



US007599855B2

(12) **United States Patent**  
**Sussman**

(10) **Patent No.:** **US 7,599,855 B2**

(45) **Date of Patent:** **Oct. 6, 2009**

(54) **SYSTEM AND METHOD FOR A COMPLETE AND CONVENIENT SHOPPING EXPERIENCE**

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(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 224 days.

(21) Appl. No.: **09/781,698**

(22) Filed: **Feb. 13, 2001**

(65) **Prior Publication Data**

US 2002/0161658 A1 Oct. 31, 2002

(51) **Int. Cl.**

**G06F 17/60** (2006.01)

(52) **U.S. Cl.** ..... **705/26**

(58) **Field of Classification Search** ..... **705/26, 705/27, 16**

See application file for complete search history.

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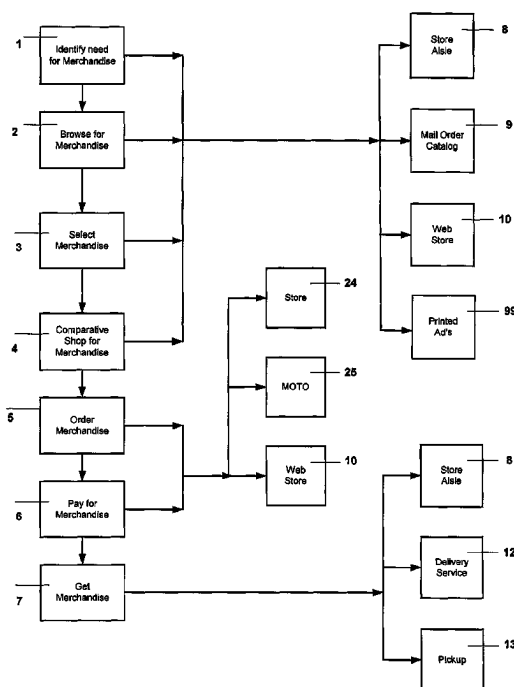
(57) **ABSTRACT**

A method and system whereby a consumer creates a shopping list using a portable barcode scanner and an intelligent base-station. The entered barcodes are downloaded to the base-station from the barcode scanner. The base-station retrieves related barcode information from a barcode database via the Internet. The barcode database can belong to a merchant, or a generic shopping service.

The base-station can be a consumer's computer, or some other smart electronic device. The base-station maintains a predictive shopping list database for all barcodes entered via the barcode scanner. The database learns the shopping consumption habits of the consumer over a period of time and ensures that when the consumer is ready to shop no previously needed, but currently forgotten, items are left off of the shopping list.

The consumer uses this method to shop in a store, or via Mail-Order/Telephone-Order or on the internet using the created shopping list.

**18 Claims, 2 Drawing Sheets**



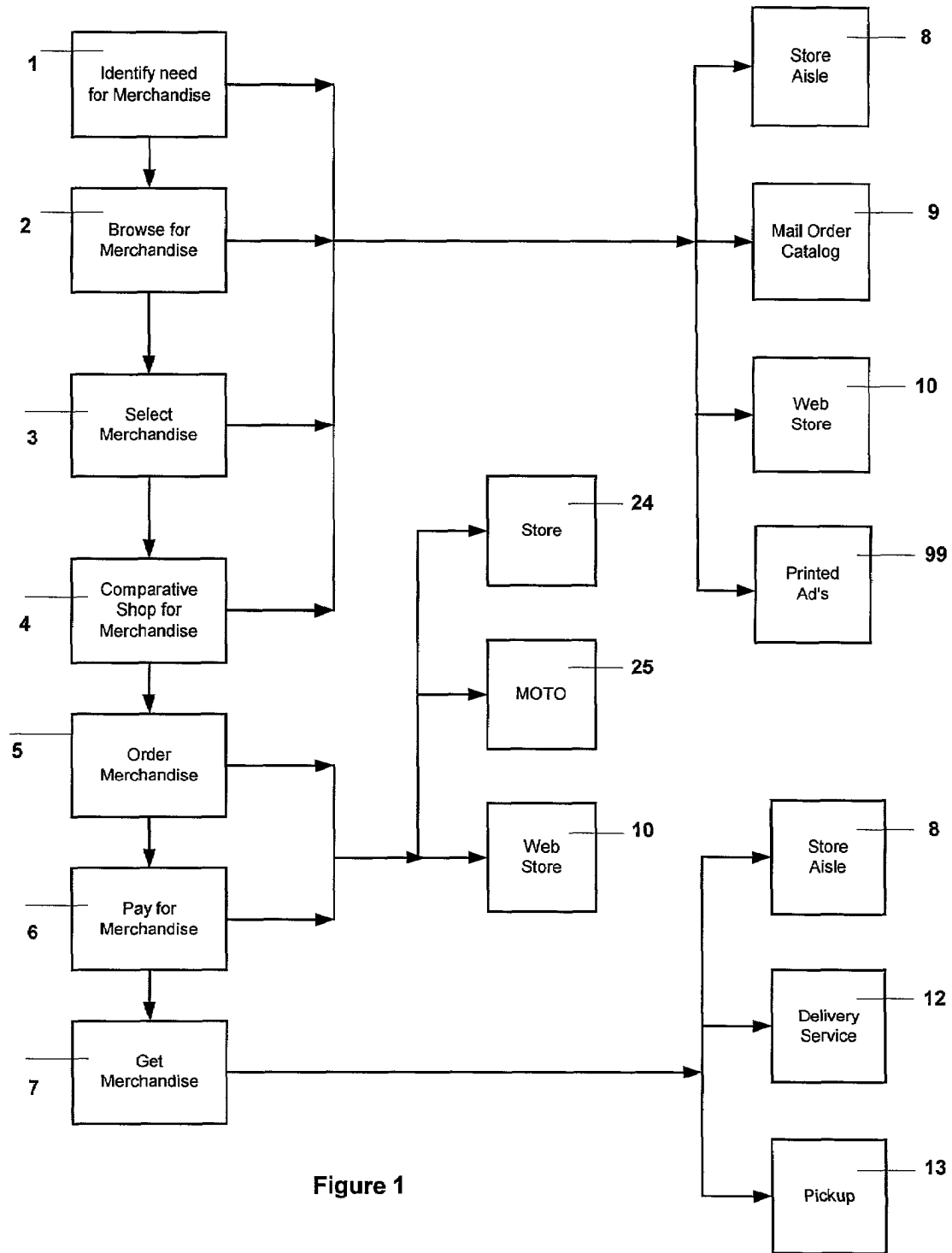


Figure 1

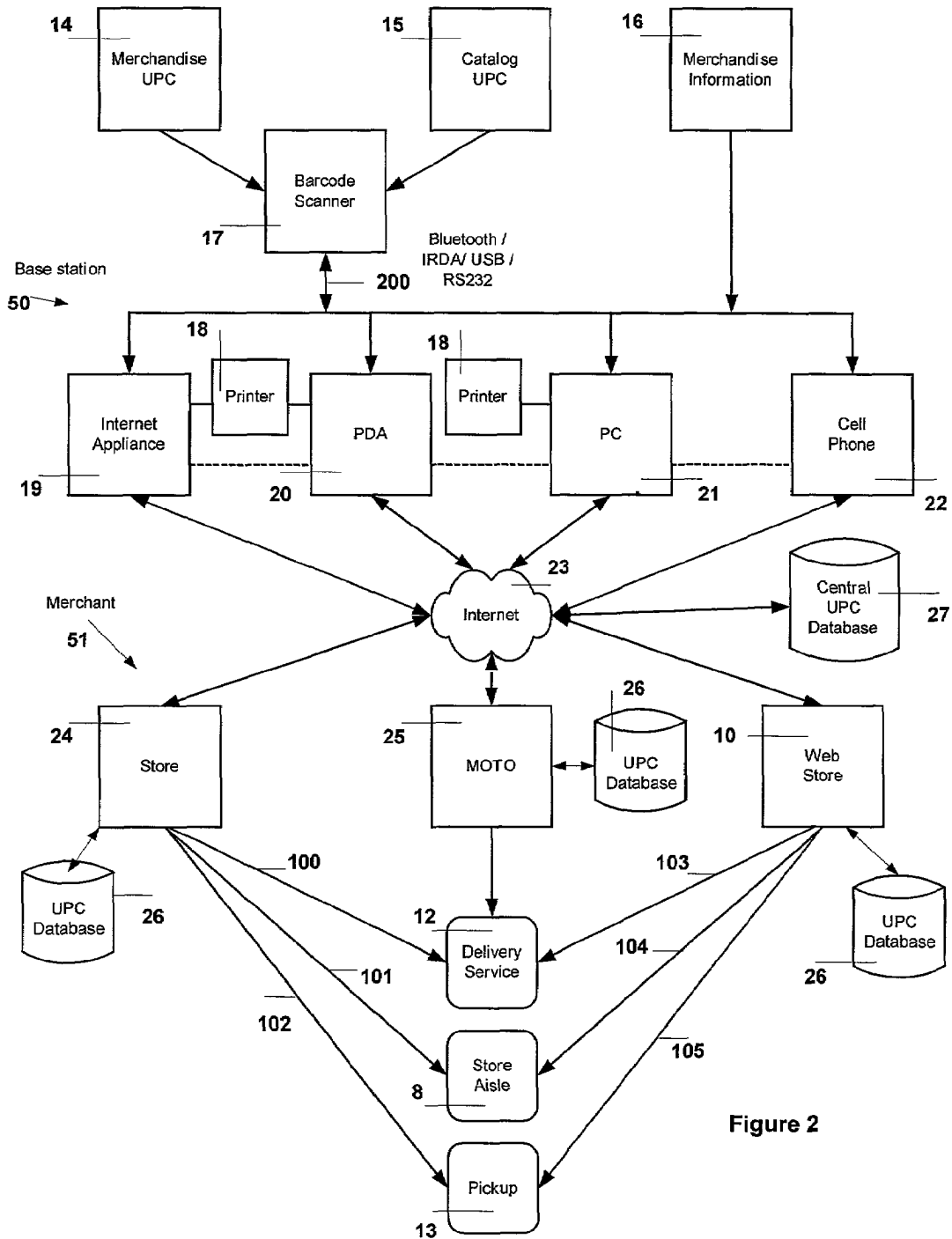


Figure 2

# SYSTEM AND METHOD FOR A COMPLETE AND CONVENIENT SHOPPING EXPERIENCE

## BACKGROUND OF THE INVENTION

Today shoppers have a number of choices to shop for and to buy merchandise.

The usual way is for a consumer to go to a store, with or without a shopping list, locate the required items on the store's shelves, purchase them and then take the items home, or to work.

The first major evolution of shopping was the mail order catalog, which was first established in Chicago by Aaron Montgomery Ward and his brother-in-law George R. Thorne. By 1904, three million catalogs weighing 4 pounds each were being mailed to consumers. The next step in the shopping experience evolution was the advent of telephone catalog ordering.

Today these two shopping methods have been combined into a method called MOTO, i.e. Mail Order/Telephone Order. The MOTO purchasing model has a consumer browse a catalog that was mailed to the consumer; the consumer calls the mail order house's phone number and purchases the selected item, usually with a credit card. The merchandise is shipped to the consumer.

A recent historical evolution for shoppers occurred when the Internet exploded on the marketplace around about 1996. The current terminology for this method of consumer shopping is called e-commerce and B2C (i.e. Business To Consumer). According to the October 2000 report by NetValue ([www.netvalue.com](http://www.netvalue.com)), 74.2 percent of the 52 million Internet connected US households visited an e-commerce web site. 40.6 percent of these households connected using a secure connection. This usually implies that a purchase was made or was considered over the Internet. The e-commerce shopping model is similar to the MOTO model, i.e. a consumer browses an online catalog, purchases the selected item with a credit card and the merchandise is shipped to the consumer. Various retailers have adopted this business model, e.g. groceries can be ordered online and delivered to a consumer. Examples of these grocery businesses include WebVan and Peapod. Other consumer e-commerce sites include Amazon.com and Store-Runner.

According to an Aug. 11, 2000 US Census Bureau news release, in 1997 sales of all kinds of merchandise from electronic shopping (e.g. via the Internet) and mail-order houses sold \$79 billion of goods. Computer hardware, software and supplies accounted for 29 percent; clothing and footwear, 15 percent; and drugs, health aids and beauty aids, 13 percent. Details of this 1997 US Census Bureau report can be found on the Internet at [www.census.gov/epcd/www/econ97.html](http://www.census.gov/epcd/www/econ97.html).

Another interesting consumer shopping business model is the one from Qode Inc. ([www.qode.com](http://www.qode.com)) This model has consumers scanning in Uniform Product Code (UPC) bar codes with a portable device called a Qoder. The bar codes are then transferred via a Qoder "base-station" device attached to the keyboard port on a PC. The bar codes are then uploaded to the Qode web site on the Internet and into a consumer's personal directory. Qode then searches for online deals and special promotions, or provides the nearest stores to the consumer that sells the scanned products. Qode is working on extending the means by which the consumer accesses their pricing web site, e.g. by manually entering the bar code via a cell phone or regular phone. A similar methodology is claimed by BarPoint.com ([www.barpoint.com](http://www.barpoint.com)), which claims to have a patent pending on "search engine technology

to allow businesses and consumers to use the UPC barcode number that appears on more than 100 million retail items to instantly obtain detailed product and price information from the Internet . . . . This information includes detailed product descriptions, comparative prices, links to order the product from vendor partners, product reviews, manufacturer contact information and much more." Problems with this system include forcing the consumer to connect to a central site to obtain a list of the scanned in bar codes and their description. Furthermore the keyboard interface requires specialized device drivers to be written for each personal computer (PC) operating system, e.g. MS Windows 95/98/NT/2000/ME/CE, Apple, Linux, Palm OS, etc.

U.S. Pat. No. 6,129,276 from Jelen, et al. teaches a similar model to the Qode shopping model. The '276 patent teaches the use of a user terminal that has a UPC bar code scanner through which the user compiles a shopping list database. At this stage the user can selectively transmit the acquired shopping list database to a base unit located at a retailer via a network, such as the Internet. The central database can then shop for competitive products on the users shopping list, provide information on any coupons related to items on the shopping list and provide information on various options for specific products, e.g. various packaging sizes, etc. Similar problems with the Qoder apply to this patent as well, i.e. every time the consumer must connect to a central site to obtain a list of the scanned in bar codes and their description.

U.S. Pat. No. 5,884,281 from Smith, et al. teaches an electronic grocery list device which provides the consumer with a predetermined list of various common groceries from which the consumer assembles his own grocery list. The consumer's grocery list can be transmitted to a grocer via either a fax or data modem. Furthermore the consumer can print her grocery list via a printer attached to the '281. The '281 does not use a bar code scanner for input, not does it provide comparison-shopping like the '276 and Qode system do.

U.S. Pat. No. 5,483,472 from Overman teaches a portable electronic food shopper similar to a pocket calculator. The '472 does not interface with bar code scanners, or a central database, which provides other services including comparative online shopping.

An application on the Cybiko wireless appliance ([www.cybiko.com](http://www.cybiko.com)) called the Grocery List provides consumers with a portable device in which to enter and carry a shopping list within. This is similar in principal to using various Personal Digital Assistants (PDAs) such as from Palm, HandSpring and Psion in which a consumer can use the To Do List function to maintain a shopping list.

Consumers use newspaper advertisements to help them shop. The Sunday newspapers are usually full of ad's that help guide a consumer. Another tried and tested method to shop is by word of mouth. Consumers share information about where they have purchased items, etc.

## OBJECTIVES OF THE PRESENT INVENTION

The objective is to provide the consumer with an array of convenient and easy to use choices with which the consumer is comfortable with in any variety of shopping experience. These shopping experiences include:

Routine groceries, e.g. weekly milk, bread, vegetable, etc. needs.  
 One-time merchandise, e.g. for gifts, clothing, etc.  
 Choices for taking the product in hand, i.e. delivery, pickup, etc.

#### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic of the process that a consumer goes through when shopping for merchandise.

FIG. 2 is a schematic of the invention's preferred embodiment of the shopping process outlined in FIG. 1.

#### DETAILED DESCRIPTION OF THE INVENTION

Before describing the preferred embodiment of the current invention, we first must consider what a consumer generally does today when shopping for any item. In FIG. 1 it can be seen that the shopping process a consumer undertakes is described Table 1:

TABLE 1

General Consumer's Shopping Experience Process The Average Shopping Experience	
Process Step	Process Step Description
1.	The consumer identifies a need for the merchandise 1. This could simply be the fact that a family member or friend's birthday is fast approaching, or it could be the fact that the consumer has thrown out an empty milk container and he is dying for a cup of coffee with milk.
2.	Once a need for an item has been identified 1, the consumer usually browses for the merchandise. This can be done in a store aisle 8, in a mail order catalog 9 or on a web site 10 on the Internet. Some consumers use the newspaper ad's 99 to browse for merchandise.
3.	The next step in the shopping experience is to select the merchandise 3 that the consumer wishes to acquire. Once again, this can be done in a store aisle 8, in a mail order catalog 9 or on a web site 10 on the Internet.
4.	At this stage, the consumer has in mind what he is looking for. The next step is usually to comparative shop for the item 4. For example, if the consumer is in a store, then the consumer will search various shop aisles 8 for similar products that are cheaper; or may have different features for the same price. Similarly, a consumer may browse through more than one mail order catalog 9 and locate a similar item that was selected 3. It is relatively common for a web store 10, e.g. buy.com or pricewatch.com, to locate similar items as the one selected by the consumer 3.
5.	Finally the consumer decides to get the merchandise, i.e. to order merchandise 5. Depending on the type of shopping that the consumer is doing, this could be either in a store 24 (i.e. what's called these days a 'brick-and-mortar' store), via the telephone and MOTO 25, or on the Internet via a web store 10.
6.	The next step is to pay for the merchandise 6. Depending on which shopping model the consumer is engaged in; this step can be one of the following payment forms: a. Cash, b. Check, c. Credit card, d. Cash on delivery (COD), or e. Money order. Generally in a store 24, the consumer will pay by credit card, check or cash. For a MOTO 25 transaction the consumer usually uses a credit card, but sometimes uses COD. Shopping online at a web store 10, the consumer will generally pay using a credit card. Other forms of payment methods have attempted to be incubated on the Internet 23, e.g. cybercash (e.g. U.S. Pat. No. 6,061,665 issued to Bahreman et al. and U.S. Pat. No. 5,815,657 issued to Williams et al.), but none have caught on to date.
7.	The final step, ignoring for the moment a 'normal' shopping experience of returning purchased merchandise, is to get the merchandise 'in hand' 7. The consumer generally has a choice of taking the merchandise from the store aisle 8, having the merchandise delivered 12 or picking up the merchandise 13. Generally in this embodiment, pickup 13 is considered as a drive-through pickup, similar to drive-through banks, fast food stores, etc. The pickup 13 methodology is discussed further in Table 4.

We will now consider some of the problems that the average consumer encounters in the above shopping experience method, i.e. steps 1 through 7 as outlined in FIG. 1.

#### Shopping Lists

As attested in the Background of the Invention, one of the greatest hassles in shopping is remembering what you must buy. The simplest way is to write down a list of items on a piece of paper from which you cross off items as you buy them. One of the problems with this method is the case when you are compiling the list of a period of time, e.g. days. In this case you need to remember where you put your slip of paper and preferably keep it at hand wherever you are. Inspiration tends to arrive at odd and unexpected moments.

Let us consider an example in this shopping list case, i.e. groceries. It is extremely rare that a household's groceries all run out at the same time. It is more common that you run out of say broccoli sprouts on Monday evening, oranges on Monday morning, coffee on Tuesday morning, bread on Tuesday evening, yogurt on Wednesday morning, milk on Thursday,

fish on Friday, etc. Sure you can keep a running list of items as they run out and some people attach the list to a magnet on the fridge. Now that's ok for items that are kept in the kitchen. What happens when you need household items outside of the kitchen? For example, if a consumer's washing machine is in his basement. What happens when he needs washing powder or bleach? If he is keeping a shopping list on his fridge, the consumer needs to remember that he needs washing powder and bleach the next time he is in the vicinity of the master list.

Let us now consider another shopping list case, e.g. Christmas gift shopping. Sometimes we know exactly what we want to buy people for Christmas, but often we don't have a clue except when we see something in a store or in a catalog. At the time we see the item, we may not be ready to buy it, perhaps because we believe that we can get a better price somewhere else, or perhaps we hope that another item may be more inspirational. But, we should note the item's price and who's selling it. Once again the tried and tested method is a pen and paper. The more organized shopper may have a diary/planner in which she writes this information. On the other hand, she may be open to high tech and may use a PDA **20**. Yet again, the consumer may simply rely on her memory. The problem with the pen and paper is that the consumer may lose or misplace the piece of paper. It's also a bit of a hassle to write down all of the item's details. The problem with the PDA **20** is that you have to lug it around with you and then manually enter the pertinent information. It's another unseemly bulge in a man's pocket and further clutter in a woman's wallet. A person's memory is generally not 100% reliable and hence as we've all experienced the situation—"where did I see that really cool and reasonable thingy for Mom?".

#### Shopper's Barcode Scanner

Referring to FIGS. **1** and **2**, the preferred embodiment of the invention solves this problem, i.e. maintaining the shopping list, with the following method and system. The consumer primarily uses a small wireless bar code scanner **17** that he uses to scan in merchandise UPCs **14** and or catalog UPCs **15**, depending on whether he is shopping via a store **24**, MOTO **25** or on a web store **10**. For purposes for brevity, newspaper ad's **99** are included in the grouping of merchandise catalogs. The wireless bar code scanner **17** could for example be the Qoder from Qode, or the CS 1504 Consumer Memory Scanner from Symbol Technologies.

This means that (a) mail order catalogs/newspaper advertisements **99** need to include UPC barcodes and (b) web pages need to include UPC barcodes as well, that can be scanned, or transferred, to the barcode scanner **17**.

The barcode scanner **17** need not necessarily be a portable device that is homed via a magnet on the fridge door. It could, for example, be incorporated (i.e. fixed) into the fridge door itself as proposed by a number of home appliance manufacturers, or it could be part of the trashcan. GE revealed such a kitchen appliance, i.e. a refrigerator, in a press release titled "GE Appliances Reveals Consumer Benefits of Concept Smart Appliances", Apr. 6, 2000, PRNewswire.

If the scanner **17** is part of, say the lid of a trash can, then as the consumer discards an empty item, she could easily scan the UPC. The problem with fixed barcode scanners **17** is that there are numerous situations in which a portable barcode scanner **17** is needed. For example, consider the scenario where goods are not stored in the fridge, but are stored in various cupboards and in the pantry. The preferred embodiment uses a portable barcode scanner **17**, but envisages consumers using fixed appliance barcode scanners as well. Furthermore, the consumer may also have multiple portable barcode scanners **17**. The key to multiple scanners **17** is that they

need to communicate **200** with a base station **50**. This function **200** is considered later in the description of the preferred embodiment.

The scanned in UPCs need to be interpreted by a more intelligent device, i.e. a base station **50**, for example an Internet Appliance **19**, or a PDA **20**, or a PC **21** or a cell phone **22**. Examples on the marketplace of Internet Appliances **19** include the Touch Pad from Gateway and the iPAQ from Compaq. Examples of PDAs include the Palm from Palm Inc., the Visor from Handspring and similar devices from Psion and other companies. The realm of UPCs and their description consist of a huge database, i.e. millions upon millions of products. To store this size of database on a PDA **20**, etc. is not a good idea, because a primary reason being that products are constantly added and removed from the UPC system. Hence it would be a huge task to update all of the UPC databases on each and every consumer's intelligent device. It is a better solution to centralize this task as Qode and the '276 from Jelen, et al. have done. The preferred embodiment implements a similar scheme to resolve bar codes in which central databases are maintained by the merchandise store **24**, the MOTO **25** vendor and the web store **10**, i.e. the merchant **51**. In FIG. **2**, another model is shown to resolve the UPCs, i.e. a centralized UPC database **27**, that holds all known UPCs.

The Uniform Code Council, Inc. (UCC) is a not-for-profit organization that provides standards and processes in the bar code industry. UCC also assigns unique blocks of bar codes to a company. UCC ([www.uc-council.org](http://www.uc-council.org)) has over 850,000 member companies that are using the EAN.UCC Systems standards. The UCC could potentially be a candidate for the Central UPC Database **27**.

After transmitting **200** the UPCs that the consumer is considering to a base station **50** that can import the UPCs stored on the bar code scanner **17**, the base station **50** connects via the Internet **23** to the UPC database stored at the merchant **51**, or at the Central UPC Database **27**, to download the textual description of the UPC that the consumer had scanned into her bar code scanner **17**. Coupons (i.e. e-coupons) and other information can also be downloaded at this instant. This is the method whereby the consumer maintains her shopping list in whichever device she is most comfortable with, i.e. her Internet Appliance **19**, her PDA **20**, her PC **21**, her cell phone **22**, etc. The preferred embodiment of the invention allows the consumer to share her various shopping lists on multiple devices, i.e. base stations **50**. More about this feature later in the detailed description of the preferred embodiment.

A word about e-coupons based on an article in Business Week magazine titled "Penny-Pincher's Paradise", Jan. 22, 2001: in the US approximately 256 billion coupons are distributed annually. Currently less than 1% is distributed as e-coupons and Sunday newspapers distribute about 80% of coupons. Only 1.2% of Sunday newspaper coupons are redeemed, whereas 57% of e-coupons are redeemed. According to a report by the NPD Group Inc., grocery e-coupons are the most popular accounting for a redemption rate of 59%, followed by books with 32%, health products 30% and music products with 26%. Today web sites such as coupons.com and coolsavings.com allow a consumer to print a coupon and redeem it at a local store. The preferred embodiment provides the means for a consumer to scan the e-coupon and other coupons into a barcode scanner **17**, which is then made available via a base station **50** for redemption.

The preferred embodiment's barcode scanner **17** includes firmware such that UPC descriptions can be stored and displayed on the device. This allows the consumer to take the barcode scanner on a shopping expedition, e.g. to a store **24**. As is indicated in FIG. **2**, the communication link **200**

