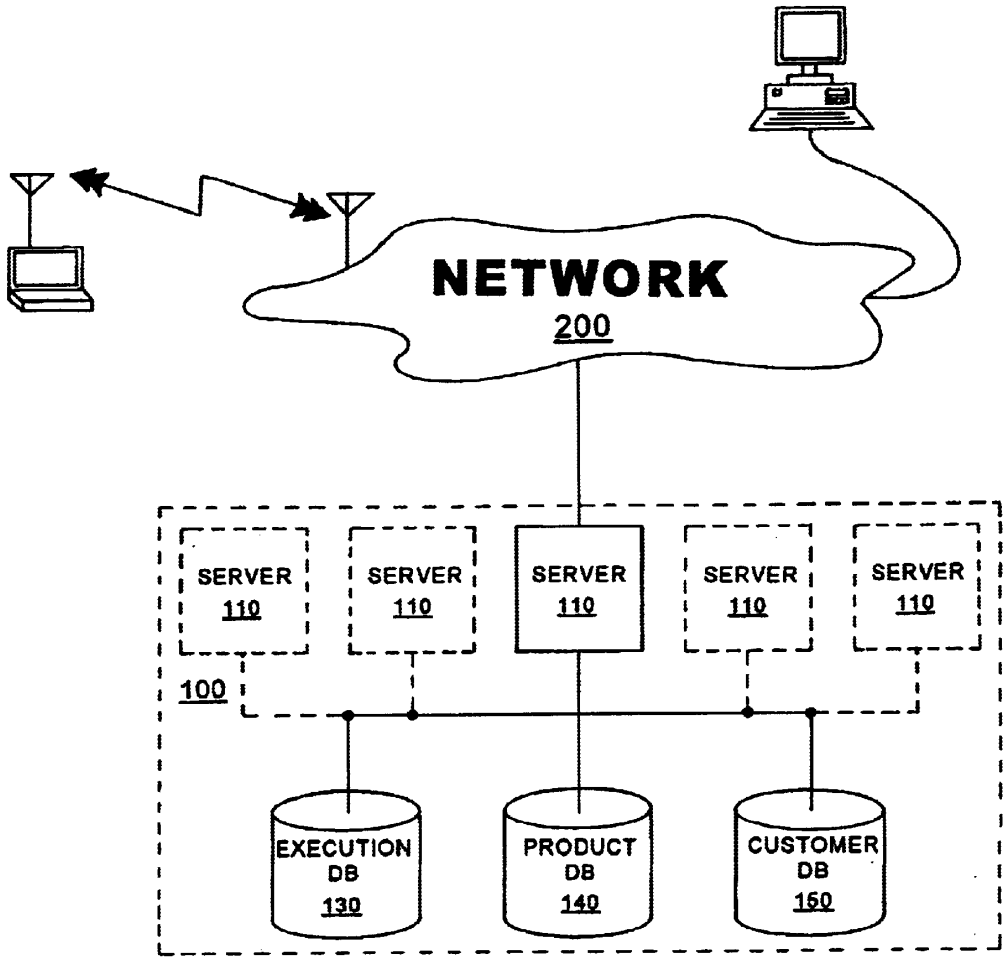

NETWORK
200
SERVER
110
SERVER
110
SERVER
110
SERVER
110
SERVER
110
100
EXECUTION
DB
130
PRODUCT
DB
140
CUSTOMER
DB
160

FIG. 1

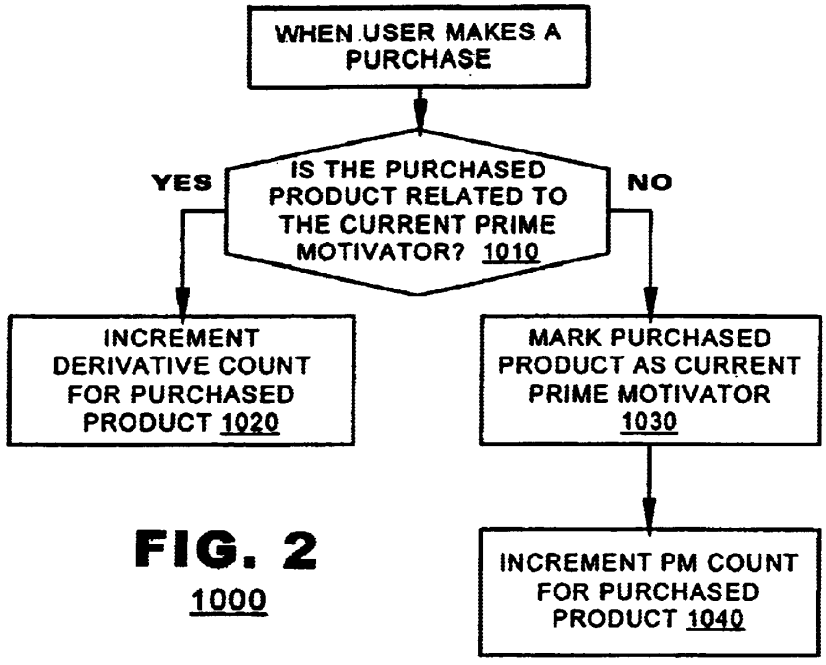


FIG. 2
1000

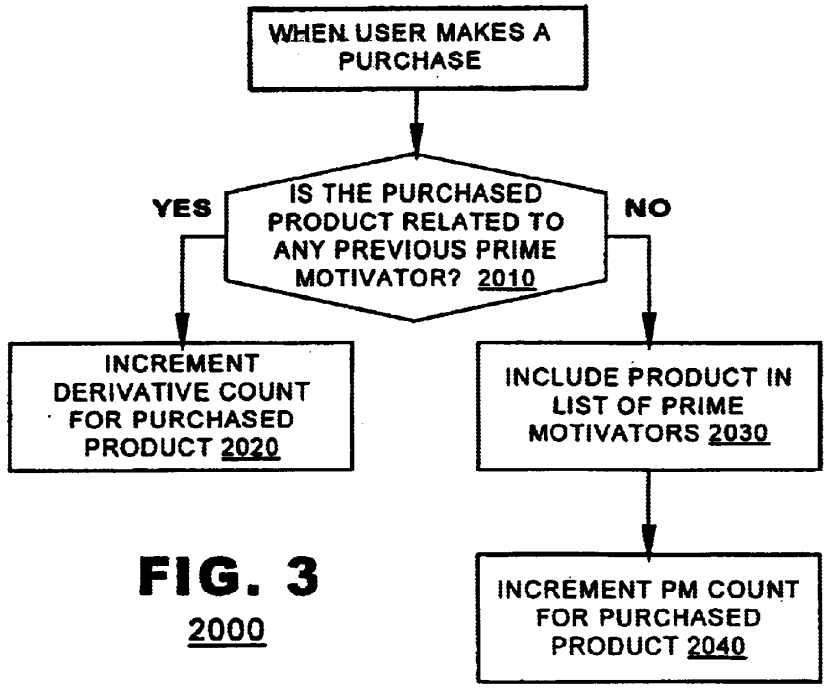


FIG. 3
2000

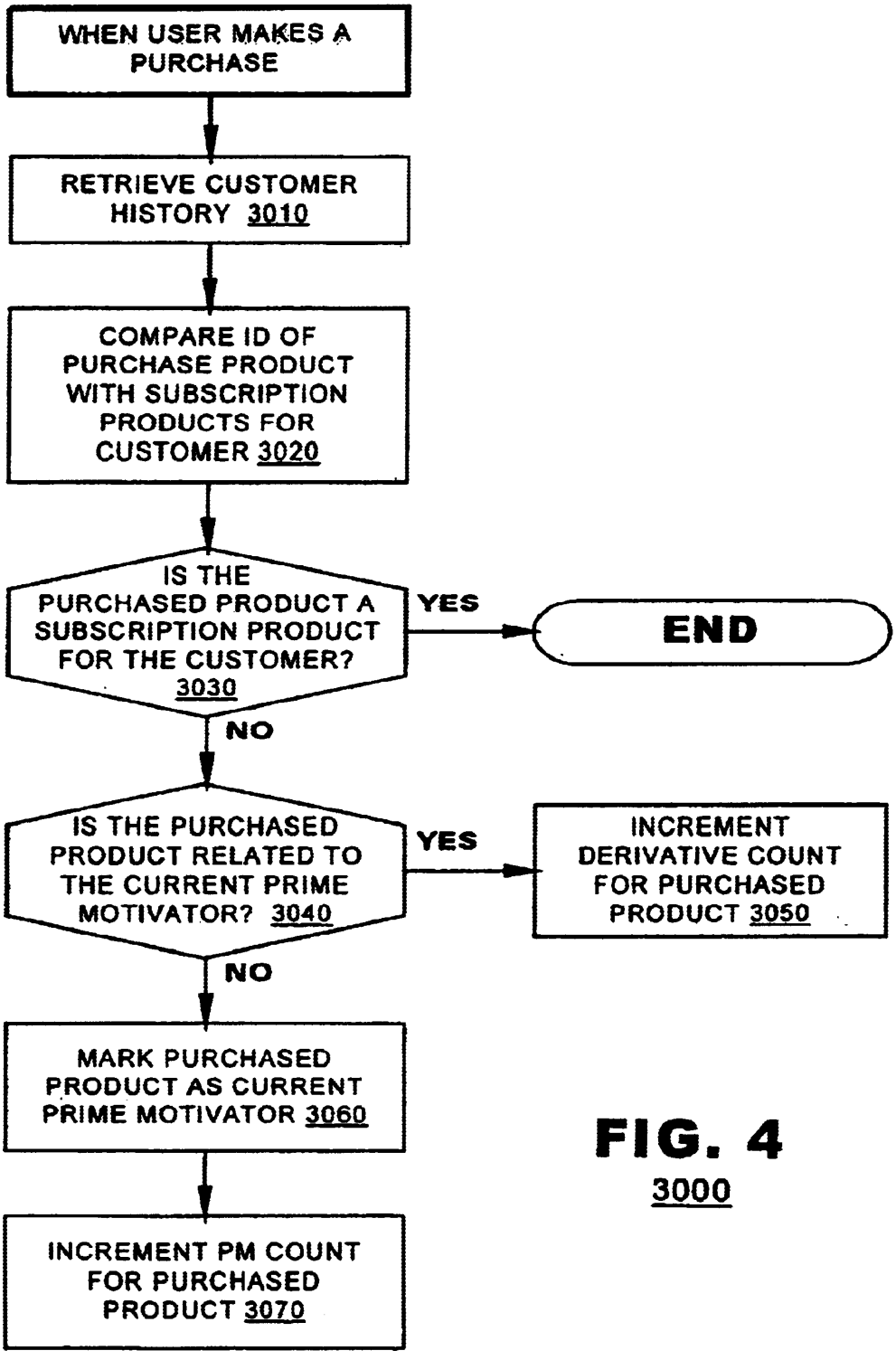

WHEN USER MAKES A PURCHASE
RETRIEVE CUSTOMER HISTORY 3010
COMPARE ID OF PURCHASE PRODUCT WITH SUBSCRIPTION PRODUCTS FOR CUSTOMER 3020
IS THE PURCHASED PRODUCT A SUBSCRIPTION PRODUCT FOR THE CUSTOMER? 3030
YES
END
NO
IS THE PURCHASED PRODUCT RELATED TO THE CURRENT PRIME MOTIVATOR? 3040
YES
INCREMENT DERIVATIVE COUNT FOR PURCHASED PRODUCT 3050
NO
MARK PURCHASED PRODUCT AS CURRENT PRIME MOTIVATOR 3060
INCREMENT PM COUNT FOR PURCHASED PRODUCT 3070

FIG. 4
3000

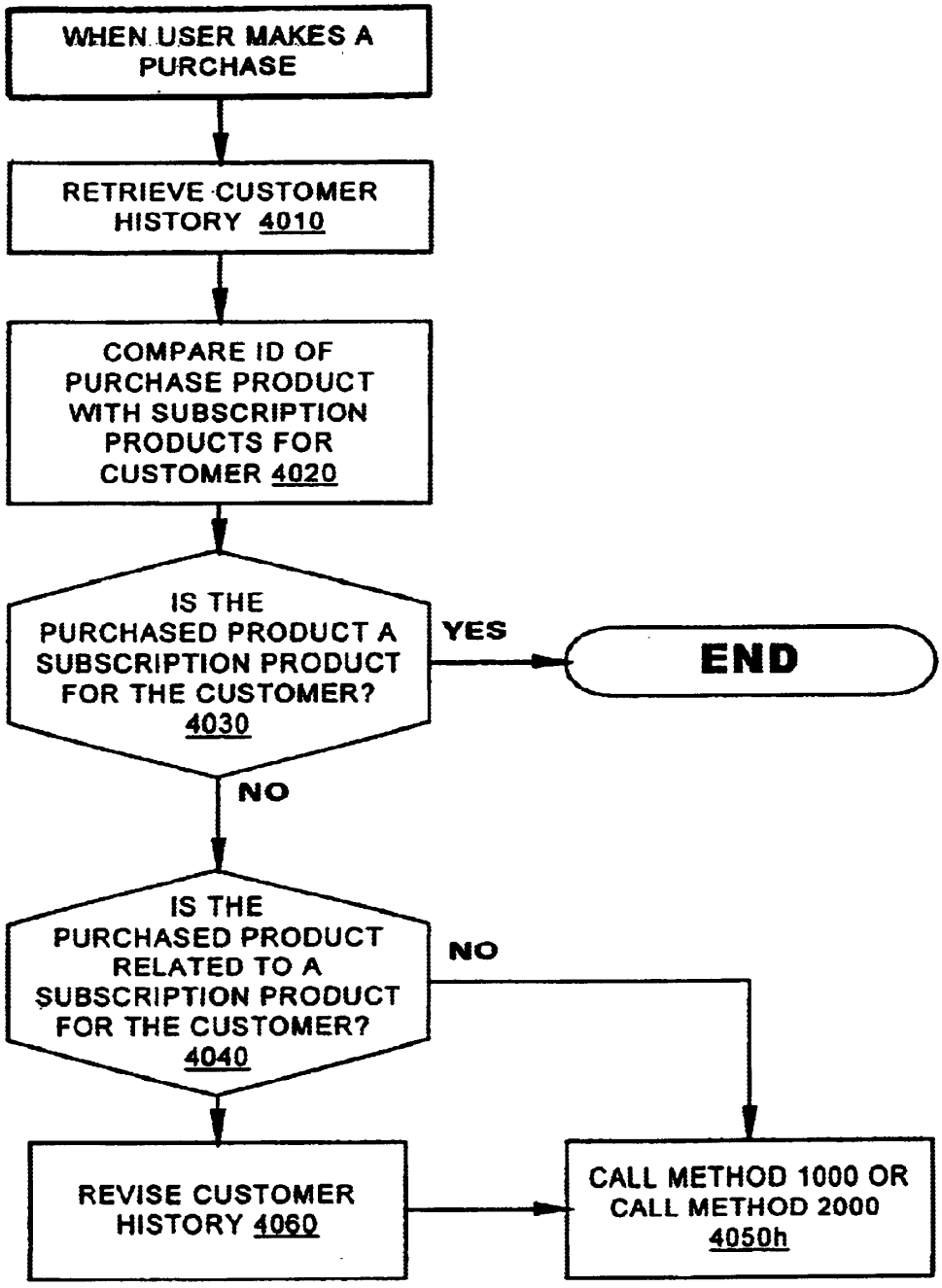

WHEN USER MAKES A PURCHASE
RETRIEVE CUSTOMER HISTORY 4010
COMPARE ID OF PURCHASE PRODUCT WITH SUBSCRIPTION PRODUCTS FOR CUSTOMER 4020
IS THE PURCHASED PRODUCT A SUBSCRIPTION PRODUCT FOR THE CUSTOMER? 4030
YES
END
NO
IS THE PURCHASED PRODUCT RELATED TO A SUBSCRIPTION PRODUCT FOR THE CUSTOMER? 4040
NO
REVISE CUSTOMER HISTORY 4060
CALL METHOD 1000 OR CALL METHOD 2000 4050h

FIG. 5

4000

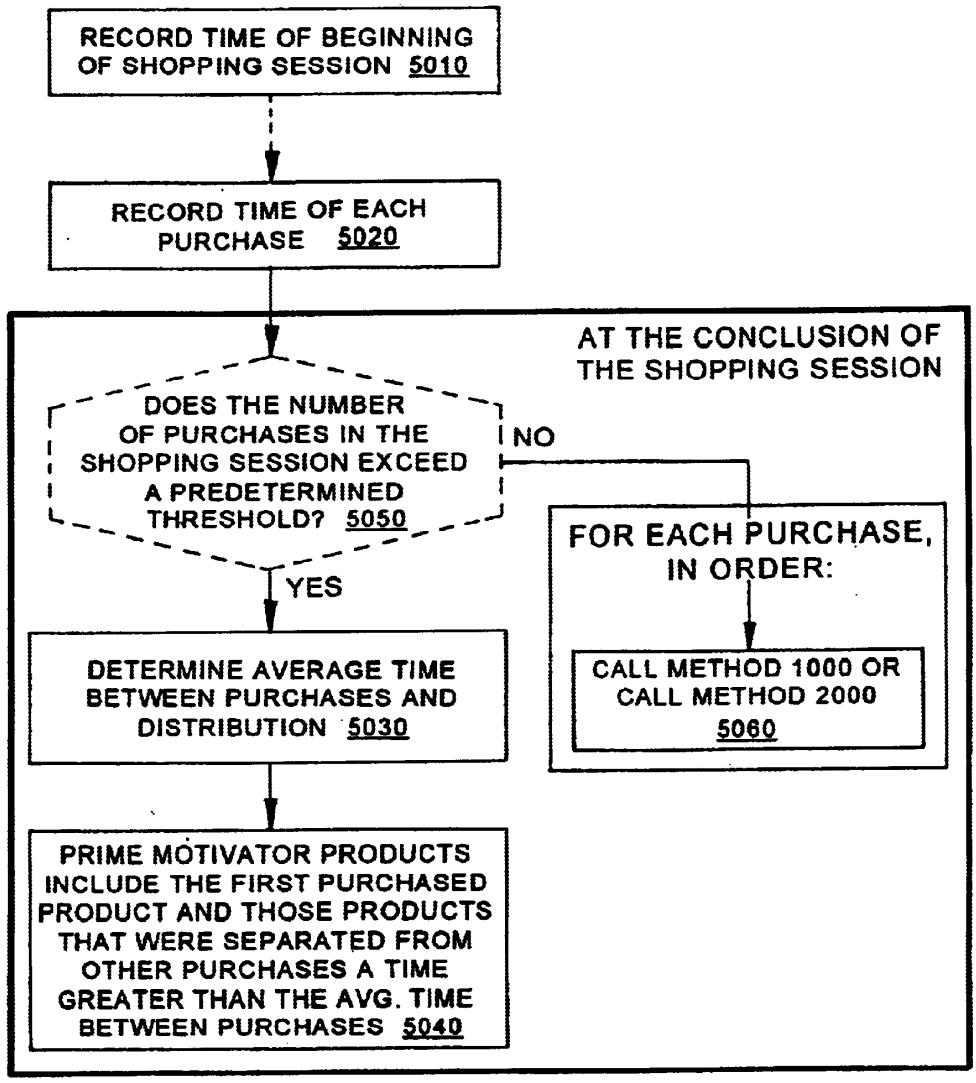

RECORD TIME OF BEGINNING OF SHOPPING SESSION 5010
RECORD TIME OF EACH PURCHASE 5020
AT THE CONCLUSION OF THE SHOPPING SESSION
DOES THE NUMBER OF PURCHASES IN THE SHOPPING SESSION EXCEED A PREDETERMINED THRESHOLD? 5050
NO
YES
FOR EACH PURCHASE, IN ORDER:
CALL METHOD 1000 OR CALL METHOD 2000 5060
DETERMINE AVERAGE TIME BETWEEN PURCHASES AND DISTRIBUTION 5030
PRIME MOTIVATOR PRODUCTS INCLUDE THE FIRST PURCHASED PRODUCT AND THOSE PRODUCTS THAT WERE SEPARATED FROM OTHER PURCHASES A TIME GREATER THAN THE AVG. TIME BETWEEN PURCHASES 5040

FIG. 6

5000

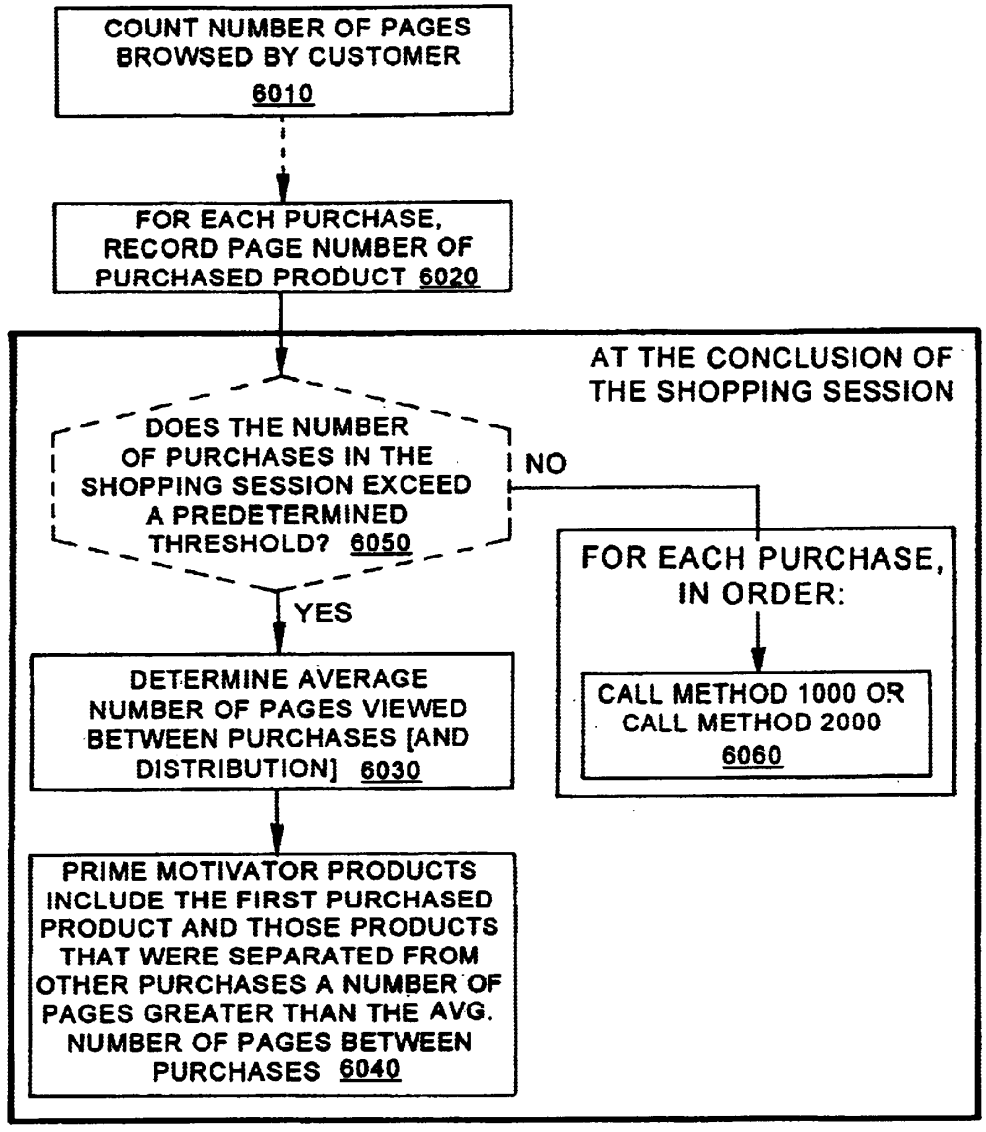

COUNT NUMBER OF PAGES BROWSED BY CUSTOMER 6010
FOR EACH PURCHASE, RECORD PAGE NUMBER OF PURCHASED PRODUCT 6020
AT THE CONCLUSION OF THE SHOPPING SESSION
DOES THE NUMBER OF PURCHASES IN THE SHOPPING SESSION EXCEED A PREDETERMINED THRESHOLD? 6050
NO
YES
FOR EACH PURCHASE, IN ORDER:
CALL METHOD 1000 OR CALL METHOD 2000 6060
DETERMINE AVERAGE NUMBER OF PAGES VIEWED BETWEEN PURCHASES [AND DISTRIBUTION] 6030
PRIME MOTIVATOR PRODUCTS INCLUDE THE FIRST PURCHASED PRODUCT AND THOSE PRODUCTS THAT WERE SEPARATED FROM OTHER PURCHASES A NUMBER OF PAGES GREATER THAN THE AVG. NUMBER OF PAGES BETWEEN PURCHASES 6040

FIG. 7

METHODS FOR DETERMINING CUSTOMER MOTIVATIONS IN PURCHASING DECISIONS

BACKGROUND OF THE INVENTION

The present invention relates to a system and method for identifying motivations in purchasing decisions by consumers.

In retail sale stores, a great deal of time and effort is directed to the task of physical layout. Many product placement decisions are made based upon estimates of consumer behavior in an effort to place products in a location that maximizes the likelihood that they will be observed and purchased by a customer. Consider the example of a retail pharmacy, for example. In many pharmacies, prescription medicines are dispensed in the rear of the pharmacies' physical plant. This physical layout is not accidental; the layout is premised on an assumption that customers enter pharmacies in order to purchase prescription medicines. By dispensing prescription medicines in the rear of the pharmacies' physical plant, the pharmacy requires customers to pass through the interior of the store where they may observe other products offered by the store. In theory, it raises the probability that the customers will make impulse purchases of other items. This arrangement is predicated on an assumption that customers enter pharmacies to buy prescription medicines.

It is a difficult and expensive task to determine how consumers decide to buy particular goods or services ("products"). Retailers spend great sums of money commissioning studies and other investigations to determine why a customer entered a particular store or why the customer determined to purchase particular products. Some consider surveys of customers to be unreliable. The mere fact that a customer is questioned about his buying habits tends to skew the survey results because, by questioning the customer directly, the customer ceases to think intuitively. Instead, the customer may over-think a purchasing decision. Additionally, only a small sample of the buying public may be surveyed with reasonable cost. There can be no guarantee that the survey will accurately reflect the buying decisions of the public at large particularly when buying decisions reflect impulsive behavior.

Other methods for measuring and evaluation customer behavior are known. Typically, they require some type of customer surveillance to monitor purchasing decisions as they are made. However, such surveillance is expensive, time-consuming and cannot be done on a large scale. Thus, the same problem of undersampling arises when customer surveillance is performed.

There is a need in the art for a system that can identify customer motivations from customer purchasing decisions. Further, there is a need in the art for a system that can identify customer motivations using a large statistical base at low cost.

SUMMARY

Embodiments of the present invention provide for auditing of on-line commercial transactions to determine what products are the primary motivations for a customer to begin an on-line shopping session. When a purchase is made during a shopping session, the method determines whether a purchased product is related to a previous "prime motivator" product. If so, the product is designated as a derivative product and a derivative count associated with the product is incremented. If not, the product itself is designated a prime motivator product and a prime motivator count associated with the product is incremented. The method may be repeated for every purchase fielded by an on-line commercial site.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a block diagram illustrating an on-line site according to an embodiment of the present invention.

FIG. **2** is a flow diagram illustrating a method according to an embodiment of the present invention.

FIG. **3** is a flow diagram illustrating a method according to another embodiment of the present invention.

FIG. **4** is a flow diagram illustrating a method according to a further embodiment of the present invention.

FIG. **5** is a flow diagram illustrating a method according to another embodiment of the present invention.

FIG. **6** is a flow diagram illustrating a method according to a further embodiment of the present invention.

FIG. **7** is a flow diagram illustrating a method according to another embodiment of the present invention.

DETAILED DESCRIPTION

Embodiments of the present invention provide a system for identifying and measuring customer motivations in purchasing environments. The system monitors customers as they select goods or services (collectively, "products") for purchase. Of the products that are selected, the system identifies those products that are prime motivators, those products that are related to the customer's motivation to enter the on-line store. The system also identifies other products that are secondary motivators, products that the customer purchases as ancillary to the prime motive products.

According to an embodiment of the present invention, a computer system that engages in traditional on-line commerce also monitors purchases made by on-line customers to identify "prime motivator products," those products that caused the customers to initiate a shopping session. The system also identifies "derivative products," those products that are purchased during a shopping session that, most likely, are not products that caused a customer to initiate a purchasing session. According to an embodiment of the invention, prime motivator products and derivative products may be logged during every shopping session handled by an on-line commerce system. Thus, the present invention builds a database of information that possesses much more statistical validity at lower expense than any monitoring system known in the art.

FIG. **1** illustrates an exemplary on-line commercial system ("on-line site") constructed in accordance with the present invention. On-line sites **100** are known per se. They typically include one or more servers **110** provided in communication with a computer network **200**, such as a wide area network or an Internet. Where more than one server **110** is provided, the servers **110** may communicate with the network **200** via communications equipment such as a gateway (not shown). The on-line site **100** also may include a variety of databases **130–150**. A first execution database **130** stores executable program instructions to be performed by the servers **110**. A product database **140** stores information content related to the products to be offered by the on-line site **100**. Optionally, as will be discussed herein, the on-line site **100** may include a customer database **150**.

The on-line site **100** typically is adapted to communicate with client terminals **10**, **20** via the computer network. Both

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the on-line site **100** and the client terminals **10**, **20** may be provided with network addresses by which they may inter-exchange data using the network **200** as transport medium. A variety of computer networks **200** are available for use with the present invention; they vary in number, type and communication protocols used. The on-line site **100** and methods described herein may be adapted for use with any of them.

Typically, the execution database **130** includes program instructions that permit the servers **110** to carry out operation consistent with an on-line commercial enterprise. Thus, the execution database **130** will include program instructions that permit the on-line site to receive data requests from customers at client terminals **10**, **20**, retrieve product information in response to such data requests, forward product information to client terminals, receive purchase requests from the client terminals and execute purchase requests when made. Typically, the program instructions may cause a server **110** to assign a session identifier to individual customers (via their client terminals **10**, **20**) and conduct independent shopping sessions with each. Thus, a server **110** may execute the program instructions from database **130** during a first shopping session with a customer at client terminal **10** and may execute the same program instructions independently during a second shopping session with a second customer at the same or different client terminal **10** or **20**. The ability for on-line sites to engage with multiple client terminals simultaneously and independently is a known feature of such sites.

The product database **140** includes information regarding the various products offered by the on-line site. The content of such product databases **140** varies in accordance with the application for which the on-line site **100** may be used. Typically, however, the product database is indexed by a product identifier. For each product offered by the on-line site, the product database **140** may store, in separate database fields, such information as: product descriptions, product price, number currently in inventory, pointers to other products offered by the on-line site. In this respect, the product database **140** is well-known.

According to the present invention, a product database **140** may store information in addition to that identified above. The product database **140** may additional fields representing a "prime motivator count" and a "derivatives count."

Optionally, the on-line site **100** may include a customer database **150** storing information regarding customers that may have used the on-line site in the past. Customer databases per se are known.

According to the present invention, the customer database **150** may include a field identifying subscription products for the customer. Subscription products are described herein.

FIG. **2** illustrates a method **1000** operating in accordance with a first embodiment of the present invention. The method **1000** may be invoked during a shopping session each time that a customer identifies a product for purchase. In accordance with the method **1000**, the method maintains in a memory an identifier of a prime motivator product. Initially, prior to a first purchase by a customer, there is no current prime motivator.

According to an embodiment of the present invention, the method **1000** may be integrated into the process used by an on-line system for handling product purchases. For example, it may be called by a larger purchasing routine executed by the on-line systems. Purchasing routines for on-line commercial systems are known per se and need not be described here. When invoked, the method **1000** determines whether the product being purchased is related to a prime motivator (Step **1010**). If the purchased product and the current prime motivator are related, the purchased product is designated a derivative. Within the product database **140**, a derivative count for the purchased product is incremented (Step **1020**). Thereafter, the method **1000** may terminate and, if necessary, return to a larger purchasing routine for completion.

If, at Step **1010**, the purchased product is not related to the current prime motivator, the purchased product itself is designated the current prime motivator (Step **1030**). Within the product database **140**, a prime motivator count for the purchased product is incremented (Step **1040**). Thereafter, the method **1000** may terminate and, if necessary, return to a larger purchasing routine for completion.

According to a first embodiment of the present invention, two products may be identified as related if one or more of the class codes assigned to the purchased product agree with one or more of the class codes of the product represented by the current prime motivator.

Prior to a first iteration of the method **1000**, the prime motivator is set to a null value. Thus, the first product purchased by the customer will cause the product to be labeled a prime motivator.

Consider the method **1000** in operation over a series of customer purchases. Using the on-line pharmacy example above, consider exemplary customer purchases of Tylenol, a thermometer and shampoo in order. When the customer purchases is Tylenol, then Tylenol is designated the prime motivator. However, because both Tylenol and the thermometer are useful in the treatment of fevers, the product database **140** may store the same class codes for both Tylenol and the thermometer. In such a case, when the customer purchases the thermometer, the class codes of Tylenol and the thermometer will match at Step **1010** and the thermometer will be considered a derivative. Tylenol will remain the current prime motivator.

In the example above, during the third iteration of the method **1000**, the customer purchases shampoo. It is unlikely that Tylenol and shampoo will be assigned the same class codes in the product database **140**. Thus, the method **1000** will not consider Tylenol and shampoo to be related products. The purchased shampoo will be designated as the prime motivator and its prime motivator count will be incremented. Tylenol will cease to be the prime motivator. Thus, in a successive iterations of the method **1000**, the method **1000** will determine if the next-purchased product is related to shampoo.

The method **1000** thus builds a database that identifies purchasing decisions made by the consuming public. The database identifies products that represent a customer's primary motivation for "entering" the on-line "store." The database also identifies derivative products, those products whose purchase may be ancillary to the prime motivator product.

The method **1000** may be repeated for every shopping session conducted by the system **100**. As the system **100** operates, it builds a database that counts the number of times that a product has been designated a prime motivator, the primary reason that the customer entered the store. The database also counts the number of time that a product has been a derivative representing the number of times that a product has been purchased ancillary to the purchase of a prime motivator product.

Advantageously, every purchase recorded by the system **100** may be recorded as either a prime motivator or as a

derivative. Thus, the data collected by the system **100** is not anecdotal as would be acquired by survey evidence and does not suffer from statistical undersampling as would occur by survey evidence or customer surveillance. The method **1000** builds a database of customer behavior based on observed customer purchases and the order in which the purchases were made.

As is known, many on-line commercial systems **100** may include search functionality wherein a customer can perform a product search based on keywords or other product identifiers. According to an embodiment of the present invention, if a customer selects a product that was identified by a search result for purchase, the purchase product is designated a prime motivator, regardless of whether the class codes of a current prime motivator match the purchased product or not.

As has been described, each product may be associated with one or more product class codes. According to an embodiment of the present invention, a class code may represent fields of use for the product. The number and type of class codes used in a given application will be determined by the applications for which the system **100** will be used. For example, as is known, traditional retail establishments, such as department stores, grocery stores, pharmacies and the like, typically designate their products to one or more departments and may even designate the products to subgroups within the department (aisles, shelves, etc.). Class codes may be assigned to products using these same organizational principles.

In an alternate embodiment, class codes may be used to represent a brand identifier associated with the product (e.g. Johnson & Johnson products, Proctor & Gamble products, etc.). In this embodiment, there may even be a class code to represent unbranded or generic products. In such an embodiment, the method **1000** may be used to determine whether brand loyalty is a motivator in purchasing decisions.

FIG. **3** illustrates a method **2000** according to another embodiment of the present invention. According to this second method **2000**, the system **100** maintains an ever-increasing list of prime motivators during a single shopping session. Again, prior to a first iteration of the method **2000**, the list of prime motivators is set to a null value. Each time a purchase is made, the method **2000** may be called. In step **2010**, the method **2000** determines whether the purchased product is related to any prime motivators that may have been identified previously during the shopping session (Step **2010**). If so, the purchased product may be designated as a derivative and the method **2000** may increment the derivative count for the purchased product in the product database (Step **2020**). Otherwise, the list of prime motivators may be amended to include the purchased product (Step **2030**). Also, the method **2000** may increment the prime motivator count for the purchased product in the product database **140** (Step **2040**). At the conclusion of Step **2020** or Step **2040**, the method **2000** may conclude and, if necessary, return to a larger purchasing routine for completion.

According to an embodiment of the present invention, a determination of whether a purchased product is related to a prime motivator product at Step **2010** may be performed based upon class codes as described above with respect to FIG. **2**. As described above, class codes may be assigned on the basis of field of use, product brand name or other product relationships that may be identified by a proprietor of an on-line commercial system.

FIG. **4** illustrates a method **3000** according to another embodiment of the present invention. The method **3000** may filter out certain purchases that would not reflect purchasing decisions of the public-at-large. The method may cross-reference purchasing decisions with customer profiles to determine whether a purchase has been made as part of a routine or represents other ad hoc purchasing decisions.

Herein, a "subscription product" refers to a product that is purchased by a customer as part of a purchasing routine. In the pharmaceutical example discussed above, consider aspirin as an exemplary product. Many people take aspirin daily in an effort to reduce their risk for heart attacks. It may occur in an on-line pharmacy that a customer will initiate periodic shopping sessions to replenish supplies of aspirin. In this example, for that one customer, an on-line site may identify repeated purchases of aspirin and designate aspirin as a subscription product.

The method **3000** permits the on-line system to filter subscription products out of the prime motivator counts. Again, the method **3000** may be invoked when a customer makes a purchase. The method **3000** may begin by retrieving a customer history associated with the customer (Step **3010**). If, when the method is invoked, the system already possesses the customer history by virtue of some earlier act performed during the shopping session, this step may be omitted as duplicative. The method **3000** compares a product identifier of the purchased product with identifiers of subscription products that may be present in the customer history (Step **3020**). The method determines whether there is a match between the product identifier of the purchased product and an identifier of subscription products in the customer history (Step **3030**). If so, the method **3000** may conclude.

If not, the method determines whether the purchased product is related to a current prime motivator (Step **3040**). If the purchased product and the current prime motivator are related, the purchased product is designated a derivative. Within the product database **140**, a derivative count for the purchased product is incremented (Step **3050**). Thereafter, the method **3000** may terminate and, if necessary, return to a larger purchasing routine for completion.

If, at Step **3010**, the purchased product is not related to the current prime motivator, the purchased product itself is designated the current prime motivator (Step **3060**). Within the product database **140**, a prime motivator count for the purchased product is incremented (Step **3070**). Thereafter, the method **3000** may terminate and, if necessary, return to a larger purchasing routine for completion.

As discussed above, operation of Steps **3040–3070** proceed in a manner that is similar to the operation of Steps **1010–1040** in FIG. **2**. These steps provide for only one current prime motivator that may redesignated as determined by the purchasing decisions of a customer. Alternatively, Steps **3040–3070** may operate in accordance with the method **2000** of FIG. **3** and provide for a method that tracks multiple prime motivators.

FIG. **5** illustrates a method **4000** constructed in accordance with a further embodiment of the present invention. The method **4000** provides the functionality of the method **3000** of FIG. **4** but with an additional optimization that permits the method to determine if a purchaser has changed decisions regarding subscription products. In the method **4000**, Steps **4010–4030** proceed in a manner similar to the Steps **3010–3030** recited above with respect to the method **3000**. Step **4040** is reached if a purchased product does not match any of the subscription products in the customer history. At Step **4040**, the method **4000** determines whether the purchased product is related to any of the subscription

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products identified in the customer history. It may do so by comparing class codes of the purchased products with class codes of each of the subscription products identified in the customer history. If the purchased product is related to one of the subscription products, the method may revise the customer history of the customer to remove the one product from the list of subscription products (Step **4050**). At the conclusion of Step **4050** or if no relationship is determined at Step **4040**, the method may advance to one of the methods **1000** or **2000** of FIG. **2** or **3**.

FIG. **6** illustrates another method **5000** according to an embodiment of the present invention. According to method **5000**, prime motivator products may be identified based upon the times between product purchases. According to the embodiment, the method **5000** records the time of the beginning of a shopping session and the time of each product purchase (Steps **5010**, **5020**). At the conclusion of the shopping session, for each purchased product, the method **5000** determines an incremental time of purchased measured as the time between the most recent preceding purchase (Step **5030**). The first purchased product is designated a prime motivator product. Also, purchased products may be designated as prime motivator products if their associated incremental time of purchase is greater than the average time between purchases (Step **5040**). All other products are designated derivative products. The method increments the prime motivator counts and derivative counts of the purchased products in the product database **140**.

Consider the method **5000** in operation using the exemplary purchases illustrated below in Table 1. The table identifies seven purchases. Table 1 below records the times of purchase of each of the products and also the incremental time of purchase for each product.

As shown in the table, the average time between purchases is 1.87 minutes. Two of the seven products, shampoo and bandages, have incremental times of purchase that are greater than the average time between purchases. Accordingly, the shampoo, the bandages (and also the Tylenol) all are designated as prime motivator products under the method **5000** of FIG. **6**. The remaining products are designated derivative products.

TABLE 1

Product	Time of Purchase	Incremental Time of Purchase	Prime Motivator or Derivative?
Tylenol	1 min.	1	Prime Motivator
Thermometer	2 min.	1	Derivative
Shampoo	7 min.	5	Prime Motivator
Conditioner	8 min.	1	Derivative
Hairbrush	9 min.	1	Derivative
Bandages	12 min.	3	Prime Motivator
Topical Antibiotic	13 min.	1	Derivative
Average Time Between Purchases			1.86

The method **5000** of FIG. **6** may be optimized further to account for the standard deviation of times between product purchases. In this optimization, products may be designated prime motivators if their associated incremental times of purchase are greater than the average time between purchases plus the standard deviation of the time between purchases. In the example of Table 1, the standard deviation of the seven purchases is 1.57 minutes. Under this optimization, purchases would be designated prime motivators if the incremental time of purchase is greater that 3.43 minutes (1.86+1.57 minutes).

According to an embodiment, the method **5000** of FIG. **6** will be used when there are a sufficient number of purchased products from which useful statistical values may be derived. If, for example, a shopping session were to include only two purchases, it may be preferable to invoke a method from FIG. **1** or **2** to identify prime motivator products. Thus, the method **5000** optionally may include a step of determining whether the number of purchases exceed a predetermined threshold (Step **5050**). If not, then the method may call one of the methods **1000**, **2000** of FIG. **1** or **2**.

FIG. **7** illustrates another method **6000** according to an embodiment of the present invention. Rather than monitoring product purchases by time as in the method **5000** of FIG. **6**, the method **6000** may identify prime motivator products based upon the number of pages browsed between product purchases.

As is known, many on-line commercial systems present product information to purchasers in the form of browseable web pages. The web pages may include hyperlinks or other pointers that permit customers to request still other web pages of product information (for the same product or other products) offered by the on-line site. According to the embodiment, the method **6000** counts the web pages that are presented to customers during a shopping session and, for each product purchased, records the page number from which the product was purchased. (Steps **6010**, **6020**). At the conclusion of the shopping session, for each purchased product, the method **6000** determines an incremental number of pages associated with the product, measured as the number of pages between the purchased product and the most recent preceding purchase (Step **6030**).

The method **6000** designates the first purchased product as a prime motivator product. Also, purchased products may be designated as prime motivator products if their associated incremental number of pages is greater than the average number of pages between purchases (Step **6040**). All other products are designated derivative products. The method increments the prime motivator counts and derivative counts of the purchased products in the product database **140**.

The method **6000** of FIG. **7** may be optimized further to account for the standard deviation of number of pages between product purchases. In this optimization, products may be designated prime motivators if their associated incremental number of pages between purchases are greater than the average number of pages between purchases plus the standard deviation of the number of pages between purchases.

According to an embodiment, the method **6000** of FIG. **7** will be used when there are a sufficient number of purchased products from which useful statistical values may be derived. If, for example, a shopping session were to include only two purchases, it may be preferable to invoke a method from FIG. **1** or **2** to identify prime motivator products. Thus, the method **6000** optionally may include a step of determining whether the number of purchases exceed a predetermined threshold (Step **6050**). If not, then the method may call one of the methods **1000**, **2000** of FIG. **1** or **2** (Step **6060**).

Accordingly, the present invention provides methods of identifying prime motivator products and derivative products based upon product class codes, time indices and number of pages viewed. The methods and, in particular, the class codes may be tailored for specific applications such as to identify brand loyalty among the consuming public. The present invention also may be further enhanced to filter product purchases and possibly exclude them from being considered as prime motivators or derivatives based upon customer histories.

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Several embodiments of the present invention and exemplary applications are specifically illustrated and described herein. However, it will be appreciated that modifications and variations of the present invention are covered by the above teachings and within the purview of the appended claims without departing from the spirit and intended scope of the invention.

We claim:

1. A method of determining customer motivations in an on-line shopping session, comprising the steps of:

associating a respective set of class codes with each of a plurality of product records in a database; each such product record including respective product information;

retrieving product information for one or more products from the database;

forwarding the retrieved product information to a remotely-located requester;

receiving a purchase selection from the requestor for a particular product;

determining whether the purchased particular product is related to a current prime motivator product;

incrementing in the database a derivative count for the purchased particular product if the purchased particular product is determined to be related to the current prime motivator product; and

if not, incrementing in the database a prime motivator count associated with the purchased particular product and labeling the purchased particular product as the current prime motivator product.

2. The method of claim **1**, wherein the determining step includes a step of comparing a class code associated with the purchased particular product with a class code associated with the current prime motivator product.

3. The method of claim **2**, wherein class codes of the purchased particular product and the current prime motivator product represent fields of use for these products.

4. The method of claim **2**, wherein class codes of the purchased particular product and the current prime motivator product represent brands associated with these products.

5. A method of determining customer motivations in an on-line shopping session, comprising the steps of:

associating a respective set of class codes with each of a plurality of product records in a database; each such product record including respective product information;

retrieving product information for one or more products from the database;

forwarding the retrieved product information to a remotely-located requester;

receiving a purchase selection from the requestor for a particular product;

retrieving a customer history associated with the requestor;

comparing the purchased particular product to subscription products identified in the customer history;

unless the purchased particular product matches a subscription product in the customer history, determining whether the purchased particular product is related to any subscription product identified in the customer history;

if the purchased particular product is related to a subscription product identified in the customer history:

revising the customer history to remove the related subscription product form the customer history,

incrementing in the database a prime motivator count associated with the purchased particular product, and

labeling the purchased particular product as the current prime motivator product.

6. The method of claim **5**, wherein the determining step includes a step of comparing a class code associated with the purchased particular product with a class code associated with the subscription products.

7. The method of claim **6**, wherein class codes of the purchased particular product and the subscription products represent fields of use for these products.

8. The method of claim **6**, wherein class codes of the purchased particular product and the subscription products represent fields of use for these products.

9. A method of determining customer motivations in an on-line shopping session, comprising the steps of:

retrieving product information for one or more products from the database, said database including a plurality of product records having respective product information;

forwarding the retrieved product information to a remotely-located requestor;

receiving a plurality of purchase selections from the requestor for a respective particular product;

recording the time of the beginning of the on-line shopping session,

recording the time of receiving each purchase selection throughout the on-line shopping session, and at the conclusion of the on-line shopping session:

determining the average time between purchase selections,

incrementing in the database a prime motivator count associated with a product of the first purchase selection,

incrementing in the database a prime motivator count associated with a product of any purchase selection having an incremental purchase time that is greater than the average time between purchase selections, and

for all other purchase selections, incrementing in the database a derivative count associated with products purchased in those purchase selections.

10. A method of determining customer motivations in an on-line shopping session, comprising the steps of:

associating a respective set of class codes with each of a plurality of product records in a database; each such product record including respective product information;

retrieving product information for one or more products from the database;

forwarding the retrieved product information to a remotely-located requester;

receiving a purchase selection from the requestor for a particular product;

determining whether the purchased particular product is related to any prior prime motivator product;

incrementing in the database a derivative count for the purchased particular product if the purchased particular product is determined to be related to any prior prime motivator product; and

if not, incrementing in the database a prime motivator count associated with the purchased particular product and designating the purchased particular product as a prime motivator product.

11. A method of determining customer motivations in an on-line shopping session, comprising the steps of:

retrieving product information for one or more products from the database, said database including a plurality of product records having respective product information;

presenting the retrieved product information to a remotely-located requestor via a plurality of web pages;

receiving a plurality of purchase selections from the requestor for a respective particular product;

maintaining a count of web pages presented to the requestor,

for each purchase selection received during the on-line shopping session, recording the web page count associated with the purchase selection, and at the conclusion of the on-line shopping session:

determining the average web page count between purchase selections,

incrementing in the database a prime motivator count associated with a product of the first purchase selection,

incrementing in the database a prime motivator count associated with a product of any other purchase selection having an incremental web page count that is greater than the average web page count, and

for all other purchase selections, incrementing in the database a derivative count associated with products purchased in those purchase selections.

12. The method of claim **10**, wherein the determining step includes a step of comparing a class code associated with the purchased particular product with class codes associated with each prior prime motivator product.

13. The method of claim **12**, wherein class codes of the purchased particular product and prior prime motivator products represent fields of use for these products.

14. The method of claim **12**, wherein class codes of the purchased particular product and prior prime motivator products represent brands associated with these products.

15. A method of determining customer motivations in an on-line shopping session, comprising the steps of:

associating a respective set of class codes with each of a plurality of product records in a database; each such product record including respective product information;

retrieving product information for one or more products from the database;

forwarding the retrieved product information to a remotely-located requestor;

receiving a purchase selection from the requestor for a particular product;

retrieving a customer history associated with the requestor;

comparing the purchased particular product to subscription products identified in the customer history;

unless the purchased particular product matches a subscription product in the customer history, determining whether the purchased particular product is related to a current prime motivator product;

incrementing in the database a derivative count for the purchased particular product if the purchased particular product is determined to be related to the current prime motivator product; and

if not, incrementing in the database a prime motivator count associated with the purchased particular product and labeling the purchased particular product as the current prime motivator product.

16. The method of claim **15**, wherein the determining step includes a step of comparing a class code associated with the purchased particular product with a class code associated with the current prime motivator product.

17. The method of claim **16**, wherein class codes of the purchased particular product and the current prime motivator products represent brands associated with these products.

18. The method of claim **16**, wherein class codes of the purchased particular product and the current prime motivator products represent fields of use for these products.

19. A method of determining customer motivations in an on-line shopping session, comprising the steps of:

associating a respective set of class codes with each of a plurality of product records in a database; each such product record including respective product information;

retrieving product information for one or more products from the database;

forwarding the retrieved product information to a remotely-located requestor;

receiving a purchase selection from the requestor for a particular product;

retrieving a customer history associated with the requestor;

comparing the purchased particular product to subscription products identified in the customer history;

unless the purchased particular product matches a subscription product in the customer history, determining whether the purchased particular product is related to any prior prime motivator product;

incrementing in the database a derivative count for the purchased particular product if the purchased particular product is determined to be related to any current prime motivator product; and

if not, incrementing in the database a prime motivator count associated with the purchased particular product and labeling the purchased particular product as a prime motivator product.

20. The method of claim **19**, wherein the determining step includes a step of comparing a class code associated with the purchased particular product with class codes associated with each prior prime motivator product.

21. The method of claim **20**, wherein class codes of the purchased particular product and prior prime motivator products represent fields of use for these products.

22. The method of claim **20**, wherein class codes of the purchased particular product and prior prime motivator products represent brands associated with these products.

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