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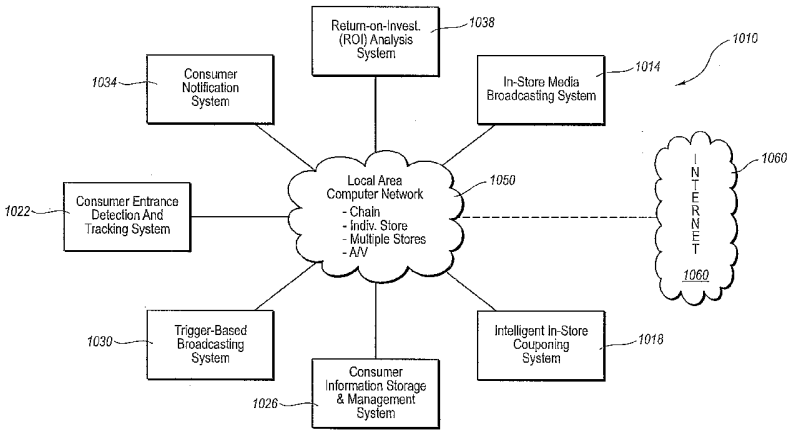

(57) Abstract: The present invention relates to methods of optimizing marketing including measuring customer response, optimizing advertising in response to the customer response data, and providing an intelligent coupling system. One embodiment of the present invention relates to a method of acquiring data about the advertising preferences of particular groups of customers. Another embodiment of the present invention relates to optimizing advertising variable settings with respect to acquired advertising data in an effort to identify optimized advertising variable settings for identifiable groups of customers. Yet another embodiment of the present invention relates to a method of generating an advertisement with optimized advertisement variable settings for an advertising target group. Yet another embodiment of the present invention relates to measuring customer response data of various message media and combinations of message media. Yet another embodiment of the present invention relates to a method for providing an intelligent in-store couponing system comprising an operating computer for controlling the functions of the intelligent in-store couponing system; a coupon database capable of storing coupons and coupon data or information; a coupon management module for managing the coupons and their delivery; and at least one coupon delivery system capable of delivering a coupon to a customer.

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SYSTEMS AND METHODS FOR OPTIMIZING MARKETING

1. Field of the Invention

The present invention relates to methods of optimizing marketing. More particularly, the present invention relates to methods of acquiring advertising data, methods of optimizing advertising variable settings in response to acquired data, methods of implementing smart couponing, and methods of effective direct marketing.

2. Background

Advertising is the process through which companies attempt to convince customers to purchase their products. Advertising takes many forms including radio advertisements, in-store audio advertisements, television advertisements, billboards, etc. The production and broadcasting of these advertisements has become more and more expensive. Companies wish to maximize the effect of their advertisements by determining the most effective message to promote. Numerous marketing textbooks and classes discuss this field.

In order to sell advertising to companies, particular information must often be provided which illustrates the effects of the advertising. The advertising industry standard for analyzing the effectiveness of an advertisement is the metric values of reach and frequency with which the advertisement is received by customers. The reach is the percentage of customers who are exposed to the advertisement and the frequency is the number of times an individual customer is exposed to the same advertisement. Companies generally wish to maximize their reach for a certain maximum frequency. This value is generally expressed in the form of a RF curve of reach versus rating points, wherein each rating point has an associated price value. Unfortunately, these metric values are rarely analyzed for in-store advertising because of the availability of sales information.

One of the major obstacles in creating effective advertising is determining a customer's response to a particular advertisement. Traditionally companies have used focus groups and surveys in order to obtain customer response information about their products and/or advertisements. This customer response information can then be used to adjust or manipulate their advertisements. Unfortunately, these techniques of generating customer response information have been found to be inadequate and often inaccurate. Therefore, there is a need for a new method of generating customer response information that is both efficient and reliable.

Another problem with maximizing the effectiveness of advertising is the significant time delay between obtaining the customer response data, creating the advertisement, and broadcasting the advertisement. In many circumstances, the initial data indicating what will be effective in advertising a particular product may expire or become inaccurate. Therefore, there is also a need for a process that is able to efficiently generate an advertisement with respect to time sensitive customer response data.

Yet another problem with maximizing the effectiveness of advertising is the need to identify the most appropriate target audience. Some products are purchased by a wide variety of customers such as toilet paper and toothpaste while others are purchased by only a particular group. A significant loss in advertising effectiveness results if a wide-use product is only advertised to a select group of customers. Therefore, there is a need in the industry for a process of identifying a target group for a particular product, which can then be used to maximize the efficiency of a particular advertisement directed at selling the product.

SUMMARY

The present invention relates to methods of optimizing marketing including measuring customer response, optimizing advertising in response to the customer response data, and providing an intelligent couponing system. One embodiment of the present invention relates to a method of acquiring data about the advertising preferences of particular groups of customers. For example, this data may include analyzing the shopping response of all married female shoppers over 40 years of age after a particular advertisement is played; this shopping response could then be compared with the shopping response of a similar group after a different advertisement is played. Another embodiment of the present invention relates to optimizing advertising variable settings with respect to acquired advertising data in an effort to identify optimized advertising variable settings for identifiable groups of customers. Yet another embodiment of the present invention relates to a method of generating an advertisement with optimized advertisement variable settings for an advertising target group. For example, if data indicates that a particular demographic responds to a male advertiser, the advertisement will be spoken with a male voice and played during that time period. Yet another embodiment of the present invention relates to measuring customer response data of various message media and combinations of message media. Yet another embodiment of the present invention relates to a method for providing an intelligent in-store couponing system comprising

an operating computer for controlling the functions of the intelligent in-store couponing system; a coupon database capable of storing coupons and coupon data or information; a coupon management module for managing the coupons and their delivery; and at least one coupon delivery system capable of delivering a coupon to a customer.

This technology provides numerous advantages over the prior art including arbitrary audience targeting and near real time measurement and adjustment. Arbitrary audience targeting allows for advertisements to be tailored to specifically target a particular group of customers. Real time measurement includes identifying the customer response to a particular advertisement.

These and other features and advantages of the present invention will be set forth or will become more fully apparent in the description that follows and in the appended claims. The features and advantages may be realized and obtained by means of the instruments and combinations particularly pointed out in the appended claims. Furthermore, the features and advantages of the invention may be learned by the practice of the invention or will be obvious from the description, as set forth hereinafter.

BRIEF DESCRIPTION OF THE DRAWINGS

In order that the manner in which the above-recited and other advantages and features of the invention are obtained, a more particular description of the invention briefly described above will be rendered by reference to specific embodiments thereof which are illustrated in the appended drawings. Understanding that these drawings depict only typical embodiments of the invention and are not therefore to be considered limiting of its scope, the invention will be described and explained with additional specificity and detail through the use of the accompanying drawings in which:

Figure 1 illustrates a representative system that provides a suitable operating environment for use of the present invention;

Figure 2 is a flow chart illustrating one embodiment of a method for optimizing an advertisement in response to customer data;

Figure 3 is a flow chart illustrating one embodiment of a method for acquiring customer response data including optimum advertising variable settings for a plurality of advertising groups;

Figure 4 is a flow chart illustrating one embodiment of a method for broadcasting a plurality of test advertisements with unique sets of advertisement variable settings;

Figure 5 is a flow chart illustrating one embodiment of a method for generating an advertisement with optimized advertising variable settings for an advertising target group;

Figure 6 is a flow chart illustrating one embodiment of a method for automatically broadcasting an efficient advertisement with respect to present customers;

Figure 7 is a chart illustrating various customer response metric measurements in response to a particular media;

Figure 8 is a group of charts which each illustrate RF curves of customer response to a particular media;

Figure 9 illustrates a general diagram of an intelligent marketing system comprising several constituent systems linked together by a computer network;

Figure 10 illustrates a representative system that provides a suitable operating environment for use of the present invention;

Figure 11 illustrates a general network-based system in which the technology of the present invention may be implemented;

Figure 12 illustrates a network diagram of an exemplary operating arrangement of a basic intelligent in-store couponing system;

Figure 13 illustrates a network diagram of an exemplary operating arrangement of a centrally controlled intelligent couponing system;

Figure 14 illustrates a network diagram of an exemplary intelligent in-store couponing system as integrated with an in-store media broadcasting system and a customer detection and tracking system;

Figure 15 illustrates an exemplary paper couponing system;

Figure 16 illustrates an exemplary paperless or paper couponing system;

Figure 17 illustrates the operating computer of the intelligent in-store couponing system and its ability to access various system databases;

Figure 18 illustrates a flow diagram of a method for providing general intelligent couponing;

Figure 18 illustrates a flow diagram of a method for providing intelligent couponing by integrating into the couponing system an in-store media broadcasting system;

Figure 19 illustrates a flow diagram of a method for providing intelligent couponing by integrating into the couponing system a customer entrance detection and tracking system;

Figure 20 illustrates a general flow diagram of an exemplary in-store couponing method using the intelligent in-store couponing system of the present invention; and

Figure 21 illustrates a flow diagram of an embodiment of a couponing system incorporating the ability to determine if a requested coupon exists.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes that come within the meaning and range of equivalency of the claims are to be embraced within their scope.

The present invention relates to methods of optimizing marketing including measuring customer response, optimizing advertising in response to the customer response data, and providing an intelligent couponing system. One embodiment of the present invention relates to a method of acquiring data about the advertising preferences of particular groups of customers. For example, this data may include analyzing the shopping response of all married female shoppers over 40 years of age after a particular advertisement is played; this shopping response could then be compared with the shopping response of a similar group after a different advertisement is played. Another embodiment of the present invention relates to optimizing advertising variable settings with respect to acquired advertising data in an effort to identify optimized advertising variable settings for identifiable groups of customers. Yet another embodiment of the present invention relates to a method of generating an advertisement with optimized advertisement variable settings for an advertising target group. For example, if data indicates that a particular demographic responds to a male advertiser, the advertisement will be spoken with a male voice and played during that time period. Yet another embodiment of the present invention relates to measuring customer response data of various message media and combinations of message media. Yet another embodiment of the present invention relates to a method for providing an intelligent in-store couponing system comprising an operating computer for controlling the functions of the intelligent in-store

couponing system; a coupon database capable of storing coupons and coupon data or information; a coupon management module for managing the coupons and their delivery; and at least one coupon delivery system capable of delivering a coupon to a customer. While embodiment of the present invention are directed at methods of acquiring advertising data and optimizing advertisements, it will be appreciated that the teachings of the present invention are applicable to other areas.

As used in this specification, the following terms are defined accordingly:

"advertisement" includes all forms of advertising; including but not limited to audio, video, still visual, touch, taste, smell, and any combination thereof.

"optimized advertisement" is an advertisement that is specifically optimized for an advertising target group.

"customer response data" includes identifying various customer reactions to an advertisement with respect to advertising variable settings included in the advertisement. These reactions include but are not limited to purchasing a product, not purchasing a product, changing routine, and leaving the store. Therefore, complete customer response data will include correlating various customer reactions with customer information and advertising variable settings.

"advertising variable settings" include the settings of various variables that affect how an advertisement is perceived. These variables include but are not limited to frequency, duration, play time, volume, gender of speaker(s)/actor(s), sound/video icons, smell icons, taste icons, background music/scenery, sound effects, special effects, presence/absence of pricing information, variations in pricing, variations in offer, value added content, seasonal related message, category promotions, variations on the product message, and promotional offers.

"optimized advertising variable settings" is a set of advertising variable settings that are optimized for a particular advertising target group.

"advertising group" is a group of people who share at least one characteristic or trait.

"advertising target group" is a group of people who share at least one characteristic and who are targeted for a particular advertisement. For example, males over 50 years old may be an advertising target group for a luxury automobile.

"test advertisement" is an advertisement or message that is played for a purpose including but not limited to obtaining customer response data.

"customer response device" is a device that measures a customers response. For example, a loyalty/membership card, a point-of-sale device, a credit-card related device, an RFID, a survey response device, etc.

"customer information device" is a device that transfers information about a customer. A customer information device may or may not be the same as a customer response device. For example, a customer loyalty card includes customer information but an RFID located on a particular product does not contain any customer information.

"advertisement components" are various components of an advertisement that can be used independently or compiled with other components to create a complete advertisement. For example, various prices may be recorded for an audio advertisement and then compiled with other information into complete advertisements as the price of a particular item is lowered.

"optimization algorithm" is a procedure that is used to obtain the most efficient variable setting for a unique input. For example, if a store has 2 women, 8 men, and 4 children, an optimization algorithm could utilize known data to determine what is the most efficient set of advertising variable settings for that particular scenario. Likewise, an optimization algorithm can be used to determine the optimum advertising variable settings for a particular advertising group in relation to a set of customer response data.

"metric" is a standard customer response measurement including but not limited to reach, frequency, sales, awareness, etc.

"media" is the vehicle through which an advertisement or message is broadcast to customers. Media includes but is not limited to audio, video, shopping cart, billboard, television, radio, internet, smell, touch, taste, in-store media, out-of-store media, and any combination thereof.

The following disclosure of the present invention is grouped into three subheadings, namely "Exemplary Operating Environment", "Advertisement Optimization", "Measuring Customer Response", "Intelligent In-Store Marketing System", "Intelligent In-Store Couponing System", "Couponing System", "Computer Network-Based In-Store Media Broadcasting System", "Computer Entrance Detection and Tracking System", "Coupon Management Module", and "Methods for In-Store Couponing (Business Methods)". The utilization of the subheadings is for convenience of the reader only and is not to be construed as limiting in any sense.

Exemplary Operating Environment

Figure 1 and the corresponding discussion are intended to provide a general description of a suitable operating environment in which the invention may be implemented. One skilled in the art will appreciate that the invention may be practiced by one or more computing devices and in a variety of system configurations, including in a networked configuration. Alternatively, the invention may also be practiced in whole or in part manually following the same procedures.

Embodiments of the present invention embrace one or more computer readable media, wherein each medium may be configured to include or includes thereon data or computer executable instructions for manipulating data. The computer executable instructions include data structures, objects, programs, routines, or other program modules that may be accessed by a processing system, such as one associated with a general-purpose computer capable of performing various different functions or one associated with a special-purpose computer capable of performing a limited number of functions. Computer executable instructions cause the processing system to perform a particular function or group of functions and are examples of program code means for implementing steps for methods disclosed herein. Furthermore, a particular sequence of the executable instructions provides an example of corresponding acts that may be used to implement such steps. Examples of computer readable media include random-access memory ("RAM"), read-only memory ("ROM"), programmable read-only memory ("PROM"), erasable programmable read-only memory ("EPROM"), electrically erasable programmable read-only memory ("EEPROM"), compact disk read-only memory ("CD-ROM"), or any other device or component that is capable of providing data or executable instructions that may be accessed by a processing system.

With reference to Figure 1, a representative system for implementing the invention includes computer device 10, which may be a general-purpose or special-purpose computer. For example, computer device 10 may be a personal computer, a notebook computer, a personal digital assistant ("PDA") or other hand-held device, a workstation, a minicomputer, a mainframe, a supercomputer, a multi-processor system, a network computer, a processor-based consumer electronic device, or the like.

Computer device 10 includes system bus 12, which may be configured to connect various components thereof and enables data to be exchanged between two or

more components. System bus 12 may include one of a variety of bus structures including a memory bus or memory controller, a peripheral bus, or a local bus that uses any of a variety of bus architectures. Typical components connected by system bus 12 include processing system 14 and memory 16. Other components may include one or more mass storage device interfaces 18, input interfaces 20, output interfaces 22, and/or network interfaces 24, each of which will be discussed below.

Processing system 14 includes one or more processors, such as a central processor and optionally one or more other processors designed to perform a particular function or task. It is typically processing system 14 that executes the instructions provided on computer readable media, such as on memory 16, a magnetic hard disk, a removable magnetic disk, a magnetic cassette, an optical disk, or from a communication connection, which may also be viewed as a computer readable medium.

Memory 16 includes one or more computer readable media that may be configured to include or includes thereon data or instructions for manipulating data, and may be accessed by processing system 14 through system bus 12. Memory 16 may include, for example, ROM 28, used to permanently store information, and/or RAM 30, used to temporarily store information. ROM 28 may include a basic input/output system ("BIOS") having one or more routines that are used to establish communication, such as during start-up of computer device 10. RAM 30 may include one or more program modules, such as one or more operating systems, application programs, and/or program data.

One or more mass storage device interfaces 18 may be used to connect one or more mass storage devices 26 to system bus 12. The mass storage devices 26 may be incorporated into or may be peripheral to computer device 10 and allow computer device 10 to retain large amounts of data. Optionally, one or more of the mass storage devices 26 may be removable from computer device 10. Examples of mass storage devices include hard disk drives, magnetic disk drives, tape drives and optical disk drives. A mass storage device 26 may read from and/or write to a magnetic hard disk, a removable magnetic disk, a magnetic cassette, an optical disk, or another computer readable medium. Mass storage devices 26 and their corresponding computer readable media provide nonvolatile storage of data and/or executable instructions that may include one or more program modules such as an operating system, one or more application programs, other program modules, or program data. Such executable

instructions are examples of program code means for implementing steps for methods disclosed herein.

One or more input interfaces 20 may be employed to enable a user to enter data and/or instructions to computer device 10 through one or more corresponding input devices 32. Examples of such input devices include a keyboard and alternate input devices, such as a mouse, trackball, light pen, stylus, or other pointing device, a microphone, a joystick, a game pad, a satellite dish, a scanner, a camcorder, a digital camera, and the like. Similarly, examples of input interfaces 20 that may be used to connect the input devices 32 to the system bus 12 include a serial port, a parallel port, a game port, a universal serial bus ("USB"), a firewire (IEEE 1394), or another interface.

One or more output interfaces 22 may be employed to connect one or more corresponding output devices 34 to system bus 12. Examples of output devices include a monitor or display screen, a speaker, a printer, and the like. A particular output device 34 may be integrated with or peripheral to computer device 10. Examples of output interfaces include a video adapter, an audio adapter, a parallel port, and the like.

One or more network interfaces 24 enable computer device 10 to exchange information with one or more other local or remote computer devices, illustrated as computer devices 36, via a network 38 that may include hardwired and/or wireless links. Examples of network interfaces include a network adapter for connection to a local area network ("LAN") or a modem, wireless link, or other adapter for connection to a wide area network ("WAN"), such as the Internet. The network interface 24 may be incorporated with or peripheral to computer device 10. In a networked system, accessible program modules or portions thereof may be stored in a remote memory storage device. Furthermore, in a networked system computer device 10 may participate in a distributed computing environment, where functions or tasks are performed by a plurality of networked computer devices.

Advertisement Optimization

Reference is next made to Figure 2, which is a flow chart illustrating one embodiment of a method for optimizing an advertisement in response to customer data, designated generally at 200. Although acts are shown and described in a sequential order, the steps can be performed in any order in relation to one another.

The method 200 begins by generating customer response data, act 210. Customer response data includes identifying various customer reactions to an advertisement with respect to advertising variable settings included in the advertisement. Advertising variable settings include a plurality of aspects of an advertisement that can be used to identify particular customer preferences. These reactions include but are not limited to purchasing a product, not purchasing a product, changing routine, and leaving the store. Therefore, complete customer response data will include correlating various customer reactions with customer information and advertising variable settings. One embodiment of generating customer response data will be described in more detail with respect to Figure 3. In one embodiment the act of generating customer response data 210 will include generating a set of optimum advertising variable settings for a plurality of advertising groups. The determination of optimum advertising variable settings can be accomplished with any one of a variety of optimization algorithms known to those skilled in the art.

After a sufficient amount of customer response data has been obtained or generated, an advertising target group must be identified, act 230. An advertising target group is a group of individuals who have at least one trait or characteristic in common and who are targeted for a particular advertisement. For example, males over 50 years old may be an advertising target group. The advertising target group can be identified manually by determining the optimum target audience of a particular advertisement or could be determined automatically based on current customer population of a store at a particular time. For example, the manufacturer of aftershave may target males between the ages of 18 and 60. Alternatively, a manufacturer of toilet paper may wish the advertisement be automatically targeted to the current population of customers in the store. Various techniques and technology could be used for automatically identifying the current customer population at a particular store. For example, stores may require customers to scan their loyalty cards when they enter the store in order to obtain a cart. The customer loyalty card could then be used to provide customer information about the customer to a computer that maintains a constant tally of the demographics of the current customers. A method of automatically identifying current customers and manipulating advertisements accordingly is also discussed with respect to Figure 6.

Once the advertising target group is identified, an advertisement is generated with optimized advertising variable settings, act 250. Therefore, if one of the optimized advertising variable settings for the target advertising group is a male

speaker in an audio advertisement, the advertisement will be generated with a male speaker. The generated advertisement may include one or flexible advertising variable settings depending on the objectives of the advertising company. Some advertising variable settings are almost always flexible such as volume and frequency. However, other advertising variable settings require that the producer of the advertisement add additional content to allow for flexibility such as price quotes, gender of speaker, seasonal greetings, etc. This additional content is known as advertising components. In this respect, an advertisement may be recorded with two different voices that may appeal to two different advertising target groups. In addition, if the act of generating customer data 210 did not include providing a list of optimized variable settings for all advertising groups, the producer of the advertisement may need to analyze the customer data manually and select the desired format of the advertisement. Alternatively, portions of the act of generating an advertisement with optimized variable settings 250 may be performed automatically by a computer as discussed with respect to Figures 5 and 6.

Once the optimized advertisement is generated, the optimized advertisement is broadcast, act 270. Broadcasting the advertisement includes all forms of exposing the public to the advertisement including hanging a poster, playing an audio track, playing a video track, distributing a smell, or any combination thereof. Since the time of day and the location of an advertisement are important advertising variable settings, the broadcasting of the advertisement will also need to be consistent with the optimized set of variables. Likewise, the advertisement may also be broadcast at additional non-optimized times or locations as a test advertisement for obtaining more customer response data.

Reference is next made to Figure 3, which is a flow chart illustrating one embodiment of a method for acquiring customer response data including optimum advertising variable settings for a plurality of advertising groups. The method is designated generally at 210 corresponding to the similar act in Figure 2. The method 210 may be performed independently or as part of the method described with respect to Figure 2. Initially, a plurality of test advertisements are broadcast with unique advertising variable settings, act 212. Test advertisements are actual advertisements that are broadcast with known advertisement variable settings. Each of the plurality of broadcast test advertisements has unique advertisement variable settings. One embodiment of broadcasting a plurality of test advertisements is described in more detail with reference to Figure 4. The act of broadcasting a plurality of test

advertisements includes recording customer response data that can be correlated with each of the test advertisements.

Once the plurality of test advertisements are broadcasted, the advertising variable settings of each of the test advertisements are analyzed in relation to the corresponding customer response data, act 214. It is desirable to attempt to correlate which advertising variable settings affect which customer groups by identifying which test advertisements cause customers to respond in positive ways. Naturally, some customer groups will overlap with one another and certain advertising variable settings may affect customer groups in different ways. This analysis can be performed manually, automatically, or some combination thereof. Various automatic computer algorithms could be used which are known to those skilled in the art.

Once the analysis is complete, a set of optimized advertisement variables is created for a particular advertising target group, act 216. The set of optimized advertising variable settings may or may not be a complete set of advertising variable settings. For example, women under 18 may prefer a female voice, at high volume, repeated frequently, a rose smell, and with lots of sound effects. This set of optimized advertising variable settings is not a complete set of advertising variable settings and will allow the remaining variables to be set at random or set for another purpose.

Reference is next made to Figure 4, which is a flow chart illustrating one embodiment of a method for broadcasting a plurality of test advertisements with unique sets of advertisement variable settings. The method is designated generally at 212 corresponding to the similar act in Figure 3. This method may be performed independently or as part of the method described with respect to Figure 3. Initially, a single test advertisement is broadcast with a known set of advertisement variable settings, act 305. As discussed above, the term "broadcast" is used broadly to describe any manner in which an advertisement may be exposed to the public. Numerous different advertisement variables may or may not be present in the broadcast test advertisement. For example, a video advertisement may also include a smell that is simultaneously dispensed from a plurality of sprayers. Likewise, an audio advertisement may include various sound effects. Customer's corresponding responses are then recorded, act 310. A query is then performed to determine whether enough customer response data has been accumulated for proper analysis, act 315. At least two test advertisements must be broadcast in order to perform any analysis. The analysis included comparing the at least two test advertisements to one another to

generate information. The determination of how many test advertisements is enough for proper analysis can be determined manually or automatically. If there is sufficient customer response data, the method will proceed to whatever next act or method is provided. If there is not sufficient customer response data for analysis, the advertisement variables will be adjusted and the act of broadcasting a test advertisement will be repeated, as shown. It should also be noted that any broadcast of an advertisement may be considered the broadcast of a test advertisement for the purpose of gathering additional customer response data. Therefore, this method 212 may be implemented continually through the process of advertising.

Reference is next made to Figure 5, which is a flow chart illustrating one embodiment of a method for generating an advertisement with optimized advertising variable settings for an advertising target group. The method is designated generally at 270 corresponding to the similar act in Figure 2. The method 270 may be performed independently or as part of the method described with reference to Figure 2. Initially, various advertising components are created, act 505. Advertising components are portions of an advertisement that can be used independently as an advertisement or must be coupled with additional components to form a complete advertisement. The advertising components correspond to advertising variable settings. For example, one component might be an audio advertisement recorded with a female voice while another might be the same advertisement recorded with a male voice. Alternatively, a sound effect may be recorded as a separate advertising component which may or may not be compiled into a complete advertisement. Certain advertising variable settings do not require additional advertising components to be generated in order to allow for their adjustment. For example, the volume of an audio advertisement can be adjusted in accordance with optimized settings without the need to record additional advertising components. It is not necessary to provide advertising components corresponding to all of the advertising variable settings, only the advertising variable settings which the advertisement producer wishes to be flexible.

Once all the necessary advertising components are created, the complete advertisement is compiled utilizing components that correspond to a set of optimized advertising variable settings, act 510. This act may be performed manually or automatically depending on the application. For example, if an advertiser only wants to optimally target a single customer group in one particular location, a single version

of the advertisement may be manually compiled and transferred to the location. However, if the advertiser wishes the advertisement to be part of a dynamic advertising system, the advertisement may be compiled automatically by a computer in response to a particular situation. A dynamic advertising system is described in more detail with reference to Figure 6.

Reference is next made to Figure 6, which is a flow chart illustrating one embodiment of a method for automatically broadcasting an efficient advertisement with respect to present customers. The method is designated generally at 600 and may be performed independently or as part of another method. Initially, a current set of customers is identified, act 605. The identity and characteristics of current customers is obtained through one or more techniques and/or technologies. For example, loyalty card scanning, video face recognition, manual input, etc. Numerous technologies are becoming available that allow retailers to obtain customer information and customer response data. These technologies are known to those skilled in the art and the use of any such technology is consistent with the teachings of the present invention.

Once information is obtained about current customers, a set of optimized advertising variable settings can be dynamically determined that will maximize the affect of an advertisement, act 610. The optimized advertising variable settings may be the optimal variable settings for the most prevalent customer group in the store or they may be a custom set of advertising variable settings that is a statistically generated to maximize the affects of an advertisement. Various other techniques may also be used to determine the optimized advertisement variable settings.

After the optimized advertising variable settings are established, an advertisement is generated in accordance with the optimized advertising variable settings, act 615. The advertisement is dynamically generated in order to capitalize on the narrow time frame in which the advertising variable settings are optimized. The advertisement is compiled using advertisement components that are previously created in order to allow for flexibility in various advertising variable settings.

Measuring Customer Response

Reference is next made to Figure 7, which illustrates a chart showing various customer response metric measurements in response to a particular media. The chart is designated generally at 700. As described above, customer response data can be

used to optimize advertising. In addition, it can be used to provide advertisers with information such that they can decide how much money to spend on advertising in various forms of media. Most advertisers utilize metric values to determine which forms of media to advertise their product in. For example, $1000 on network television may only reach 5% of the population whereas $1000 on the radio may reach 12% of the population. Reach is one form of metric value used to analyze the effectiveness of an advertisement or message. Figure 7 shows a chart of metric values 710 versus media 720. The metric values 710 include reach 712, frequency 714, sales 716, awareness 718, and other response measurements 719. Likewise, the media 720 include In-Store (IS) audio local 722, IS audio chain 724, IS video local 726, IS video chain 728, IS cart local 730, IS cart chain 732, IS audio local + IS video local 734, IS audio chain + OS TV 738, IS cart chain 740 + OS radio 740, and combinations 742.

The metric values each contain a different type of information about how a particular media affects customers. Reach 712 is a percentage value of customers who received the message via the corresponding media 720. Frequency 714 is the number of times a customer received the message via the corresponding media 720. Sales 714 are the revenue generated from customers in response to the corresponding media 720. Awareness includes the percentage of customers who are aware of the product as a result of the media 720. Likewise, any similar measurement or combination of measurements may be considered a metric 710 for purposes of this application.

Metric values are not necessarily directly measured but can be extrapolated from other information with a variety of techniques. For example, in a store environment customer response devices enable the recordation of various customer responses after an advertisement or message is broadcast. These responses include purchasing products, altering a standard shopping path, leaving the store, etc. Various customer response devices and customer response data processes may be used to determine metric values and remain consistent with the present invention.

The media 720 are various channels over which to convey information to customers. In-Store (IS) means that the media is limited to the store environment as opposed to out of store (OS) general media. Audio, Video, Cart, etc refer to the specific type of media. For example, IS audio could include the store-wide intercom system in a grocery store. IS audio could also include an audio message played in front of a particular product. IS video could include a screen that displays video

images in a certain portion of a store. IS cart refers to various forms of media which may be located on a shopping cart including billboard, audio, video, smell, etc. Messages or advertisements can be broadcast by individual media or combinations of synchronized media to produce different customer responses. In addition, media can be broadcast in local stores or throughout a chain or network. The term local means that the media is only broadcast in one store which may have unique characteristics. The term chain refers to media that is broadcast in a group of stores. By identifying the metrics associated with various media combinations and permutations, it is possible to determine the optimum media combinations for particular messages and advertisements.

Reference is next made to Figure 8 which illustrates a group of graphs, each showing RF curves of customer response to a particular media. It is important to note the illustrated curves do not represent actual data and are merely examples for the purpose of illustrating an embodiment of the present invention. The first curve is a Reach/Frequency (RF) curve of In-Store (IS) audio media versus money spent 810. Media messages and advertisements are often sold in blocks of gross rating points and there is an associated price per rating point. In order to simplify the graphs and enable direct comparison, the graphs utilize money spent rather than rating points purchased. The RF IS Audio curve 810 is primarily logarithmic indicating that the RF response diminishes the more money that is spent on additional rating points. Therefore, advertisers often determine an inflection point and associated inflection range throughout which it is efficient to advertise using this media.

Likewise, the other illustrated curves graph metric values for particular media or media combinations. The second curve is an RF IS Video curve versus money spent 820. The actual curve is irregularly shaped making it difficult to clearly determine how much money to spend on advertising for this form of media. The third curve is an RF IS Cart curve versus money spent 830. This curve appears linear meaning that there is an equal RF response for any amount of money spent. The fourth curve is an IS Audio + IS video curve versus money spent 840. This curve is unique in that it is analyzing the metric value for a combination of media. It appears on the curve, after a certain amount of money is spent, no additional RF response is achieved. Curve 840 therefore gives additional information over simply analyzing curves 810 and 820 individually. Likewise, the fifth curve is an RF IS Audio + IS Video + IS Cart curve versus money spent 850. In addition, the combination curves

840, 850 provide a metric for the combined media which may be significantly different than simply adding the two individual curves. For example, if an advertisement is broadcast over an IS Audio media and is also simultaneously broadcast over an IS Video media, the combined effect may be to annoy customers causing the metrics to decrease. Whereas, taken individually the IS Audio and the IS video may produce a particular result, it is not clear how customers will respond to the combination without actually analyzing the combination.

The RF value on each of the curves could be replaced with any metric value including but not limited to frequency, sales, awareness ,etc. Likewise, the media or media combination could be replaced with any media permutation contemplated by those skilled in the art. In addition, other variables could be incorporated into this analysis to produce more pertinent information for a particular advertising target group. For example, single, white, males between the ages of 20 and 40 may produce different metric values than married, Asian, females over 50 years of age. It is also possible to plot multiple metric media values on a single graph to indicate the most efficient use of a particular amount of money. For example, curves 810, 820, 830, 840, and 850 could be plotted on the same graph to illustrate which of the media combinations is most effective. Various other data graphing techniques known in the art are consistent with the present invention including three dimensional graphing, color charts, etc.

Combination metrics may be obtained in various ways and remain consistent with the present invention. In a store environment these techniques generally include obtaining customer response data from customer response devices such as loyalty cards. In order to correlate the customer response information with multiple media messages particular techniques may be used including random duplication, personal probability, and other duplication methodologies. These techniques are well known to those skilled in the art of numerical analysis and market research.

INTELLIGENT IN-STORE MARKETING SYSTEM

The present invention comprises one aspect or component of a method and system for providing an entire intelligent in-store network that utilizes one or more or all of various computer, media and other audio/visual broadcasting, coupon generation, data compiling and storage, and other systems to introduce or provide intelligent advertising, selling and promotion of goods and services, information delivery, coupon generation, customer tracking, and other similar or peripheral functions and business methods preferably to a retail or other store or business

location, or on any other in-store or similar basis. The phrase intelligent in-store marketing system is a general phrase intended to define and encompass each of these in a total system, as well as to include the various possible configurations and intelligent functions the total system is capable of performing, although many, if not all, constituent systems are capable of functioning independently without the others, if so desired.

As stated, the intelligent in-store marketing system 1010 is preferably made up of several constituent components and/or systems, each contributing their respective functions to enable the total system and associated methods to function as intended, namely to enable the intelligent in-store marketing system to perform various smart functions and/or to convert traditional business-related functions, such as advertising, selling, coupon generation and delivery, identifying and utilizing customer shopping habits, and other such functions into smart functions, each of which were not otherwise possible with current related art. As such, each component system plays a significant role, some of which may or may not be dependent upon other components or systems.

In one exemplary embodiment, and with reference to Figure 9, the intelligent in-store marketing network 1010 of the present invention comprises several individual and operably interconnected components or systems, which components or systems interact and function together or separately to introduce intelligence into many traditional business operations or functions. Not to be considered or construed as limiting, in this particular embodiment intelligent in-store marketing system 1010 comprises, as its constituent components, an in-store media broadcasting system 1014, which is preferably a computer network-based media broadcasting system, wherein various music, video, announcements, advertisements, and other information is broadcast throughout a store or business location; an intelligent in-store couponing system 1018 that functions to generate and deliver coupons to customers at the point-of-decision (POD) or point-of-sale (POS); a consumer or customer entrance and/or presence detection and tracking system 1022, which functions to notify store owners, managers, or employees that a particular customer has entered the store and allows them to track the purchases and other in-store habits of any participating customer; a customer data collection or gathering, compilation, storage and management system 1026 (hereinafter customer storage and management system 1026) that interfaces with customer entrance detection and tracking system 1022 to gather and collect specific customer data and to store this data in a efficiently manageable and retrievable

format; a trigger-based media broadcasting system 1030; a customer notification and interaction system 1034 for interacting with the customer on an as needed basis or for delivering requested information or customer items, such as electronic coupons; and a return-on-investment analysis and reporting system 38 that allows store owners, managers, system administrators, network personnel, and others to obtain, review, analyze, and receive reports on the effectiveness of the various intelligent in-store systems with respect to encouraged and participated in customer activity.

In a complete or total system each of these systems are preferably interconnected and in communication with one another via an in-store computer and/or audio/visual network 1050 (hereinafter in-store network 1050). Of course, if any system is independently operated, it alone may be connected with in-store network 1050. In addition, intelligent in-store marketing system 1010 may further be operably connected and in communication with a global user or wide-area network 1060, such as the Internet. Each system may be independently and directly connected to global user network 1060 or indirectly connected via in-store network 1050.

The phrase "business location" is intended to mean any commercial retail or outlet store (e.g., shopping mall, grocery store, convenience store, etc.), any type of commercial service oriented business (e.g., a dental or doctor's office, etc.), or any other type of location that is visited by the public, whether it be a location in which a business is being operated for profit, or one housing a non-profit organization. In essence, the present invention is intended to be adaptable to any location in which it would be desirable to utilize the technology of the present invention as discussed and described herein and illustrated in the accompanying Figures.

The phrase "business chain" is intended to mean a plurality of business locations that are either owned or managed in a some type of common manner, whether affiliated with one another in some way or not.

The term "in-store" is intended to mean within or about the physical premises of a business location or a business chain. "In-store" is also used to describe and define the operating domain of the present invention intelligent couponing system and method, which domain includes, but is not limited to, the actual physical premises of a business location or business chain, any online or computer network supported address (e.g., an Internet web-site), any remote contacting means used for contacting customers without the store for the purpose of attracting their business (e.g., messaging a customer on a cell phone when out of the store providing a coupon that is redeemable if they come into a sponsoring or participating business location or visit

the sponsoring business location's website), any combination of these, and/or any others not presented herein, but recognized by those skilled in the art.

The term "couponing" or "coupon" is intended to mean any type of means used to discount goods or services of a business location or business chain, such as providing paper coupons, paperless or electronic coupons, notifications of discounted items or services, buy one get one free offers, etc. to customers. "Couponing" may also mean any type of means for promoting and offering goods or services, either for a discounted price or for other purposes.

For purposes of the present invention, the particulars of intelligent in-store couponing system 1018 are discussed in detail below, including how this system interacts or is operable with some of the other systems in intelligent in-store marketing system 1010.

INTELLIGENT IN-STORE COUPONING SYSTEM

The present invention intelligent in-store couponing system comprises many operating arrangements. The couponing system may be a stand alone system, or it may be interfaced or integrated with other systems, such as an in-store network, an in-store media broadcasting system, a customer entrance detection and tracking system, and others. Or, the intelligent in-store couponing system may itself comprise various systems, such as an in-store media broadcasting or customer entrance detection system. In each of its operating arrangements, the intelligent in-store couponing system comprises various hardware and software components that interact with each other to carry out the intended function of the present invention. While the system, its software, the associated network and communications, the several operating arrangements, and the corresponding methods of doing business are all specifically described, such descriptions are provided with the intention of encompassing like-systems, like-devices, and/or like-methods, aside from those not specifically described or mentioned herein, but that would nonetheless be obvious to one ordinarily skilled in the art. As such, these are not meant to be limiting in any way.

Figure 10, along with its corresponding discussion, is intended to provide a general description of a suitable operating environment in which some embodiments of the invention may be implemented. One skilled in the art will appreciate that the invention may be practiced by one or more computing devices and in a variety of system configurations, particularly within in a networked configuration.

Embodiments of the present invention embrace one or more computer readable media, wherein each medium may be configured to include or includes

thereon data or computer executable instructions for manipulating data. The computer executable instructions include data structures, objects, programs, routines, or other program modules that may be accessed by a processing system, such as one associated with a general-purpose computer capable of performing various different functions or one associated with a special-purpose computer capable of performing a limited number of functions. Computer executable instructions cause the processing system to perform a particular function or group of functions and are examples of program code means for implementing steps for methods disclosed herein. Furthermore, a particular sequence of the executable instructions provides an example of corresponding acts that may be used to implement such steps. Examples of computer readable media include random-access memory ("RAM"), read-only memory ("ROM"), programmable read-only memory ("PROM"), erasable programmable read-only memory ("EPROM"), electrically erasable programmable read-only memory ("EEPROM"), compact disk read-only memory ("CD-ROM"), or any other device or component that is capable of providing data or executable instructions that may be accessed by a processing system.

With reference to Figure 10, a representative system for implementing the invention includes operating computer 1070, which may be a general-purpose or special-purpose computer. For example, operating computer 1070 may be a personal computer, a notebook computer, a personal digital assistant ("PDA") or other hand-held device, a workstation, a minicomputer, a mainframe, a supercomputer, a multi-processor system, a network computer, a processor-based customer electronic device, or the like.

Operating computer 1070 includes system bus 1074, which may be configured to connect various components thereof and enables data to be exchanged between two or more components. System bus 1074 may include one of a variety of bus structures including a memory bus or memory controller, a peripheral bus, or a local bus that uses any of a variety of bus architectures. Typical components connected by system bus 1074 include processing system 1076 and memory 1078. Other components may include one or more mass storage device interfaces 1080, input interfaces 1082, output interfaces 1084, and/or network interfaces 1086, each of which will be discussed below.

Processing system 1076 includes one or more processors, such as a central processor and optionally one or more other processors designed to perform a particular function or task. It is typically processing system 1076 that executes the

instructions provided on computer readable media, such as on memory 1078, a magnetic hard disk, a removable magnetic disk, a magnetic cassette, an optical disk, or from a communication connection, which may also be viewed as a computer readable medium.

Memory 1078 includes one or more computer readable media that may be configured to include or includes thereon data or instructions for manipulating data, and may be accessed by processing system 1076 through system bus 1074. Memory 1078 may include, for example, ROM 1092, used to permanently store information, and/or RAM 1094, used to temporarily store information. ROM 1092 may include a basic input/output system ("BIOS") having one or more routines that are used to establish communication, such as during start-up of operating computer 1070. RAM 1094 may include one or more program modules, such as one or more operating systems, application programs, and/or program data.

One or more mass storage device interfaces 1080 may be used to connect one or more mass storage devices 1090 to system bus 1074. The mass storage devices 1090 may be incorporated into or may be peripheral to operating computer 1070 and allow operating computer 70 to retain large amounts of data. Optionally, one or more of the mass storage devices 1090 may be removable from operating computer 1070. Examples of mass storage devices include hard disk drives, magnetic disk drives, tape drives and optical disk drives. A mass storage device 1090 may read from and/or write to a magnetic hard disk, a removable magnetic disk, a magnetic cassette, an optical disk, or another computer readable medium. Mass storage devices 1090 and their corresponding computer readable media provide nonvolatile storage of data and/or executable instructions that may include one or more program modules such as an operating system, one or more application programs, other program modules, or program data. Such executable instructions are examples of program code means for implementing steps for methods disclosed herein.

One or more input interfaces 1082 may be employed to enable a user to enter data and/or instructions to operating computer 1070 through one or more corresponding input devices 1096. Examples of such input devices include a keyboard and alternate input devices, such as a mouse, trackball, light pen, stylus, or other pointing device, a microphone, a joystick, a game pad, a satellite dish, a scanner, a camcorder, a digital camera, and the like. Similarly, examples of input interfaces 1082 that may be used to connect the input devices 1096 to the system bus 1074

include a serial port, a parallel port, a game port, a universal serial bus ("USB"), a firewire (IEEE 1394), or another interface.

One or more output interfaces 1084 may be employed to connect one or more corresponding output devices 1098 to system bus 1074. Examples of output devices 1098 include a monitor or display screen, a stereo system, one or more speakers, a printer, and the like. A particular output device 1098 may be integrated with or peripheral to operating computer 1070. Examples of output interfaces include a video adapter, an audio adapter, a parallel port, and the like.

One or more network interfaces 1086 enable operating computer 1070 to exchange information with one or more other local or remote computer devices, such as a coupon delivery device or system, illustrated as computer devices 1100, via a network 1050 that may include hardwired and/or wireless links. Examples of network interfaces include a network adapter for connection to a local area network ("LAN") or a modem, wireless link, or other adapter for connection to a wide area network ("WAN"), such as the World Wide Web or the Internet. The network interface 1086 may be incorporated with or peripheral to operating computer 1070. In a networked system, accessible program modules or portions thereof may be stored in a remote memory storage device. Furthermore, in a networked system operating computer 1070 may participate in a distributed computing environment, where functions or tasks are performed by a plurality of networked computer devices.

While those skilled in the art will appreciate that the invention may be practiced in networked computing environments with many types of computer system configurations, Figure 3 represents an embodiment of the present invention in a networked environment that includes clients connected to a server via a network, wherein the clients may be a business location or business chain computer with the possibility of further connecting to a coupon delivery device or system. While Figure 11 illustrates an embodiment that includes two clients connected to the network, alternative embodiments include one client connected to a network or many clients connected to a network. Moreover, embodiments in accordance with the present invention also include a multitude of clients throughout the world connected to a network, where the network is a wide area network, such as the Internet.

Generally, Figure 11 represents an exemplary arrangement of the present invention intelligent in-store couponing system. Specifically, in Figure 11, server system 1110 represents a system configuration that includes one or more servers that are used to provide and execute the couponing functions as described and claimed

herein. By way of example, server system 1110 may be a single server in cases where a single server can process and preserve the entire amount of information required to perform the methods of the present invention that are disclosed herein. Alternatively, server system 1110 may be a conglomeration of servers that process and preserve a high volume of information. In one exemplary embodiment, server system 1110 may be located and operated at a business location to control the couponing at that business location only. In this embodiment, client 1120 may comprise various local computers, as well as one or more coupon delivery systems. In an alternative exemplary embodiment, server system 1110 may be located and operated at a business chain to control the couponing of several business locations. In this embodiment, clients 1120 and 1130 may comprise various computers at each representative business location, as well as one or more coupon delivery systems, such as those located at the various business locations. In another alternative exemplary embodiment, server system 1110 may be located operated at an administration center that controls the couponing and other functions of several business chains. In this embodiment, clients 1120 ands 1130 may comprise representative business chain computers or computer systems, business location computers, or one or more coupon delivery systems, such as those located at various business locations.

The embodiment illustrated in Figure 11 comprises a plurality of clients, illustrated as clients 1120 and 1130, connected to server system 1110 across network 1050/1060 in order to provide the intelligent couponing services and functions described herein. Network 1050/1060 may include a wireless network, a local area network, and/or a wide area network.

With reference to Figure 11, clients 1120 and 1130 include a network interface (respectively illustrated as network interfaces 1122 and 1132), such as a web browser or other network interface. Network interface 1122 is a communication mechanism that allows client 1120 to communicate with server system 1110 via a network 1050/1060, such as the Internet.

Server system 1110 includes network interface 1112, application servers 1114, and storage device 1116. Network interface 1112 is a communication mechanism that allows server system 1110 to communicate with one or more clients via network 1050/1060. Application servers 1114 include one or more servers for processing and/or preserving information, and may be employed for providing and maintaining a web page that may be accessed by a client. Storage device 1116 includes one or more

storage devices for preserving information, such as demographic information, professional information, customer information, billing information, or any other type necessary to the methods and systems disclosed herein. Storage device 1116 may be internal or external to application servers 1110. While the discussion above has presented a representative system configuration for implementing the present invention, those skilled in the art will appreciate that the methods of the present invention and processes thereof may be implemented in a variety of system configurations.

The concept of the present invention provides a unique paradigm shift from prior art couponing systems and methods, such as those described earlier. While the preferred delivery mechanism is computer network based, other delivery mechanisms or means are also contemplated, such as satellite, and others. The intelligent in-store couponing system 1018, in its simplest form, features a computer network-based system, such as an Internet, Intranet, or other computer network based system, comprising one or more computer systems in communication with at least one, and preferably several or a plurality of, coupon delivery systems 1100.

Incorporated into the discussion of the physical components of the intelligent in-store couponing system are the proprietary software application modules that enable the system to operate and function as intended.

The operating system used to control the intelligent in-store couponing system is preferably selected from the group consisting of a Linux® operating system, a Microsoft® operating system, an Apple or Macintosh® operating system, a System V Unix® operating system, a BSD Unix® operating system, an OSF Unix® operating system, an IBM® Mainframe MVS operating system, and/or other operating systems as will be known by one skilled in the art. In addition to the components of each computer system described and the operating systems anticipated, other components are intended to be included in each computer system as commonly known by one ordinarily skilled in the art. Moreover, each computer system is capable of storing and executing at least one application software program thereon in accordance with the teachings of the present invention.

COUPONING SYSTEM

The in-store couponing system and method of the present invention comprises several configurations and embodiments. In one exemplary embodiment, with reference to Figure 12, intelligent in-store couponing system 1018 comprises a

computer or computer system 1140 that may be a business location computer controlling only the couponing functions for that particular business location, a business chain computer controlling the couponing functions of several business locations, or a server system at a business location or a business chain. Computer 1140 is operably connected and in communication with computer network 1050/1060, which comprises either an in-store network 1050 (e.g., a local area network, an audio/visual system, etc.) or a global computer network 1060, depending upon the particular operating arrangement. The communication between components in the network may be by any known means, such as a wired or wireless connection, using various protocols commonly known in the art. Also in communication with computer 1140 and/or computer network 1050/1060 is coupon delivery system 1100, which functions to deliver a coupon to the customer, whether the coupon is in the form of a paper coupon, a paperless coupon, a notification coupon, or others. Coupon delivery system 1100 preferably comprises programming that would enable it to communicate over well-defined protocols. Coupon delivery system 1100 may or may not comprise local data storage, thus, no local hard drive. The operating system and coupon software could be embedded to keep costs down. However, upgrading would be difficult and expensive.

One exemplary system configuration or operating arrangement for providing a business location an intelligent couponing system in its simplest form is illustrated in Figure 12, wherein the intelligent couponing system exists independently of other intelligent systems, or rather is a stand-alone system not interfaced with any other intelligent systems, such as those described above in Figure 9. In such an arrangement, several different operating arrangements are made possible, some of which are discussed below. It should be noted that the operating arrangements presented in Figure 12 provide several base-level designs. Indeed, all of the functions and features of the present invention discussed with respect to Figure 12 may be incorporated into any of the remaining operating arrangements.

In one exemplary embodiment, Figure 12 illustrates computer 1140 that is physically located at and operated from a business location. Computer 1140 comprises various processing, memory storage, and other components necessary to execute one or more couponing functions via a coupon management module stored and executable on computer 1140. Computer 1140 is operably connected to and in direct communication with at least one coupon delivery system 1100, that is also located at the business location. The connection means used for connecting and

facilitating communication between computer 1140, in-store network 1050, and coupon delivery system 1100 may be any known in the art, such as any type of wired connection, any type of wireless connection (e.g., infrared, Bluetooth, etc.), or a combination of these.

In this arrangement, a store manager, employee, or other authorized person may operate the coupon management system stored on computer 1140 to generate, manipulate, and deliver to one or more customers an in-store coupon. One way of determining the coupons to be provided is manually. For example, a store manager may determine the various coupons to be provided on a daily, weekly monthly, or yearly basis. When the time comes to generate and deliver the coupon, the manager may access the coupon management module from computer 1140, generate, modify, or select a pre-existing coupon, assign the desired parameters to the coupon and execute the delivery of the coupon to coupon delivery system 1100. One scenario may be when a store manager desires to move a certain item at an accelerated pace or reduce an overstocked or high volume item.

The store manager may place a kiosk or portable coupon delivery system 1100 in the vicinity of the item, manually generate a new or select a pre-existing coupon corresponding to the selected item, announce over to the customers then in the store, such as over the intercom system, that in the next few hours there will be a sale on a particular item, and provide a coupon for the item at the very location of the item, otherwise known as the point-of-decision. As customers hear the announcement, they may then locate the item and coupon delivery system 1100 near by, receive their coupon from the coupon delivery system 1100, and purchase the item according to the terms and conditions of the coupon, such as at a reduced price. Another scenario may be that coupons may be generated and delivered based on in-store advertisements or announcements broadcast over an in-store broadcasting system. An in-store personnel may trigger a coupon based on an advertisement that is coming up, is currently playing, or that just finished playing. This will make advertising much more effective because customers not only hear the advertisement, but they are immediately offered a coupon on the advertised item or service.

Another way the coupons may be generated and delivered is automatically according to a schedule or other determinate as set up and managed within the coupon management module or other similarly capable program. The coupon management module may comprise a scheduling program that allows any authorized person to create and manage a schedule of coupons. The schedule may allow authorized

personnel to keep track of and assign such parameters as the date, time, number, and frequency the coupons are to be delivered. Other parameters may also be included and entered into the schedule, such as to whom the coupons are to be delivered, and the period of validity for each coupon. This schedule may be set up to generate and deliver coupons randomly, or it may follow one or more programs as desired by the authorize store personnel, or, in a more preferred arrangement, the schedule may be more sophisticated so as to integrate or synchronize with other intelligent in-store systems, such as a customer entrance detection and tracking system, or an in-store media broadcasting system (e.g., those shown in Figure 9).

The coupon schedule may be separate or independent from the broadcast schedule used to provide the media broadcast in the business location. In this situation, in-store personnel may still match the generation and delivery of certain coupons with particular advertisements or announcements, but the delivery of the coupons would be manually controlled and entered into the system to appropriately correspond to the broadcast schedule. Alternatively, the coupon schedule and the broadcast schedule are integrally connected or formed together into a single schedule where the coupons and broadcast are automatically provided according to the schedule.

The generation and delivery of coupons may be random, scheduled, and/or upon the happening of one or more triggering advertisements or events. Preferably, the coupons are synchronized with an in-store media broadcasting system and are generated and delivered according to one or more triggering advertisements or events. The flexibility in the system allows the coupons to be generated as desired. For instance, it is contemplated that coupons may be generated and delivered to correspond to seasonal or weather changes, sporting events, promotions, holidays, and any other influencing happenings or occurrences.

For instance, coupons may be provided in response to weather or seasonal changes. If it is cold outside, in-store personnel may select to provide coupons for various products related to the cold weather, such as cold medicine, hot chocolate or coffee, blankets, winter clothing, and others; or if it begins to rain, in-store personnel may decide to provide a coupon for umbrellas or other items that would be desirable in such weather. Another example would be sports related coupons. In locations where sporting events are being held, various sports related coupons could be provided either before, during, and/or after the event. In still another example, coupons may be provided in response to different shopper demographics. For

instance, if during the times between 10 a.m. and 3 p.m. the store comprises 70% women, coupons may be provided that are directed to those items or services that may be of particular interest to women. These are just a few examples in which the present invention intelligent in-store couponing system may be utilized and how it could benefit businesses. Obviously, all of the different situations or circumstances cannot be presented herein. However, these will be recognizable and obvious to one skilled in the art.

Coupon delivery system 1100 comprises any type of device or system capable of delivering a coupon to a customer in a usable or redeemable format as directed by computer 1140 and the coupon management module stored thereon. As stated, coupon delivery system 1100 may be a type of printing device that prints out a physical paper coupon for use by the customer, or coupon delivery system 1100 may comprise a device capable of transferring an electronic or paperless coupon to the customer (e.g., onto a smart card or customer loyalty card); or coupon delivery system 1100 may comprise a system that notifies a customer of a coupon via a personal device of the customer (e.g., cell phone, PDA, etc.). Some of the contemplated coupon delivery systems include, but are not limited to, a kiosk located at any desired location within the business location; a shopping cart system that is supported directly on the shopping cart; a portable unit capable of being mounted or placed at various locations around the store, such as in aisles, at checkout stands, outside the store, etc.; a point-of-sale system; an internet web site; a customer's personal device (e.g., a cell phone, PDA, laptop, etc.); and others. Any one or more of these devices or systems may be in place at a particular business location.

The present invention further contemplates a plurality of coupon delivery systems at a single business location, perhaps each different in type. Providing different or a plurality of coupon delivery systems provides businesses the ability to generate and deliver different coupons to different coupon delivery devices existing within a single business location. Each coupon delivery system may be independently controlled and operated through the coupon management module on computer 1140. Multiple coupon delivery systems provides an even greater amount of flexibility for businesses as they can target different parts or segments of the store, and therefore different customers, with different offers, if so desired.

In another exemplary embodiment, Figure 4 illustrates computer 1140 that is stored and operated from a business location, but operably connected to and in communication with one or more coupon delivery devices 1100 through an in-store

network connection 1050 (e.g., Intranet). This embodiment is similar in function to the one just described, only the coupon delivery system 1100 is not directly connected to computer 1140, but is operated through a network connection.

In one exemplary operating arrangement, network 1050 may comprise a business location Intranet that couples or connects an in-store audio/visual system, a media broadcasting system, or any other common networked system. This network may also connect intelligent in-store couponing system 1018. Utilizing network 1050 enables more efficient control of and communication with intelligent in-store couponing system 1018, and particularly each of the various coupon delivery systems 1100 that are located within a business location. In addition, network 1050 provides a suitable interface for integrating intelligent in-store couponing system 1018 with one or more other networked systems, such as an in-store media broadcasting system to create an ad-driven coupon delivery system and method. In this operating arrangement, the intelligent couponing may be synchronized with the media broadcast, such that coupons are generated and delivered in response to triggering broadcast segments, the most common being advertisements. Indeed, advertisements may be played or broadcast as directed (i.e., by schedule, manual activation, etc.) via the in-store media broadcasting system. Prior to, during, or after the playing or broadcasting of a particular advertisement, the intelligent in-store couponing system is triggered, thus delivering a corresponding coupon as pre-determined by operators of both systems. This ad-driven coupon delivery system and method is unique to the present invention and provides several advantages over prior related couponing or coupon delivery systems and methods. The ad-driven coupon delivery system and associated methods are discussed in greater detail below.

Network 1050 provides a suitable interface for integrating intelligent in-store couponing system 1018 with other networked systems, such as a consumer or customer entrance detection and tracking system coupled with a customer information storage and management system. In this operating arrangement, customers of various business locations are identified and their shopping habits monitored. Information about the customer (e.g., demographics, shopping habits, and other information) is solicited, gathered, compiled, and stored in a customer database for later retrieval and use by system operators and/or store personnel. This information may be utilized to trigger, or otherwise deliver, coupons from intelligent in-store couponing system 18 based any information that can be learned from the acquisition of customer information. For instance, if a store manager knows from gathered customer

information that between the times of 10:00 a.m. and 3:00 p.m. that the store comprises 75% women, coupons for items or services that may be of interest to women can easily be provided. This operating arrangement is discussed in greater detail below.

Figure 12 illustrates another exemplary embodiment in that computer 1140 is a business chain computer that operably connects and is in communication with one or more coupon delivery systems 1100, each located at respective business locations throughout the business chain. In this embodiment, operating computer 1070 controls the intelligent in-store couponing of several business locations through a local area or in-store network 1050. As such, network 1050 may also comprise a business chain Intranet network linking together a plurality of individual business locations existing within the business chain, as well as any systems operating within the business chain, such as an in-store media broadcast or customer entrance detection and tracking system, as well as providing a universal couponing system. In this particular operating arrangement, network managers may efficiently and effectively control each of the coupon delivery systems 1100 located in each respective business location, as well as any other systems in operation. For instance, a business chain may have in operation a media broadcasting system that is centrally controlled and operated for the benefit of each business location. The intelligent in-store couponing system may be interfaced or integrated with the media broadcasting system to provide ad-driven couponing to the plurality of business locations.

Turning now to Figure 13, in another exemplary embodiment and on another level, the intelligent in-store couponing system 1018 may be operable within an administrative arrangement, wherein one or more administration personnel, through computers 1150, control the system operations of several business chains or business locations through a wide area or global user network 1060, such as the Internet. As shown in Figure 13, connections to various business chain computers 1110 may be direct or through an in-store network 1050, such as the one discussed above. In the operating arrangement shown in Figure 13, administration computers are connected to a central server system 1154 that comprises various servers for processing and storing data, as well as for facilitating communication with one or more business locations or one or more business chains. In one arrangement, central server system 1154 is connected through network 1060 to in-store computer network 1050, which may be connected directly to one or more coupon delivery systems 1100 or indirectly to one

or more coupon delivery systems 1100 through one or more client computers (business location computers).

As noted above, each business location may comprise any number of coupon delivery systems 1100 and these may be controlled by administrative personnel through administration computers 1150 in any connection or operating arrangement possible. Alternatively, as shown, and depending upon the type of coupon delivery system in operation, central server system 1154 may be connected directly to coupon delivery systems 1100 operable within one or more business chains directly through network 1060. Thus, if a kiosk comprising a print coupon dispensing device is located within a business location, the coupon dispensing device may be connected to and controlled by the administration through network 1060, without requiring an interface with any systems in the business location. This may be advantageous in situations where the business location has no in-store network in place. Intelligent couponing may still be possible through the network of the administration.

As stated, coupon delivery systems 1100 are controlled through an administration body, wherein administration computers 1150 connect to a central server 1154, which in turn connect to one or more business chains or business locations via a wide area or global user network (e.g., the Internet) 1060 and/or a local area or in-store network 1050. Through this connection, operators of the administration body can control the couponing functions of one or more business chains and a plurality of related or non-related business locations. As shown in Figure 13, the administration body, through its computers 1150, can be given permission and access to control the computer devices 1110 existing at each business location within the business chain, as well as the ability to control each coupon delivery device 1100 existing throughout the business chain. In the alternative, the administration body may control each coupon delivery device directly from the local area or in-store network 1050 of the business chain.

Another advantage of utilizing an administrative network arrangement is that other systems may be integrated with intelligent in-store couponing system 1018 to enhance its functions and abilities. In one exemplary operating arrangement, intelligent in-store couponing system 1018 may be integrally connected with an in-store media broadcast system 1014, also controlled and operated by administrative personnel.

Another exemplary operating arrangement intelligent in-store couponing system 1018 maybe integrally connected with a customer detection and tracking

system and customer information storage and management system to trigger coupons based such things as the customer's presence within the business location or the shopping behavior of certain customers.

Although it may be advantageous to integrate several of the systems identified in Figure 9 together, it is not necessary. Each system may be left to operate independently of any another, with coupons still being capable of being generated and delivered to customers according or in response to various advertisements, announcements, customer presence, etc. through use of some other program not requiring the systems to be integrated, such as a synchronization or scheduling program providing for pre-determined or planned (e.g., time, place, manner) coupon delivery, through manual initiation or triggering, or through other known means.

Figure 6 illustrates the exemplary operating arrangement of a preferred intelligent in-store couponing system 1018. As shown, intelligent in-store couponing system 1018 comprises at least one, if not all, of an in-store media broadcasting system 1014, a customer entrance detection and tracking system 1022, a customer information storage and management system 1026, and a coupon management module 1174, each connected to and in communication with a computer network, which may be a wide area network 1060 or a local area network 1050 or both. Intelligent in-store couponing system 1018 further comprises one or more coupon delivery systems 1100 also connected to and in communication with network 1050.

Coupon delivery system 1100 may comprise a kiosk 1160 capable of delivering a paper or paperless coupon, shopping cart device 1162 that is mobile and coupled to a shopping cart and that is also capable of delivering a paper or paperless coupon, an aisle unit 1164 that is similar in function to kiosk 1160, but more portable and that may be placed or located anywhere about a business location, a modified point-of-sale system 1166 capable of delivering paper or paperless coupons, a personal electronic device 1168, such as a cell phone, Personal Digital Assistant (PDA) that is capable of delivering a paperless coupon, a swipe card system 1170 capable of transferring an electronic or paperless coupon to a swipe card where the coupon may be redeemable at the point-of-sale or at another time, and an online web site that a customer may log onto to receive a paper or paperless coupon.

COMPUTER NETWORK-BASED IN-STORE MEDIA BROADCASTING SYSTEM

Referring back to Figure 9, the present invention intelligent in-store couponing system 1018, and associated methods, may employ or utilize an in-store media broadcasting system 1014 comprising a proprietary media distribution framework or

platform supported by and/or operated by several software modules. This in-store media broadcasting system 1014, and its associated business methods, are described in detail in United States Patent Application Nos. 10/145,920, filed May 15, 2002, and entitled, "System For and Method of Doing Business to Provide Network-Based In-Store Media Broadcasting," and 10/146,192, filed May 15, 2002, and entitled, "Providing a Multi-Tier Enterprise Level Application," each of which are incorporated by reference herein in their entirety.

In sum, the in-store media broadcasting system 1014 is preferably a computer network-based broadcasting system, such as a global computer network (e.g. the Internet) system that interconnects one or more, and preferably, a plurality of client player devices placed at a plurality of business locations, each of the client player devices being independently supported and in communication with an internal audio/visual system installed and existing within in a respective business location. The media broadcast is a highly customizable media broadcast that is supported on each of the client player devices. The media broadcast may comprise various media and informational content thereon (e.g., music, video, advertisements, announcements, community information, store information, promotional information, etc.) that may or may not be specific to the particular business location in which the client player device(s) is/are located. Each one of the client player devices is in communication with one or more central servers located within a central server system operated by administrative personnel. Each client player device exchanges information and broadcast content with the central server(s) on a scheduled basis.

The central server component includes application and database servers, as well as file storage devices to store and disseminate the media content. The central server is the intelligence center of the in-store media broadcasting system of the present invention and preferably communicates with all other components connected within the framework or platform using JDBC, FTP, RML, and HTTP protocols.

The client player devices or components are essentially computers located at each business location and include software application modules that function to play and log the media broadcast. The client player device(s) also functions to connect to the central server for updates, and to receive upgrades of the software and broadcast content, including music play lists and advertisements, if available. The client player device(s) preferably communicates with the central server using JDBC, and FTP protocols, and with using XML-RPC.

In-store media broadcasting system 1014 further comprises one or more system network managers that function to automate and manage the in-store media broadcasting system. This component is an independent computing device that may or may not be located on the central server. Indeed, it may be separate from the central server. The network manager component is in communication with the central server through the network configuration and is operated by IBN personnel. The system network manager component comprises a suite of software modules used to automate business functions, such as creating and modifying contracts, advertisements, and schedules. This component also provides reports to track the status of these specific functions. The network manager preferably communicates with the central server using RMI, HTTP, and JDBC protocols.

In-store media broadcasting system 1014 further comprises one or more chain managers operated by business location personnel, and includes software modules designed to manage each client player device in each store in the chain and the media content contained thereon. This component is preferably a computing device separate from the client player devices, but may reside on one or more client player devices. The chain manager component communicates with the each client player device using the XML-RPC protocol, and with the central server using the RMI protocol. As stated, in-store media broadcasting system 1014 comprises several proprietary software application modules functioning on one of the above-identified components to allow in-store media broadcasting system 1014 to operate as intended.

The media broadcast preferably comprises music, video, advertisements, announcements, or other broadcast content organized into play lists according to various criteria (e.g. genre, date, run-time, run frequency, etc.).

Through in-store media broadcasting system 1014, a national radio-advertising platform or network focusing on major retailers and service providers throughout the country is made possible. In-store media broadcasting system gives retailers and service providers the ability to broadcast customized music and messaging to their customers in any store in any part of the country. In addition, the radio-advertising network provides a targeted advertising venue for customer marketing companies and, unlike any other media, allows them to advertise products to select and targeted customers at the point of sale or at the point-of-decision, which style of advertising can be much more effective in terms of success and the number of relevant customers the advertisements actually reach.

The in-store media broadcasting system 1014 may be utilized to increase the intelligence or functionality of in-store couponing system 1018. By utilizing in-store media broadcasting system 1014, coupons may be made to correspond to the content being broadcast. In one exemplary embodiment, intelligent in-store couponing system 1018 may be interfaced with in-store media broadcasting system 1014 by selectively associating certain advertisements with related coupons, thus providing ad-driven couponing. In short, ad-driven couponing means that when certain advertisements are played or broadcast through the business location, one or more corresponding coupons may be provided to customers through a coupon delivery device. Those coupons that are synchronized with the broadcast advertisements, or those ad-driven coupons, will typically comprise a discount or other incentive for the product or service being promoted or advertised.

Advertisements may also be followed up with announcements from store personnel notifying customers of available coupons for the product or service just advertised. Coupons may be generated automatically, or manually by one authorized to do so.

The media broadcasts may comprise content, such as music or video, that is appealing to customers to make them feel more relaxed and comfortable, thus increasing the likelihood that they will purchase something. The media broadcasts may further comprise certain advertisements that are triggered to play in response to certain detected customers (as discussed below), which advertisements may serve to promote certain products or services of interest to these select customers. Or, the media broadcast may comprise a combination of these. Concurrent with or in association with the broadcast are various coupons that in some way correspond or pertain to the content being broadcast and that may, in response, be provided to the customers. Through this system, advertisers and store operators and managers can provide more targeted and intelligent advertising and marketing that greatly influences customer purchasing at both the point-of-sale, and more importantly at the point-of-decision, and that increases the likelihood customers will purchase those products and services promoted. This represents powerful marketing because not only does a customer hear advertisements or other media being broadcast while in the business location, but the customer is further enticed and given immediate opportunity at the point-of-decision to respond to the stimulus by obtaining a coupon on the item or service that may be redeemed at the time of purchase. Moreover, if interfaced with a customer entrance detection and tracking and customer information system, the

customer is even greater stimulated as a result of the in-store broadcast comprising content that is known to be of interest to that particular customer. As such, the effectiveness of both the advertising and the couponing of the business location is significantly increased because customers hear advertisements for products or services of high interest to them, and are provided related coupons on the spot, thus making them more likely to use the coupons and purchase the advertised product or service. As a result, advertisers will be able to create more flexible and targeted advertising, rather than being forced to optimize a general advertisement to appeal to as many people as possible. For instance, advertisements may be worded so that the advertisement itself informs customers that a coupon is currently available within the business location, as well as the physical location where the coupon may be obtained and where the customer can pick up the product or take part in the service being offered. This type of advertising and marketing in general ties the advertisement, the product, and the coupon together to increase impulse purchases, which account for the majority of retail purchases, particularly if the advertisement and coupon are offered at the point-of-decision. An example advertisement may read, "[s]hoppers, right now you can purchase Washington red apples for a 40% discount. A coupon is now available for a limited time only at the fruit stand in the produce section."

CUSTOMER ENTRANCE DETECTION AND TRACKING SYSTEM

As another exemplary embodiment, or as an alternative to random coupon dispensing, the system and method for dispensing coupons may be directly related to those specific individuals currently present within the store as determined by a customer entrance or presence detection and tracking system and based upon various customer information stored within a customer information storage and management system.

Customer entrance detection and tracking system 1022 may be any system known in the art for detecting a particular customer. This may include a customer loyalty or other card that the user swipes as he/she enters a business location, one or more biometric devices, such as a fingerprint or retinal scanning device, a manual input device that the customer may activate to alert the business of their presence, a product scanning device that tracks the items purchased by a customer, or any other similar system. The purpose of customer detection and tracking system 1022 is to allow a business location to detect and track the customers that enter.

Customer entrance detection and tracking system 1022 is closely tied with customer information storage and management system 1026. Information obtained

from the customer may be stored and managed/manipulated using customer information storage and management system 1026. These two systems may or may not be integrated with one another, but in a preferred embodiment they are. Embodiments may include each system operating separately, but wherein the functions of each are carried out for the purpose of detecting customers, retrieving stored data about the customers, and using the data to provide a more intelligent couponing system.

Customer information may be general (i.e., pertaining to customers as a whole or to an isolated and identifiable group of customers) or specific (i.e., pertaining to a particular customer). Customer information may be gathered using one or more common means, such as through a customer loyalty or preferred customer program, through a through unilateral solicitation by a business for information about its customers, through various surveys or questionnaires, or other known or not yet discovered means. Essentially, the present invention contemplates any type of system or method that may be used to obtain, store, and manage customer information for later use. Some of the more specific functions of customer detection and tracking system 1022 include, but are not limited to, detecting and identifying a customer, monitoring the customers in the business location at all times, tracking the shopping behavior of the customers, tracking the purchase habits of the customers, and interfacing with customer information storage and management system 1026 to store and manage the data. Some of the specific functions of customer information storage and management system 1026 include, but are not limited to, receiving personal and other demographic information about a customer, as well as any other pertinent information, storing this information in a computer database, compiling the information into a usable format, and managing and manipulating the information as desired.

The customer entrance detection and tracking system 1022 and the customer information storage and management system 1026 may be utilized to improve the overall couponing functions of the intelligent in-store couponing system 1018. By detecting customer presence and having available useful information about customers, various coupons may be provided based on this information. For example, if a particular customer was detected and the information retrieved for that customer indicated that he or she likes a particular kind of item because of previous purchases or some other indicia, a coupon may be triggered (e.g., either manually or

automatically) that offers to the customer some type of promotion or discount or other incentive to purchase that item.

The customer entrance detection and tracking system 1022 also allows the intelligent in-store couponing system to automatically load any available coupons that might be of interest to the customer based on information already obtained or learned from the customer. In one exemplary embodiment or operating arrangement, a customer would enter the business location where he/she would be detected, the customer, knowing that he/she has been detected would, if desired, access a coupon delivery system and search or scan for any available coupons that are of interest to the customer. Different coupons may be loaded into the coupon delivery system depending upon the customers currently present and detected. Moreover, coupons may be loaded for individual customers, for groups or types of customers, and/or for a population of customers as closely representative of the products or services that are to be promoted.

Still further, customer detection and tracking system 1022 allows a business to identify the presence of demographically similar customers. In such cases, coupons may be generated and made available that might be of interest to the type of customers within the identified group. These examples are merely representative of some of the possible couponing methods that are possible as a result of an association with a customer entrance detection and tracking system. As one skilled in the art will recognize, there are numerous other couponing methods that are made available by the association of the intelligent in-store couponing system with a customer entrance detection and tracking system.

The customer entrance detection and tracking system 1022 and the customer information storage and management system 1026 may further be integrated or interfaced with the in-store media broadcasting system 1014 to increase the intelligence of the couponing of a business location or business chain even more. Through the combined use of these two systems, a business may automate much of the couponing process. Of course, semi-automatic or manual couponing is still made available. By utilizing these two systems, customers may be detected. As they are detected, various media broadcasts can be loaded and played that would be most appealing to the detected customers. The content of these broadcasts and the particular arrangements could be based on already obtained and pre-determined demographic and other customer information stored in the system.

Thus, depending upon which customers are present at a given time, different in-store media broadcasts may be selected or triggered for play. In turn, those advertisements could have associated with them various related or otherwise relevant coupons that could be offered to customers in response to the broadcasted advertisement.

COUPON MANAGEMENT MODULE

The present invention intelligent in-store couponing system further comprises a coupon management module, which is preferably a computer program comprising computer code stored on a tangible medium for directing a computer to generate, receive, cause to be stored, organize, manage, retrieve, and transfer or deliver in-store coupons. In one exemplary embodiment, the coupon management module includes, among other things, means for generating a coupon, means for receiving a coupon, means for storing a coupon, means for organizing and managing a plurality of coupons, means for retrieving a coupon, and means for transferring or delivering a coupon to a coupon delivery system. Means for generating a coupon may comprise a computer code that directs a computer to prompt the user to enter specific data or coupon parameters (e.g., time of validity for coupon, type of discount or incentive, product or service to be applied to, etc.), or it may comprise computer code that allows a user to generate a coupon from pre-existing stored data. Means for receiving a coupon comprises any type of hardware or software for receiving data for inclusion into a coupon, or a coupon itself, or for use in managing or otherwise controlling coupons. Means for storing a coupon comprises any type of memory storage device as described herein capable of storing coupons and any data related to coupons. Means for organizing and managing a plurality of coupons comprises computer code that directs a computer to organize and manage coupons based on user input, automatically, or any other known means for managing a database of data. Means for retrieving a coupon comprises computer code that directs a computer to search for a coupon based on user input or selected search criteria. Means for transferring or delivering comprises computer code that directs a computer to deliver the data for any retrieved or loaded coupon to a coupon delivery device. Essentially, the coupon management module comprises any type of computer software program that allows a user to control the couponing systems and methods existing within or to be carried out for a business location or business chain.

The coupon management module may be in communication with one or more coupon databases that contain pre-existing coupons, data relating to the coupons, or data that may be used to generate a coupon. These coupons may be generated by advertisers, store owners, and others authorized to do so. One aspect of the coupon management module may be providing a coupon search tool for customers. Thus, as a customer enters a business location he or she may access a coupon generation and delivery system having a user interface that allows the customer to search for or scan a database of pre-existing coupons for any that may be of interest to the customer. In this regard, the customer is allowed to access the one or more coupon databases managed through the coupon management module.

With reference to Figure 15, shown is intelligent in-store couponing system 1018 in the form of an exemplary paper couponing system existing within a retail business chain having sales floor 1188. All aspects of intelligent in-store couponing system 1018 are controlled by in-store media broadcasting system 1014, which functions as described above, namely to broadcast media through amplifier 1180 and out of speaker 1184 located on the sales floor 1188. In communication with in-store media broadcasting system 1014 is coupon delivery system 1100, which operably connects to in-store media broadcasting system 1014 via in-store computer network 1050. In-store computer network 1050 is shown as a local area network, such as an Intranet, and is capable of connecting a plurality of coupon delivery systems 1100. Coupon delivery system 1100 is shown existing on sales floor 1188, which means it could be in the form of a kiosk system, an aisle or POD system, a shopping cart system, POS system, or other similar system. Any coupons delivered to customers is printed out on a paper coupon via coupon delivery system 1100. Once printed, the customer can physically take the coupon for later redemption, such as at the point-of-sale. As such, coupon delivery system 1100 must and does comprise the necessary components to print a paper coupon, such as a computer or computer network connection for receiving a print command, a temporary memory storage device (e.g., a printing cache or print queue), paper, ink, and a printer. Couponing, including the generation, synchronization, delivery, etc. may take place in accordance with any of the couponing means, systems, methods, or operating arrangements discussed herein. In the embodiment shown, the coupons printed on coupon delivery system 1100 are synchronized with the broadcast provided by in-store media broadcasting system 1014 so that as a particular advertisement plays, an appropriate or corresponding coupon is delivered. In a related embodiment, coupon delivery system 1100 is made generic so

that all coupon information is sent to coupon delivery system 1100, where the coupon is then printed on demand. Preferably, the coupons are driven from the same data source as the advertisements.

Another embodiment may comprise integration or an interface with a customer entrance detection and tracking system, or a combination of these.

The present invention also contemplates a stand-alone (e.g., a non-network system) coupon delivery system. Although a stand-alone system is simple, it is largely inflexible. A stand-alone system may, however, still be synchronized with advertisements. This would require advanced knowledge knowing when certain advertisements will play and how much the coupon is worth. As such, various coupons would have to be pre-loaded into the system.

Figure 16 illustrates a similar operating arrangement as the one illustrated in Figure 15. However, the exemplary embodiment in Figure 16 comprises a paper or a paperless coupon printing arrangement. Although many of the same components exist as illustrated in Figure 15, the arrangement in Figure 16 illustrates an additional coupon delivery system 1190 shown outside or without sales floor 1188. Coupon delivery system 1190 represents a coupon delivery system not physically network connected to intelligent in-store couponing system or that is not physically present within the business location. Thus, coupon delivery system 1190 may comprise a customer's personal electronic device, such as a cell phone, personal digital assistant (PDA), or other device through which a coupon may be delivered to the customer through customer notification means. Coupon delivery system 1190 may also comprise an internet web-site that a customer may access through the Internet from any location to print, download, or search for coupons.

Coupon delivery system 1100 may also comprise a paperless coupon system. The coupon delivery system may comprise a swipe card reader located on a kiosk, a shopping cart, or anywhere in the store, wherein coupon delivery system 1100 would download a coupon to a customer's coupon or loyalty card (a smart card). The electronic coupon would be transferred to the smart card for later redemption at checkout. One way of redeeming the coupon would be to associate the coupon with the customer's identification in a customer information database, which is interfaced with the POS system for application of the coupon during checkout. This would require a connection to the business location's database.

Some of the advantages to paperless or electronic coupons include a reduction in maintenance of coupon delivery systems because there would be no need to replace

things, such as paper or ink. Also, customers may easily carry a plurality of coupons without having to keep track of several papers. Other advantages exist as will be apparent to one skilled in the art.

Figure 17 illustrates a diagram of an operating computer 1070 that is used to control the functions and operations of the intelligent in-store couponing system. In a preferred embodiment, intelligent in-store couponing system comprises or has integrated with it an in-store media broadcasting system and a customer information storage and management system that works in conjunction with a customer entrance detection and tracking system. Each of these systems comprises a database of stored information that operating computer may access for later use. Intelligent in-store couponing system comprises a coupon database having various coupons and coupon information stored therein. In-store media broadcasting system comprises a media broadcast database that contains media content to be used during a broadcast. Customer information storage and management system comprises a customer database containing information about the customers of a business location or business chain. Customer information may include, but is not limited to, demographic information, such as the customer's age, gender, and address, the purchases a customer has made in a previous time frame (e.g., week, month, year), the number of times the customer has visited a particular business location, impulse purchases a customer has made upon receipt of a coupon, and any other data pertaining to a customer that may be useful to a merchant.

Referring now to Figure 18, shown is a flowchart of an exemplary method for providing intelligent in-store couponing. The intelligent in-store couponing system comprises the necessary software and hardware to carry-out the following steps in this and other methods described herein. As shown in Figure 18, the method comprises act 1200, storing input or downloaded coupon information into a database accessible by a coupon management module. This act comprises any type of data input methods known in the art, such as manual user entry, downloading or file transferring existing coupon information from a server or other remote computer, transferring existing coupon information from a memory storage device, such as a floppy disk, CD/DVD-ROM, scanning, etc.; as well as any methods for providing a coupon database and storing the coupon information into the coupon database to be managed by coupon management module.

The method also includes act 1204, wherein the system determines whether or not the user is authorized to access the coupon management module. This

determination may be made by prompting the user for a password or other identifying indicia that the user must input, or it may be determined through an identification device, such as a biometric scanner, a fingerprint scanner, etc. Other types of identifying systems and methods known by those skilled in the art of user identification are contemplated herein. If the user is not authorized, the system remains unavailable to the user and ends the user's ability to further access the system. If the user is authorized and this is determined as such by the system, the next step, act 1208, comprises providing means for allowing the user to select, or means for selecting, one or more coupons for delivery. Means for selecting comprises any type of known selection method, including, but not limited to, providing a search tool where the user can enter key words, such as the name of a product, into a search query to search the coupon database for any matches; providing a pull down menu listing the coupons available for selection; providing a listing or menu of all coupon in the database that the user may view and select; and others. Upon selecting one or more coupons for delivery, the system provides the user the ability to assign parameters to the selected coupon, act 1212. Means for assigning parameters may include any known user interface that allows a user to select and assign different parameters to the coupon governing the redemption of the coupon by the customer. Parameters may include, the amount of the coupon, the percent discount of the coupon, to whom the coupon may be provided, the expiration date or validity period of the coupon, delivery instructions or rules, to what type of delivery system the coupon is to be sent, the number of coupons to be provided, and any other incentives that are to be associated with the coupon, such as buy one, get the next half off, and others.

Thus, when the system delivers the coupon to the customer, the parameters assigned to the coupon are stored in the system and then function to govern the redemption of the coupon by the customer. Once the parameters are assigned, the system processes the selected coupon and its associated parameters, act 1216. The system may then prompt the user to select another coupon, act 1220. If the user elects to do so, then he or she is taken back to the selection screen and is given the opportunity to select another coupon, act 1208. If the user does not wish to select another coupon, the system initiates and executes the various parameters assigned to the coupon prior to delivery, act 1224. Once the parameters are in place the system transmits the coupon to the delivery device or system, act 1228. The system then causes the coupon delivery system to generate the coupon in a customer usable

format, act 1232, according to the assigned parameters. Once in a customer usable format, the coupon is then delivered to the customer for redemption, act 1236. As described above, the delivery of a coupon may be in a paper or paperless (electronic) format within one of the several operating arrangements described herein.

With reference to Figure 19, shown is a flowchart of another exemplary method for providing intelligent in-store couponing, which comprises interfacing into an intelligent in-store couponing system an in-store media broadcasting system. In this embodiment, the method comprises act 1200, storing input or downloaded coupon information into a database accessible by a coupon management module, and providing access to an authorized user, act 1254. These steps are similar to the like steps described above in Figure 18. The method further comprises interfacing or integrating an in-store couponing system with an in-store media broadcasting system, act 1258, like the one described above. This allows the in-store couponing practices of a business location to be synchronized or otherwise tied to a media broadcast for increased advertising and sales effects. Interfacing or integrating the intelligent in-store couponing system with a media broadcast system provides advertisers and store owners/managers/employees the ability to, among other things, associate one or more coupons with a broadcast segment (e.g., advertisement, announcement, video), to automatically deliver coupons based on a broadcast segment, to more effectively promote goods and services to a targeted audience, and to increase the influence of customers at the point-of-sale, as well as at the point-of-decision, thus increasing the marketing efforts of business. As such, act 1262 comprises means for allowing a user to associate one or more coupons with at least a portion or segment of a broadcast, such as an advertisement. Association of a coupon may be accomplished by manually triggering a coupon in response to a played media broadcast, automatically according to a pre-arranged program schedule, or any other known means. Once coupons have been associated with a segment of a broadcast, the system provides means for accepting assigned parameters to coupons and the media broadcast, act 1266. Assigning parameters to a coupon may be accomplished as described above. Assigning parameters to a media broadcast segment may be accomplished in a similar manner, and may include the time of day the segment is to be played, the frequency the segment is to be played, the days the schedule is to be played, any custom parameters that are available, and others. Upon assigning parameters, act 1270 comprises initiating the playing of the broadcast at the business location. As the broadcast is being played, coupons are delivered upon being triggered by the segment

to which they are associated or by any other pre-determined triggering events or parameters, act 1274. As the triggering segment is played, the system accesses the coupon database, act 1278, initiates and executes the assigned parameters, act 1282, transmits the coupon to a designated coupon delivery system or device, act 1286, causes coupon to be generated in a customer usable format, act 1290, and delivers the coupon to a customer, act 1294, each of these as described above.

Figure 20 illustrates a flowchart of another exemplary method for providing intelligent in-store couponing, which comprises interfacing into an intelligent in-store couponing system both an in-store media broadcasting system and a customer entrance detection and tracking system, as well as a customer information storage and management system, if separate from the customer entrance detection and tracking system. In this embodiment, the method comprises act 1300 comprising storing input or downloaded coupons and coupon information into a coupon database managed by a coupon management module. This is as described above. The method further comprises identifying a user as an authorized user, act 1304, and providing means for allowing a user to assign parameters to coupons, act 1308. Steps 1304 and 1308 are also discussed above. act 1312 comprises interfacing or integrating the intelligent in-store couponing system with a customer entrance detection and tracking system, act 1312, capable of detecting the presence of particular customers and tracking their in-store behavior, act 1316. As all customers may not have information currently obtained, the system checks to see if the customer is available in the customer database, act 1312. If not, non-customer related couponing procedures and methods may be resumed, act 1348, which may include manual triggering of coupons as various broadcast segments are played, or defaulting to a regular scheduled broadcast schedule with coupons associated with different segments of the broadcast. If customer information is available, the system can access the customer information database, act 1324, and return the available customer information, act 1326, for matching with one or more coupons. Based on the returned customer information, the system then accesses the coupon database, act 1328, to determine, act 1332, if there is a coupon available that would be of interest to the customer based on the returned customer information. If no coupons are created, one or more coupons may be created. Or, the system may return to or resume non-customer related couponing procedures. Or, the system may again initiate act 316 to search for another customer. If there are coupons available, the system initiates and executes the assigned parameters, act 1336, transmits the coupon to a designated coupon delivery system or

device, act 1340, causes coupon to be generated in a customer usable format, act 1344, and delivers the coupon to a customer, act 1348, each of these as described above.

It should be noted that the method illustrated in Figure 20 may also comprise the additional act of interfacing or integrating both the couponing and the customer detection systems with an in-store media broadcasting system, wherein customers may be detected and both the broadcast content and the delivered coupons would be based upon the customers detected at the business location.

Each of these above-described systems and methods of the present invention intelligent in-store couponing system provide significant advantages to both business owners and advertisers over prior related couponing systems and methods. First, the intelligent in-store couponing system allows businesses to immediately control and alter the purchasing conditions of the products or services currently being offered. Second, in-store personnel are able to effectively influence the decision-making and purchasing habits of the customer while they are actually within the business location. More particularly, in-store personnel are able to influence and entice customers at the very point-of-decision and point-of-sale. Third, advertisements are made more effective because customers may be immediately provided a coupon for the very products being advertised. Fourth, advertisers may change the way they advertise. For instance, they may be able to produce advertisements that are more customer-specific and they may be able to get away from the generalizations that are often wide-spread in advertising. Fifth, couponing may be in direct response to advertisements, announcements, etc., thus further stimulating a customer to purchase a product or service. One skilled in the art will recognize other advantages not specifically recited herein, and these are intended to be within the scope of the present invention.

METHODS FOR IN-STORE COUPONING (BUSINESS METHODS)

The present invention features several methods of using the intelligent in-store marketing systems and methods described above to conduct business within a store location. Rather, the present invention features several methods of using the intelligent in-store marketing system to carry out various intelligent or smart functions within a store location, including, but not limited to intelligent advertising, intelligent selling and promoting of goods and services, intelligent discounting and promoting, intelligent store-related customer messaging or contact or interaction, and intelligent return-on-investment analysis and reporting based on any of these.

With reference to Figure 21, shown is one exemplary method for couponing comprising act 1400, establishing and providing a coupon database comprising stored or input or downloaded coupons and coupon information; act 1404, providing means for accessing the coupon database; step, 1408, establishing an intelligent in-store couponing system; and act 1412, delivering to a customer one or more coupons at the point-of-sale or point-of-decision. The intelligent in-store couponing system may be any system described above, or any obvious variant thereof. In a preferred embodiment, the intelligent in-store couponing system comprises an in-store media broadcasting system integrated with the couponing system. In another preferred embodiment, the intelligent in-store couponing system comprises a customer entrance detection and tracking system and a customer information storage and management system. In still another preferred embodiment, the intelligent in-store couponing system comprises each of these stand-alone systems. Means for accessing the coupon database comprises a coupon management module or other sufficient computer program capable of searching the coupon database and retrieving designated or selected coupons. The act of delivering comprises delivering one or more coupons to a customer using a coupon delivery system as described above.

Reference is next made to Figure 22, which illustrates one embodiment of a couponing system which incorporates the ability to confirm that the requested coupon or coupons exist. This is accomplished by providing means for allowing a customer to request or select one or more coupons 1416. The requests are analyzed to determine if the requested coupon exists 1424. If the coupon does exist, the request is allowed to process 1420 and a coupon is generated for the customer.

Thus, as discussed herein, the embodiments of the present invention embrace systems and methods for measuring customer response, optimizing advertising, and providing an intelligent couponing system. The present invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes that come within the meaning and range of equivalency of the claims are to be embraced within their scope.

What is claimed and desired to be secured is:

1. A method for obtaining metric media values comprising the acts of:

broadcasting a test advertisement via at least two forms of media;

obtaining customer response data in response to the broadcasted test advertisement; and

generating metric values from the customer response data for the at least two forms of media.

2. The method of claim 1, wherein the test advertisement is broadcast in a restricted environment and the customer response data is obtained before the corresponding customers leave the restricted environment.

3. The method of claim 1, wherein the at least two forms of media include in-store media.

4. The method of claim 1, wherein the at least two forms of media include combinations of audio, video, radio, television, billboard, taste, and smell.

5. The method of claim 1, wherein the act of obtaining customer response data in response to the broadcasted test advertisement further includes obtaining customer response data from at least one customer response device.

6. The method of claim 1, wherein the act of obtaining customer response data in response to the broadcasted message further includes obtaining out-of-store customer response data from an advertiser for use in generating combination metrics of in-store media and out-of-store media.

7. The method of claim 1 further including the act of correlating the customer response data and generated metric values with particular customer information.

8. The method of claim 7, wherein the act of correlating the customer response data and generated metric values with particular customer information further includes obtaining customer information from a customer information device.

9. The method of claim 1, wherein the act of generating metric values from the customer response data for the at least one form of media utilizes a process of personal probability.

10. The method of claim 1, wherein the act of generating metric values from the customer response data for the at least one form of media utilizes a process of random duplication.

11. A method for providing intelligent in-store couponing, said method comprising:

providing a coupon database comprising at least one of stored, input, and downloaded coupon information;

providing a means for accessing the coupon database and for generating coupons with the coupon information;

establishing an intelligent in-store couponing system; and

delivering to a customer one or more coupons at least one of a point-of-sale and a point-of-decision.

12. The method of claim 11, further comprising interfacing said intelligent in-store couponing system with an in-store media broadcast system.

13. The method of claim 12, wherein the in-store media broadcast system further includes a computer network configured to interconnect a plurality of clients and a variable media output system.

14. The method of claim 12, wherein said in-store media broadcast system is selected from the group consisting of a computer network-based media broadcast system, a satellite-based media broadcast system, and an internally isolated media broadcast system.

15. The method of claim 11, further comprising interfacing said intelligent in-store couponing system with a customer entrance detection and tracking system.

16. The method of claim 15, wherein the customer entrance detection and tracking system further includes at least one of a customer loyalty card system, a biometric data system, a manual purchase information system, and a product scanning device.

17. The method of claim 15, wherein the customer entrance detection and tracking system further includes at least one of detecting and identifying a customer, monitoring the customers in the business location at all times, tracking the shopping behavior of the customers, and tracking the purchase habits of the customers.

18. The method of claim 11, further comprising interfacing said intelligent in-store couponing system with a customer information and management system.

19. The method of claim 18, wherein the customer information and management system further includes the ability to store individual customer information including at least one of identity, gender, common items purchased, money spent, common shopping time, and age.

20. The method of claim 11, wherein said intelligent in-store couponing system further comprises a system selected from the group consisting of an in-store media broadcast system, a customer entrance detection and tracking system, a customer information and management system, a return on investment system, and a trigger-based broadcasting system.

21. The method of claim 11, wherein said coupon is a paperless coupon.

22. The method of claim 11, wherein said coupon is a paper coupon.

23. A method for optimizing an advertisement in response to customer data comprising the acts of:

acquiring customer response data including optimized advertising variable settings for a plurality of advertising groups;

identifying an advertising target group;

generating an advertisement with optimized advertising variable settings for the advertising target group; and

broadcasting the optimized advertisement.

24. The method of claim 23, wherein the advertisement is audio based.

25. The method of claim 23, wherein the advertisement is video based.

26. The method of claim 23, wherein the advertisement is visually based.

27. The method of claim 23, wherein the advertisement includes a smell.

28. The method of claim 23, wherein the act of acquiring customer response data including optimum advertising variable settings for a plurality of advertising groups further includes:

broadcasting a plurality of test advertisements with unique sets of advertisement variable settings;

analyzing broadcasted advertisement variable settings in relation to customer response information; and

generating a set of optimized advertisement variable settings for a plurality of advertising groups.

29. The method of claim 28, wherein the act of broadcasting a plurality of test advertisements with unique sets of advertisement variable settings further includes:

broadcasting a test advertisement with a known set of advertisement variable settings directed at a particular advertising group; and

recording the first customer response of the particular advertising group;

if there is not sufficient customer response data, adjusting the advertisement variable settings and re-broadcasting the test advertisement directed at the particular advertising group.

30. The method of claim 28, wherein the act of analyzing broadcasted advertisement variable settings in relation to customer response information further includes:

compiling customer response information from a customer response device for each of the plurality of broadcasted advertisements; and

correlating customer response information with the advertisement variable settings of a corresponding broadcasted advertisement.

31. The method of claim 30, wherein the customer response device is a point-of-sale device.

32. The method of claim 30, wherein the customer response device is an RFID device.

33. The method of claim 30, wherein the customer response device is a survey response device.

34. The method of claim 28, wherein the act of generating a set of optimized advertisement variable settings for a plurality of advertising groups further includes:

identifying advertising variable settings that indicate a particular advertising group will respond to an advertisement; and

compiling sets of advertising variable settings for various advertising target groups.

35. The method of claim 29, wherein the act of identifying an advertising target group is performed by analyzing current customer information through customer information devices.

36. The method of claim 35, wherein the customer information devices include a membership card.

37. The method of claim 35, wherein the customer information devices include a credit card related device.

38. The method of claim 23, wherein the act of generating an advertisement with optimized advertising variable settings for the advertising target group further includes:

creating advertisement components that include variations corresponding to at least one of the advertising variable settings; and

compiling an advertisement using the advertising components that correspond to the optimized advertising variable settings for the advertising target group.

39. The method of claim 23, wherein the advertising variable settings include frequency of the advertisement.

40. The method of claim 23, wherein the advertising variable settings include duration of the advertisement.

41. The method of claim 23, wherein the advertising variable settings include play time of the advertisement.

42. The method of claim 23, wherein the advertising variable settings include volume of the advertisement.

43. The method of claim 23, wherein the advertising variable settings include gender of the speaker in the advertisement.

44. The method of claim 23, wherein the advertising variable settings include inclusion of sound icons.

45. The method of claim 23, wherein the advertising variable settings include background music played in the advertisement.

46. The method of claim 23, wherein the advertising variable settings include sound effects played in the advertisement.

47. The method of claim 23, wherein the advertising variable settings include presence of pricing information in the advertisement.

48. The method of claim 23, wherein the advertising variable settings include variations in pricing in the advertisement.

49. The method of claim 23, wherein the advertising variable settings include variations in offer made in the advertisement.

50. The method of claim 23, wherein the advertising variable settings include value added content included in the advertisement.

51. The method of claim 23, wherein the advertising variable settings include seasonal related messaging included in the advertisement.

52. The method of claim 23, wherein the advertising variable settings include category promotions included in the advertisement.

53. The method of claim 23, wherein the advertising variable settings include variations on a product message included in the advertisement.

54. The method of claim 23, wherein the advertising variable settings include promotional offers included in the advertisement.

55. The method of claim 23, wherein the method may be implemented as a computer program product for implementation within a computer system.

56. The method of claim 23, wherein the advertising variable settings include smell icons.

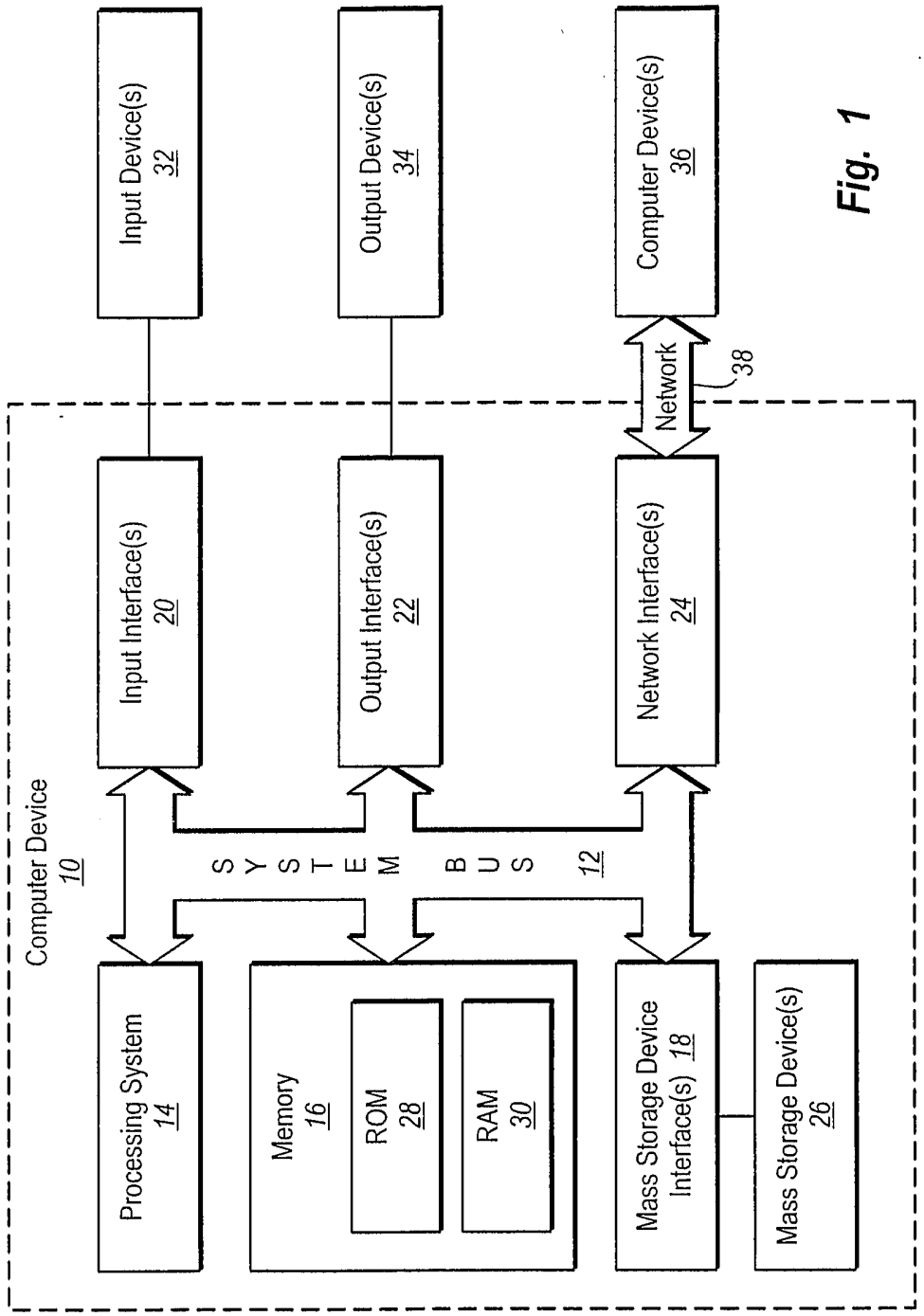
Input Device(s) 32
Output Device(s) 34
Computer Device(s) 36
Network 38
Computer Device 10
Input Interface(s) 20
Output Interface(s) 22
Network Interface(s) 24
SYSTEM BUS 12
Processing System 14
Memory 16
ROM 28
RAM 30
Mass Storage Device Interface(s) 18
Mass Storage Device(s) 26

Fig. 1

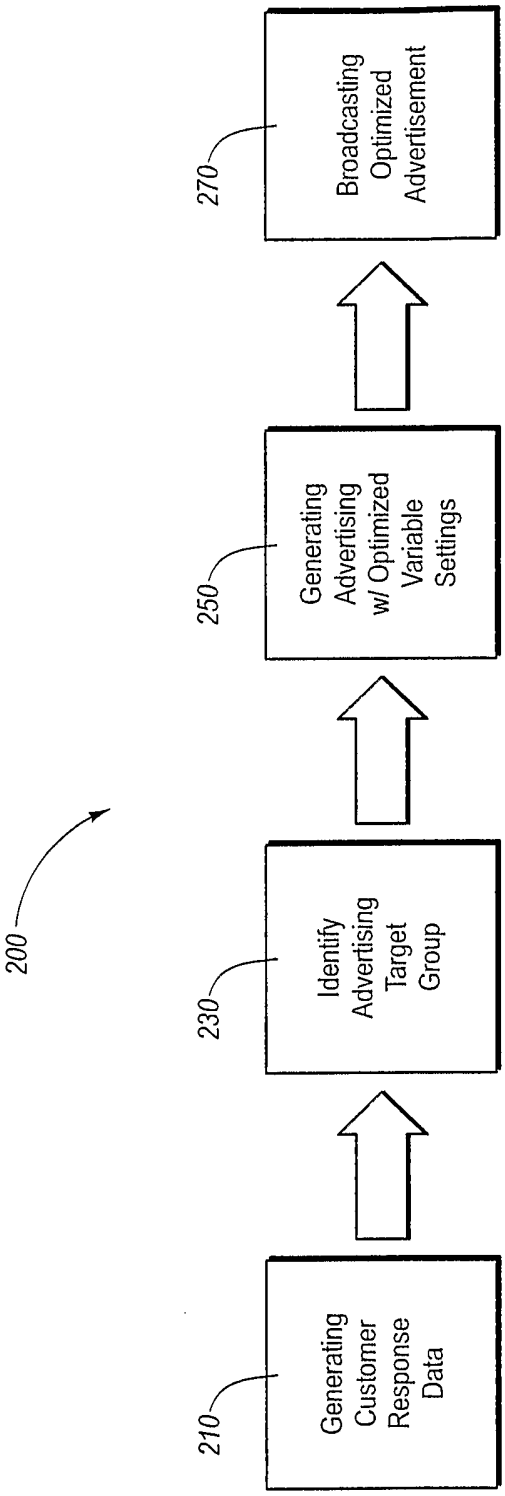
200
210
Generating Customer Response Data
230
Identify Advertising Target Group
250
Generating Advertising w/ Optimized Variable Settings
270
Broadcasting Optimized Advertisement

Fig. 2

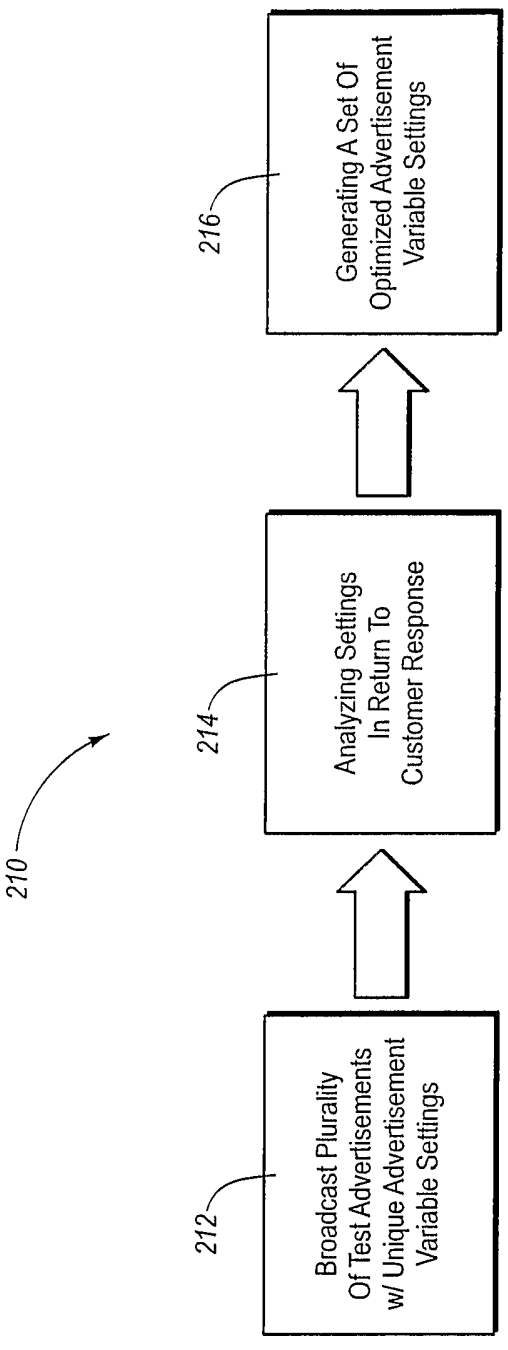
210
212
Broadcast Plurality Of Test Advertisements w/ Unique Advertisement Variable Settings
214
Analyzing Settings In Return To Customer Response
216
Generating A Set Of Optimized Advertisement Variable Settings

Fig. 3

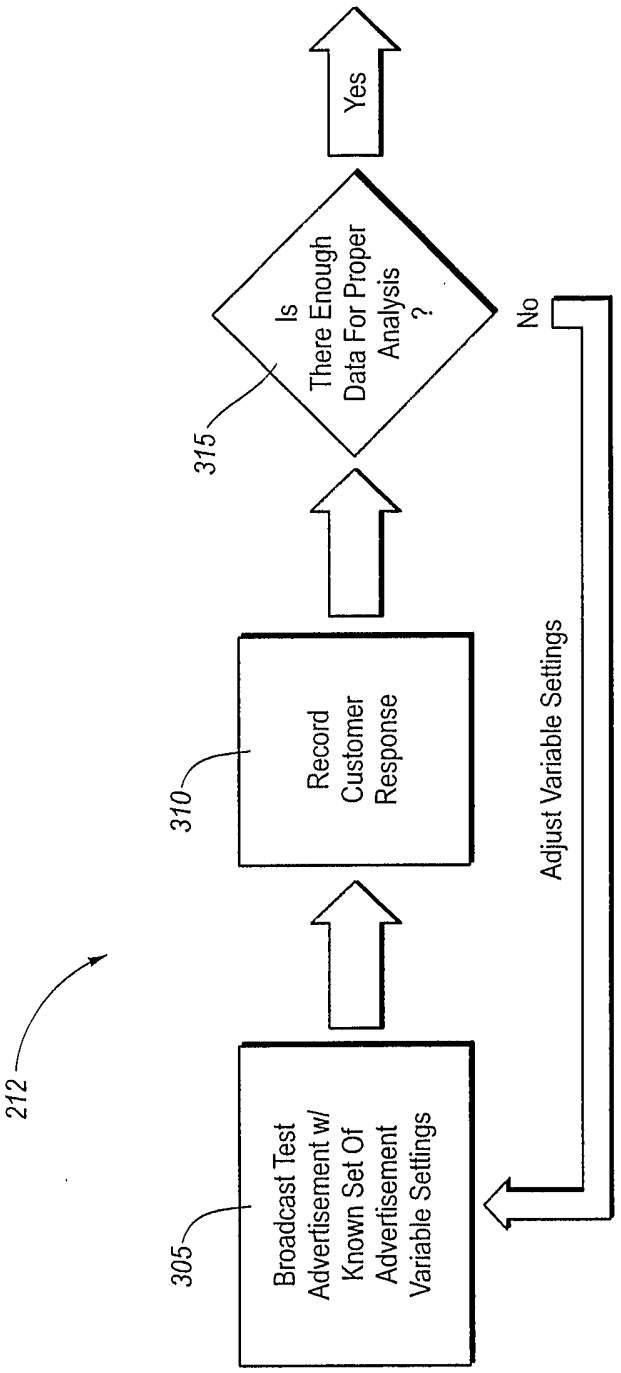
212
305
Broadcast Test Advertisement w/ Known Set Of Advertisement Variable Settings
310
Record Customer Response
315
Is There Enough Data For Proper Analysis ?
No
Adjust Variable Settings
Yes

Fig. 4

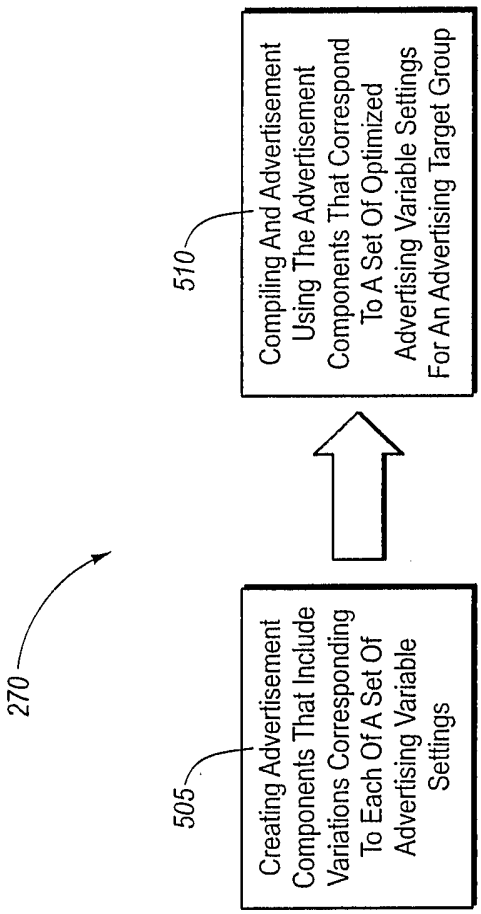
270
505
Creating Advertisement Components That Include Variations Corresponding To Each Of A Set Of Advertising Variable Settings
510
Compiling And Advertisement Using The Advertisement Components That Correspond To A Set Of Optimized Advertising Variable Settings For An Advertising Target Group

Fig. 5

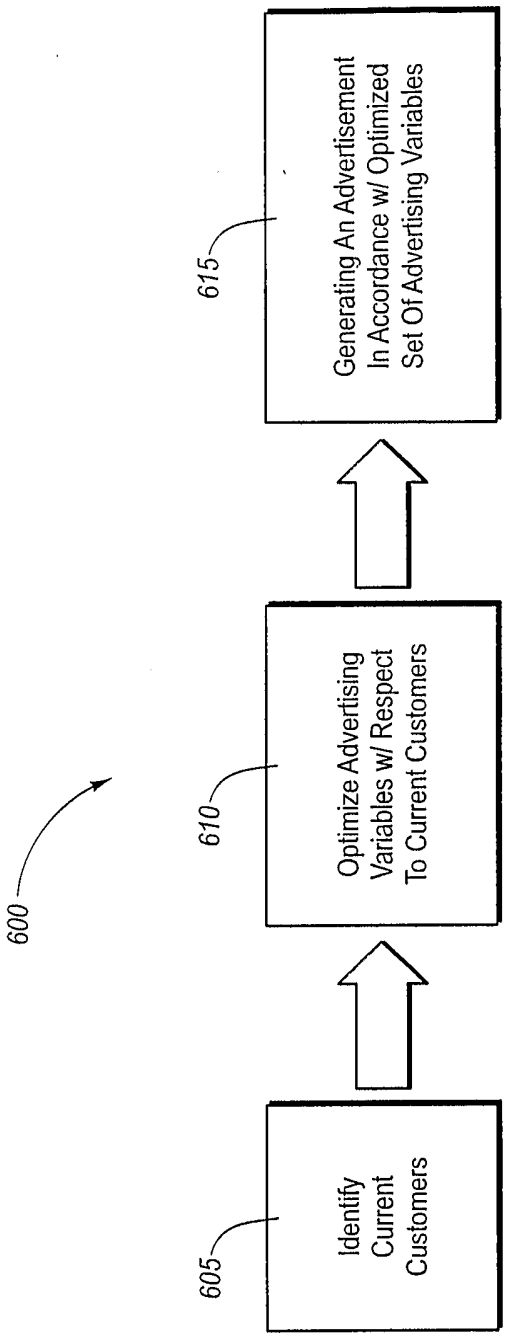
600
605
Identify Current Customers
610
Optimize Advertising Variables w/ Respect To Current Customers
615
Generating An Advertisement In Accordance w/ Optimized Set Of Advertising Variables

Fig. 6

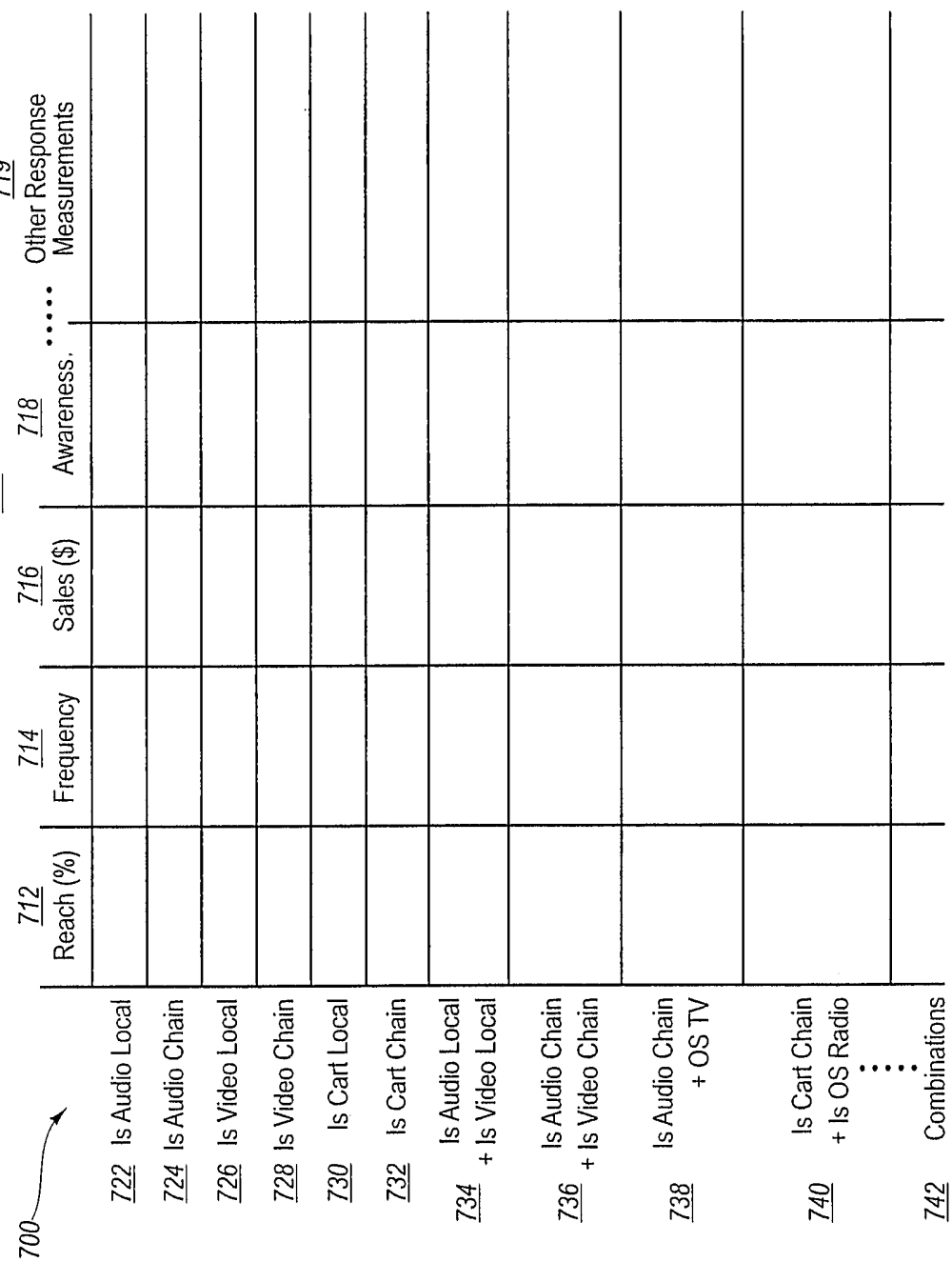
700
Metric 710
712 Reach (%)
714 Frequency
716 Sales ($)
718 Awareness
..... 719 Other Response Measurements
Media 720
722 Is Audio Local
724 Is Audio Chain
726 Is Video Local
728 Is Video Chain
730 Is Cart Local
732 Is Cart Chain
734 Is Audio Local + Is Video Local
736 Is Audio Chain + Is Video Chain
738 Is Audio Chain + OS TV
740 Is Cart Chain + Is OS Radio
742 Combinations

Fig. 7

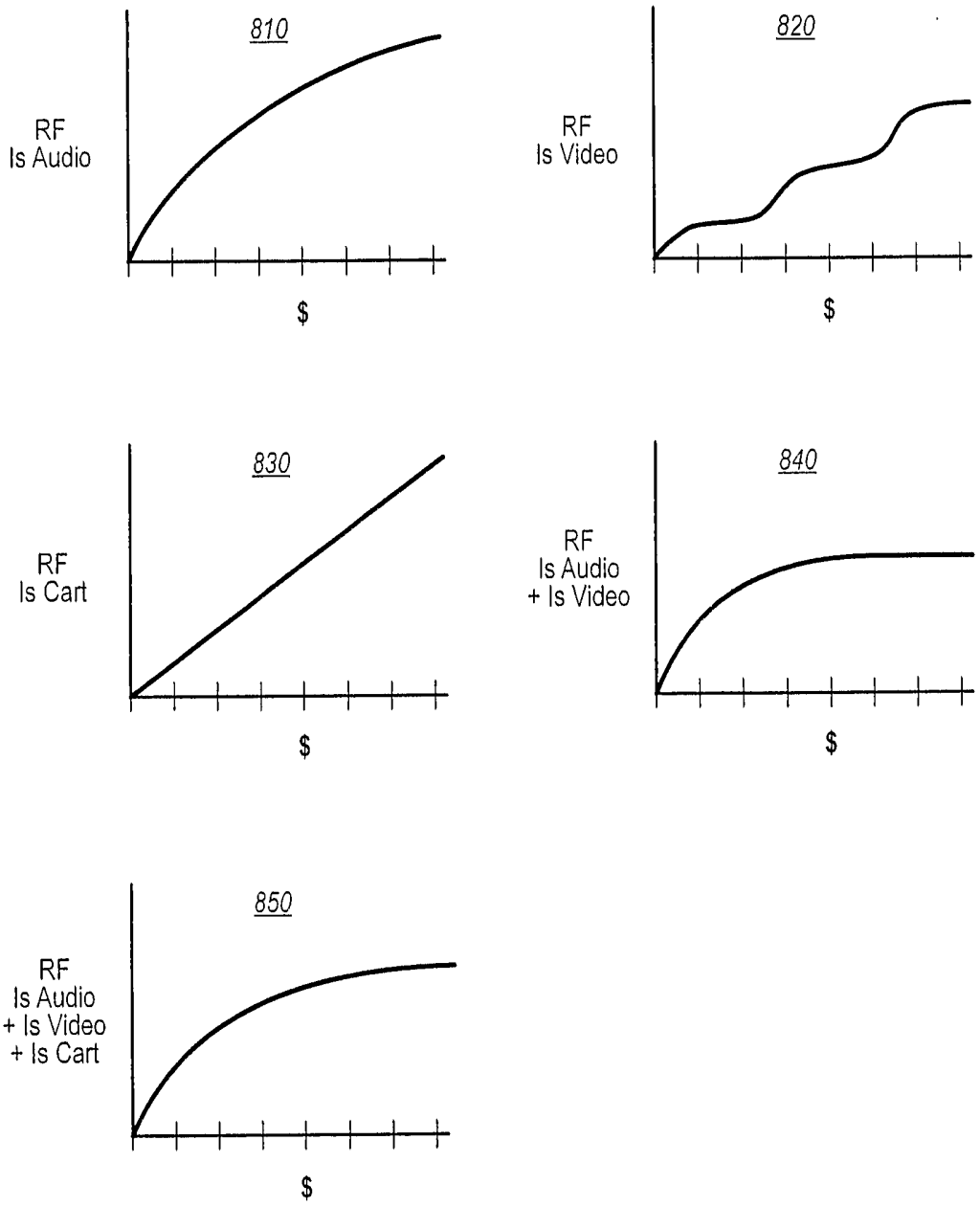
810
RF
Is Audio
$
820
RF
Is Video
$
830
RF
Is Cart
$
840
RF
Is Audio
+ Is Video
$
850
RF
Is Audio
+ Is Video
+ Is Cart
$

Fig. 8

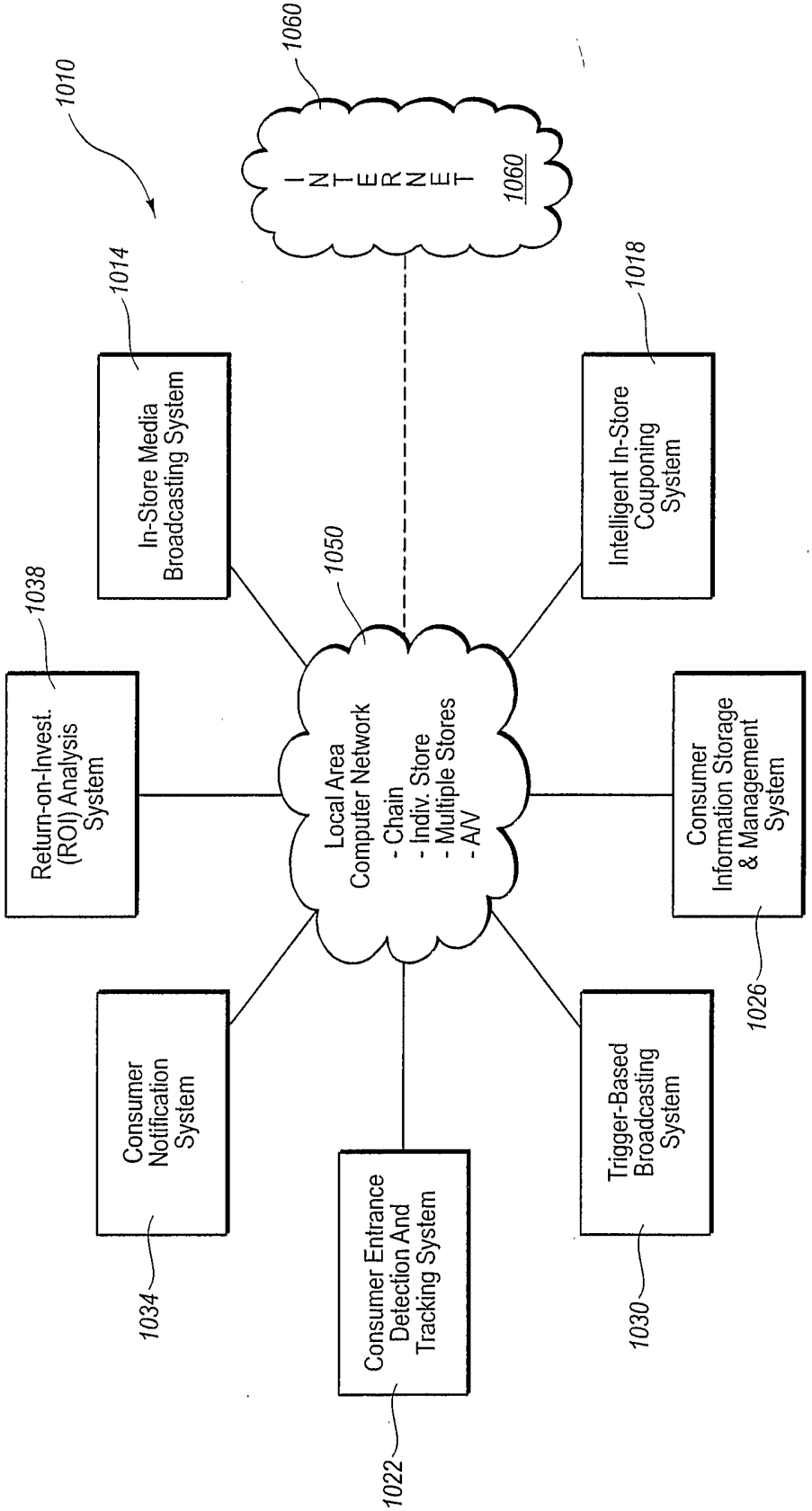
1010
1060
INTERNET 1060
1014
In-Store Media Broadcasting System
1018
Intelligent In-Store Couponing System
1038
Return-on-Invest. (ROI) Analysis System
1050
Local Area Computer Network
- Chain
- Indiv. Store
- Multiple Stores
- A/V
Consumer Information Storage & Management System
1026
Consumer Notification System
1034
Consumer Entrance Detection And Tracking System
1022
Trigger-Based Broadcasting System
1030

Fig. 9

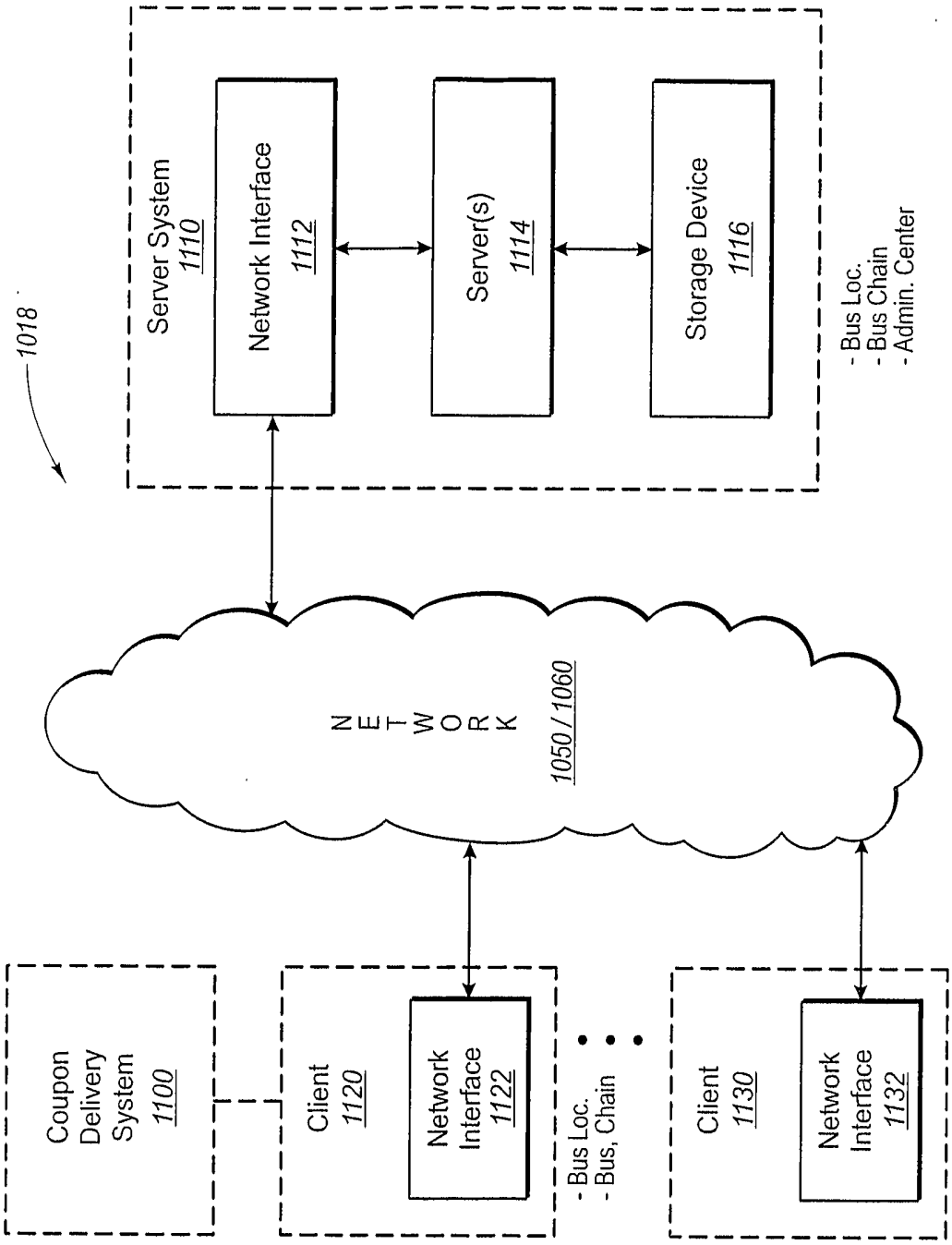
1018
Server System
1110
Network Interface
1112
Server(s)
1114
Storage Device
1116
- Bus Loc.
- Bus Chain
- Admin. Center
NETWORK
1050 / 1060
Coupon Delivery System
1100
Client
1120
Network Interface
1122
- Bus Loc.
- Bus, Chain
Client
1130
Network Interface
1132

Fig. 10

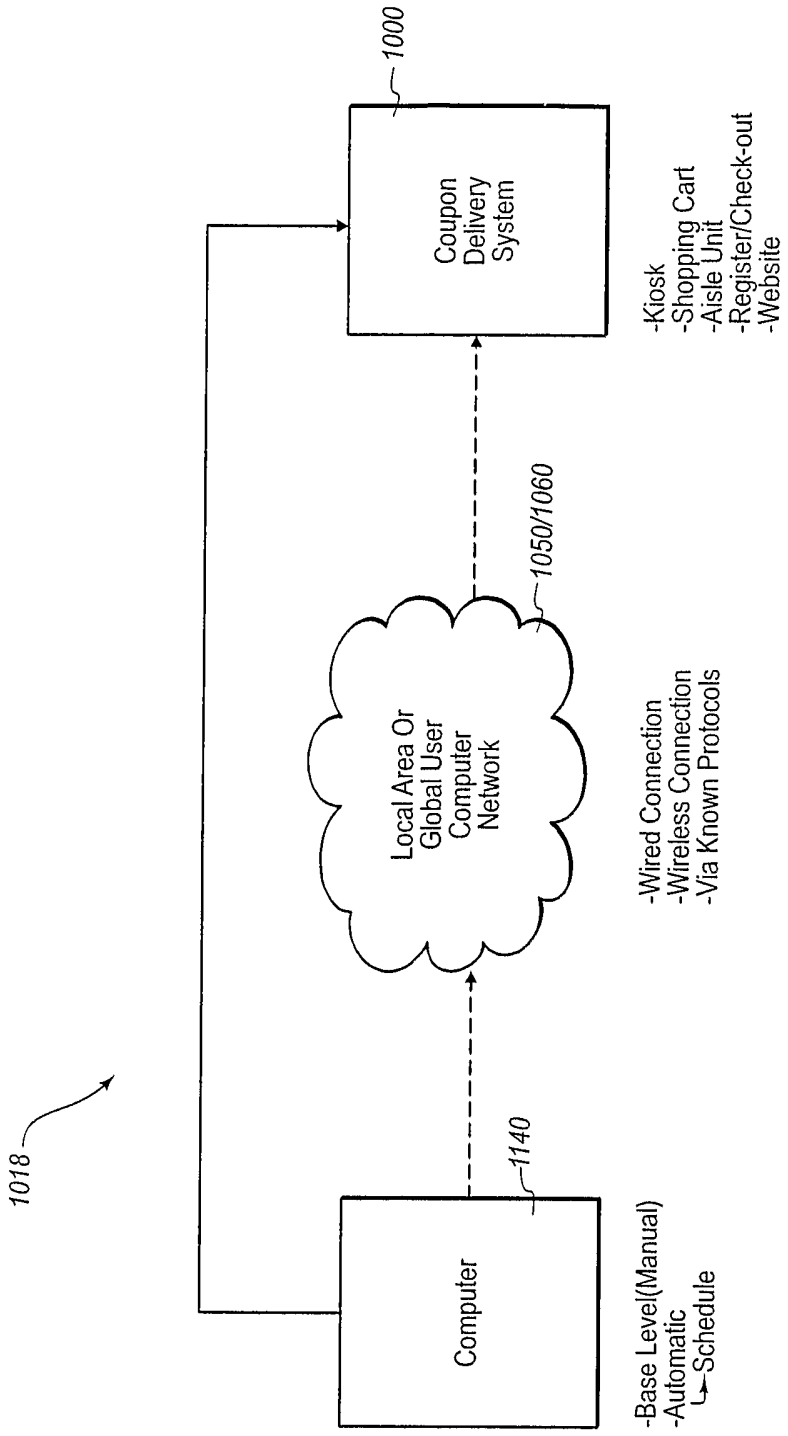
1018
1000
Coupon Delivery System
-Kiosk
-Shopping Cart
-Aisle Unit
-Register/Check-out
-Website
1050/1060
Local Area Or Global User Computer Network
-Wired Connection
-Wireless Connection
-Via Known Protocols
1140
Computer
-Base Level(Manual)
-Automatic
-Schedule

Fig. 11

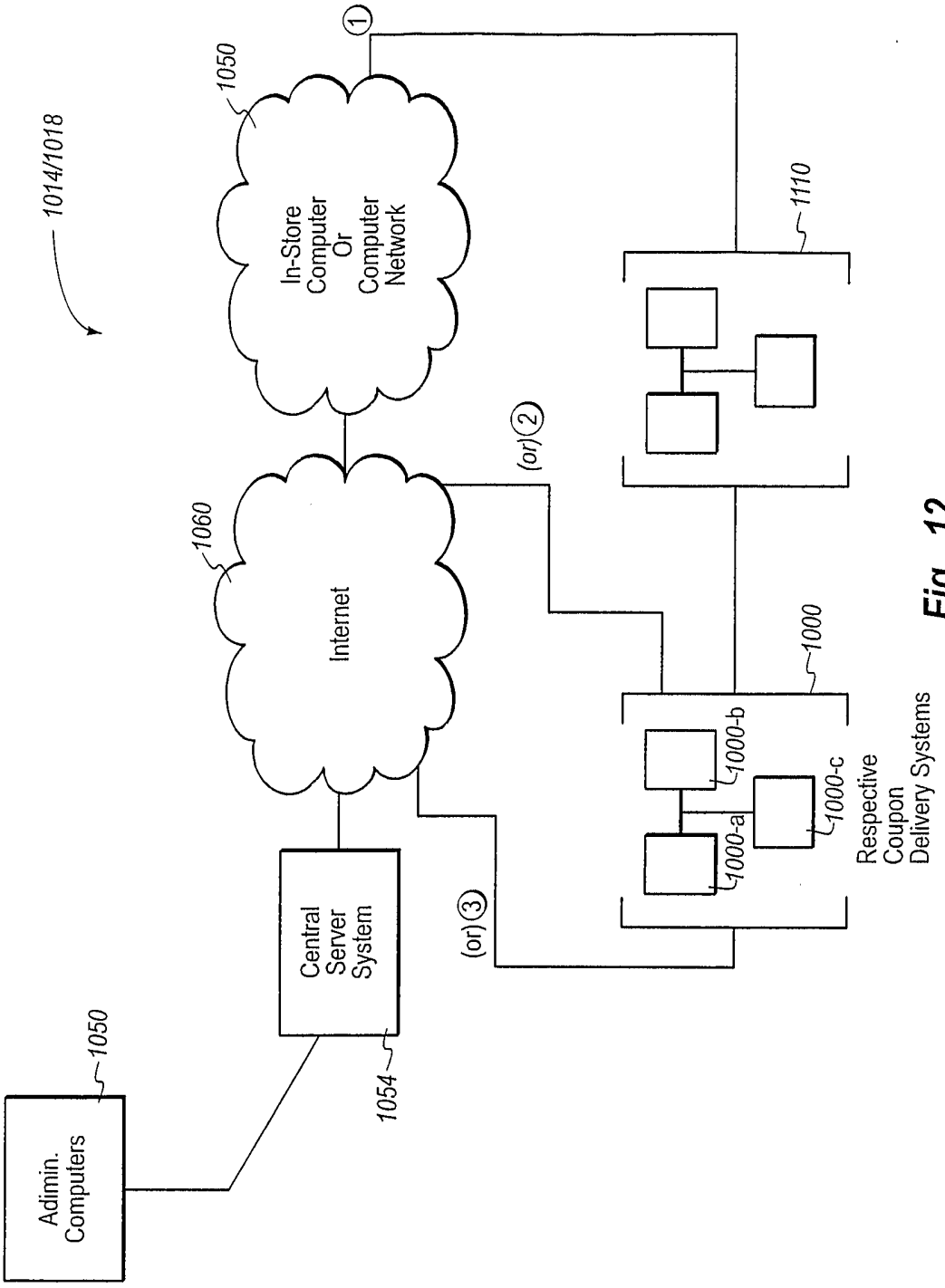
1014/1018
1050
In-Store Computer Or Computer Network
1
1110
(or) 2
1060
Internet
1000
1000-b
1000-c
1000-a
Respective Coupon Delivery Systems
(or) 3
Central Server System
1054
1050
Adimin. Computers

Fig. 12

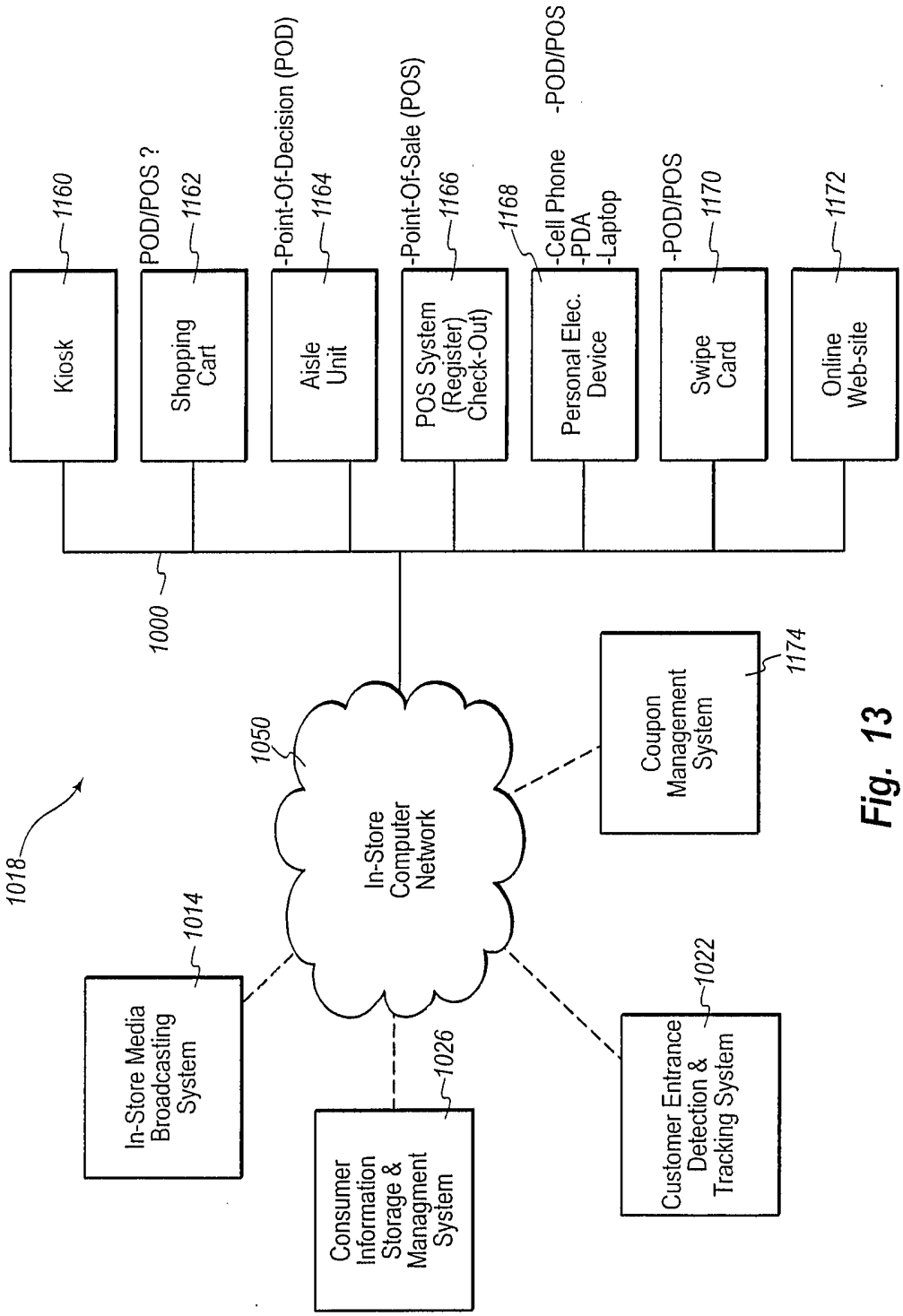
1160
Kiosk
POD/POS ?
1162
Shopping Cart
-Point-Of-Decision (POD)
1164
Aisle Unit
-Point-Of-Sale (POS)
1166
POS System (Register) Check-Out)
1168
-Cell Phone
-PDA
-Laptop
-POD/POS
Personal Elec. Device
-POD/POS
1170
Swipe Card
1172
Online Web-site
1000
1050
In-Store Computer Network
1174
Coupon Management System
1018
1014
In-Store Media Broadcasting System
1026
Consumer Information Storage & Managment System
1022
Customer Entrance Detection & Tracking System

Fig. 13

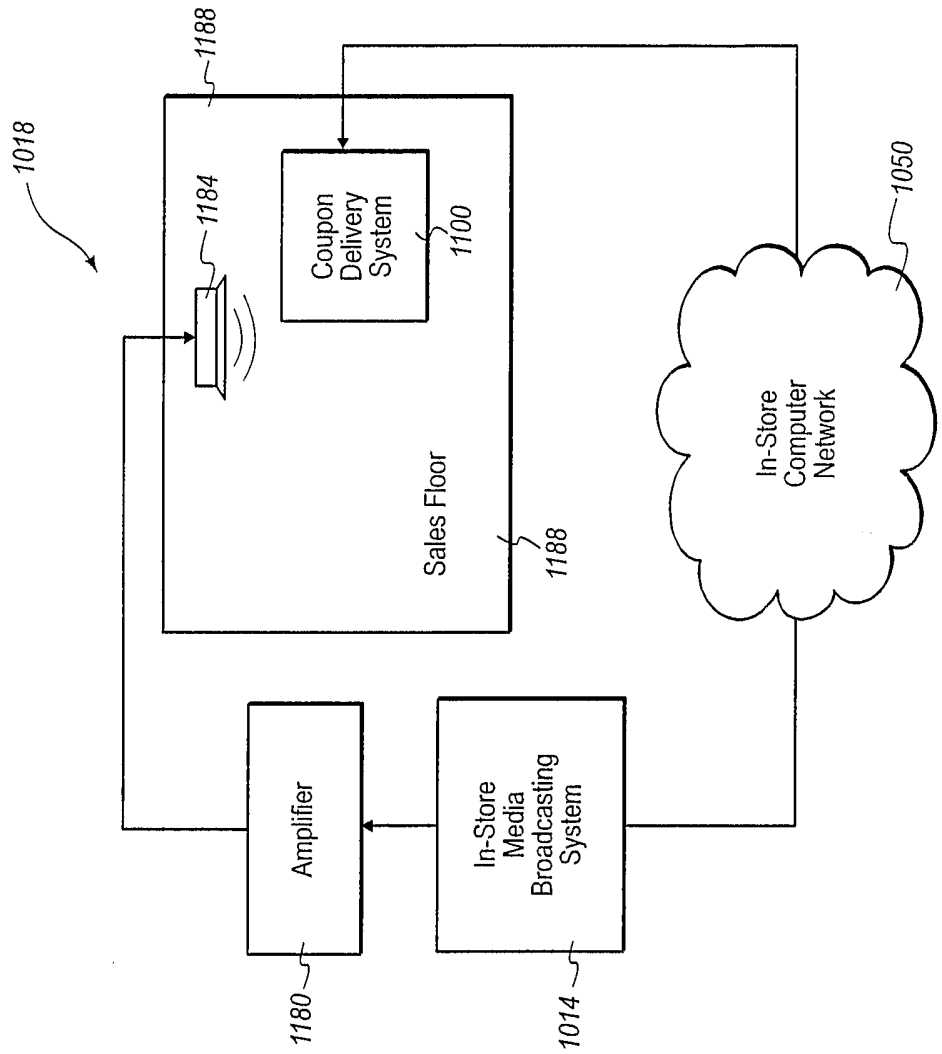
1018
1188
1184
Coupon Delivery System
1100
1050
In-Store Computer Network
Sales Floor
1188
Amplifier
1180
In-Store Media Broadcasting System
1014

Fig. 14

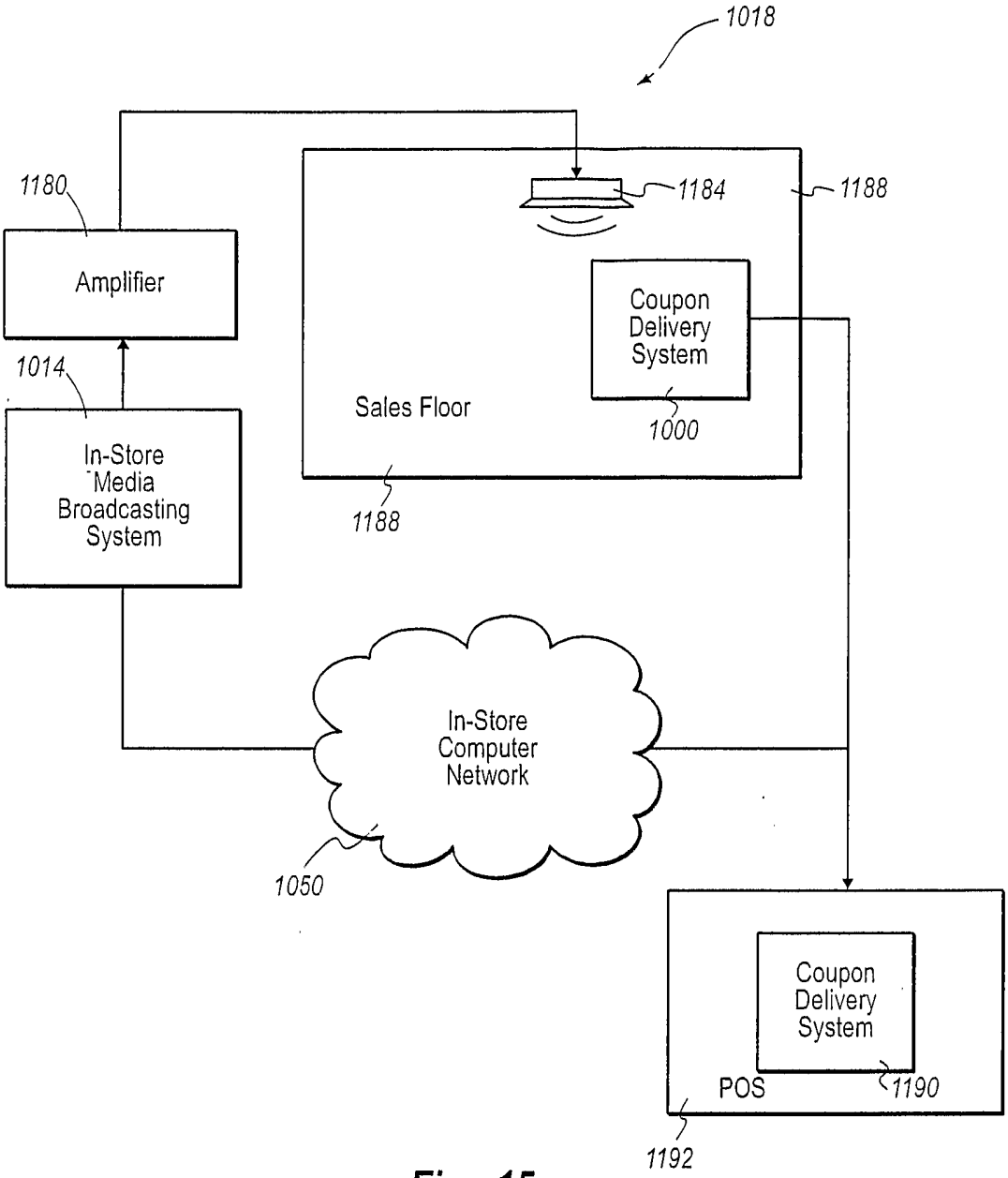
1018
1180
Amplifier
1014
In-Store
Media
Broadcasting
System
1184
1188
Coupon
Delivery
System
1000
Sales Floor
1188
In-Store
Computer
Network
1050
Coupon
Delivery
System
POS
1190
1192

Fig. 15

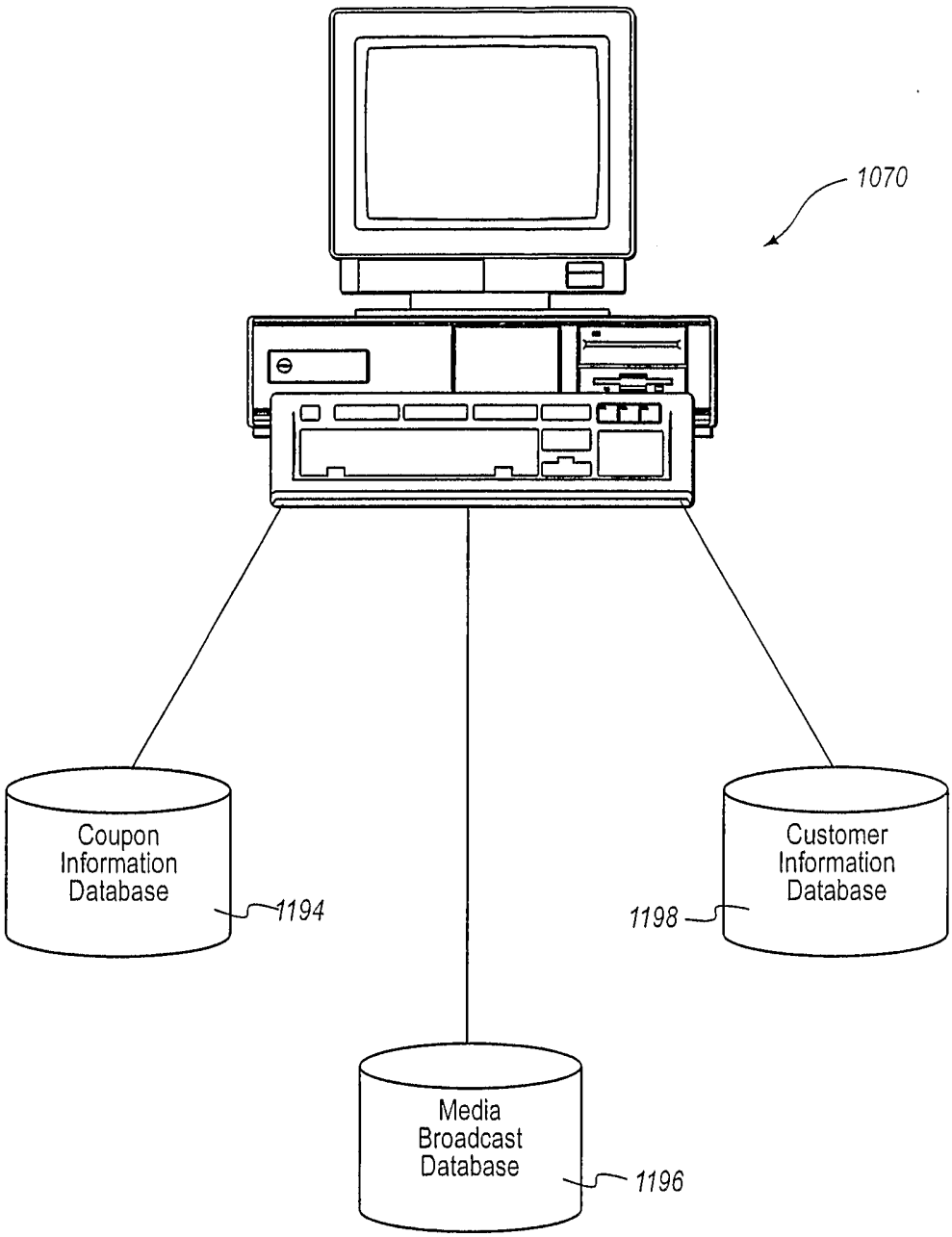
1070
Coupon Information Database
1194
Customer Information Database
1198
Media Broadcast Database
1196

Fig. 16

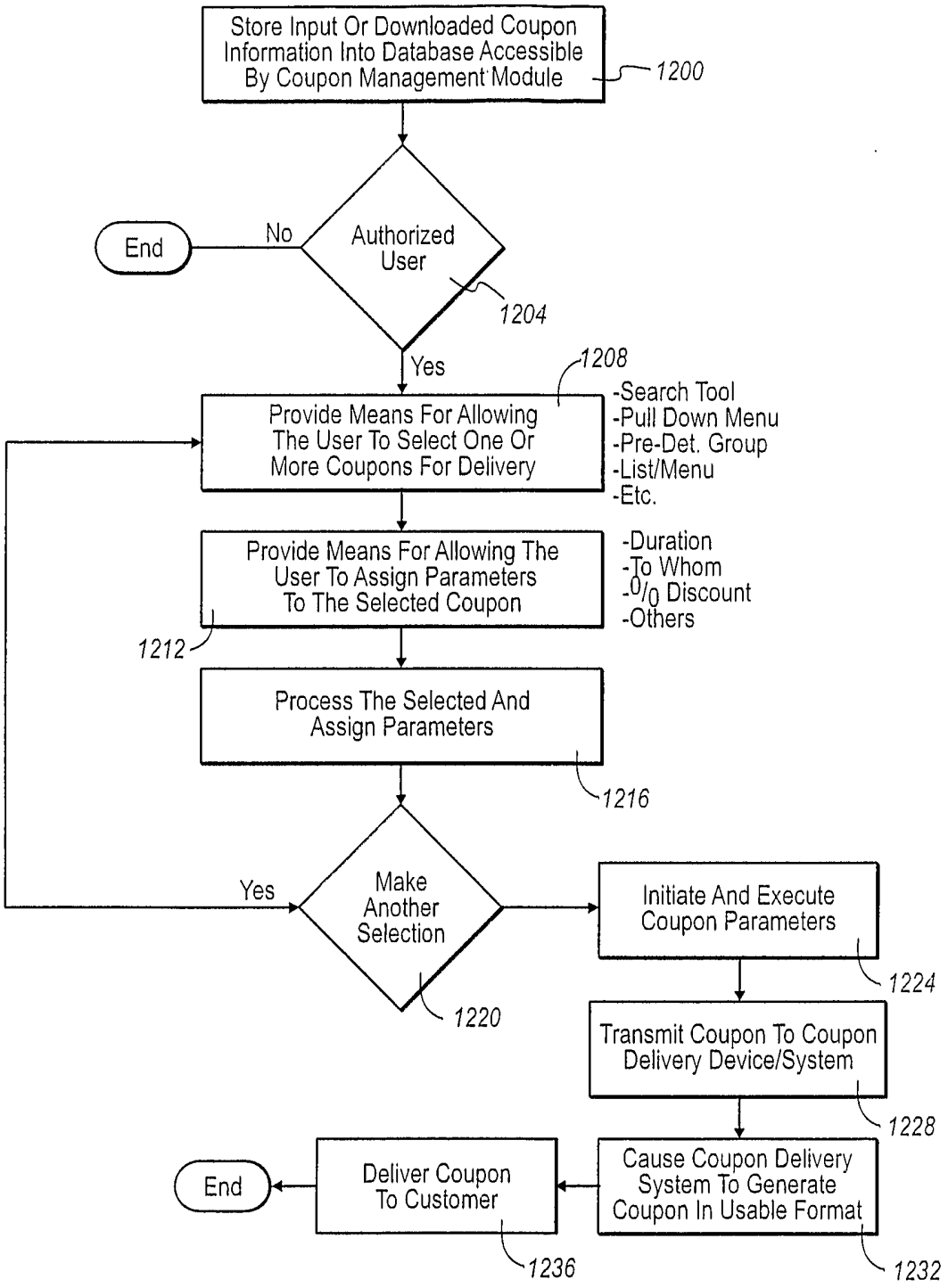
Store Input Or Downloaded Coupon Information Into Database Accessible By Coupon Management Module
1200
Authorized User
No
End
1204
Yes
1208
Provide Means For Allowing The User To Select One Or More Coupons For Delivery
-Search Tool
-Pull Down Menu
-Pre-Det. Group
-List/Menu
-Etc.
Provide Means For Allowing The User To Assign Parameters To The Selected Coupon
-Duration
-To Whom
-% Discount
-Others
1212
Process The Selected And Assign Parameters
1216
Make Another Selection
Yes
1220
Initiate And Execute Coupon Parameters
1224
Transmit Coupon To Coupon Delivery Device/System
1228
Cause Coupon Delivery System To Generate Coupon In Usable Format
1232
Deliver Coupon To Customer
End
1236

Fig. 17

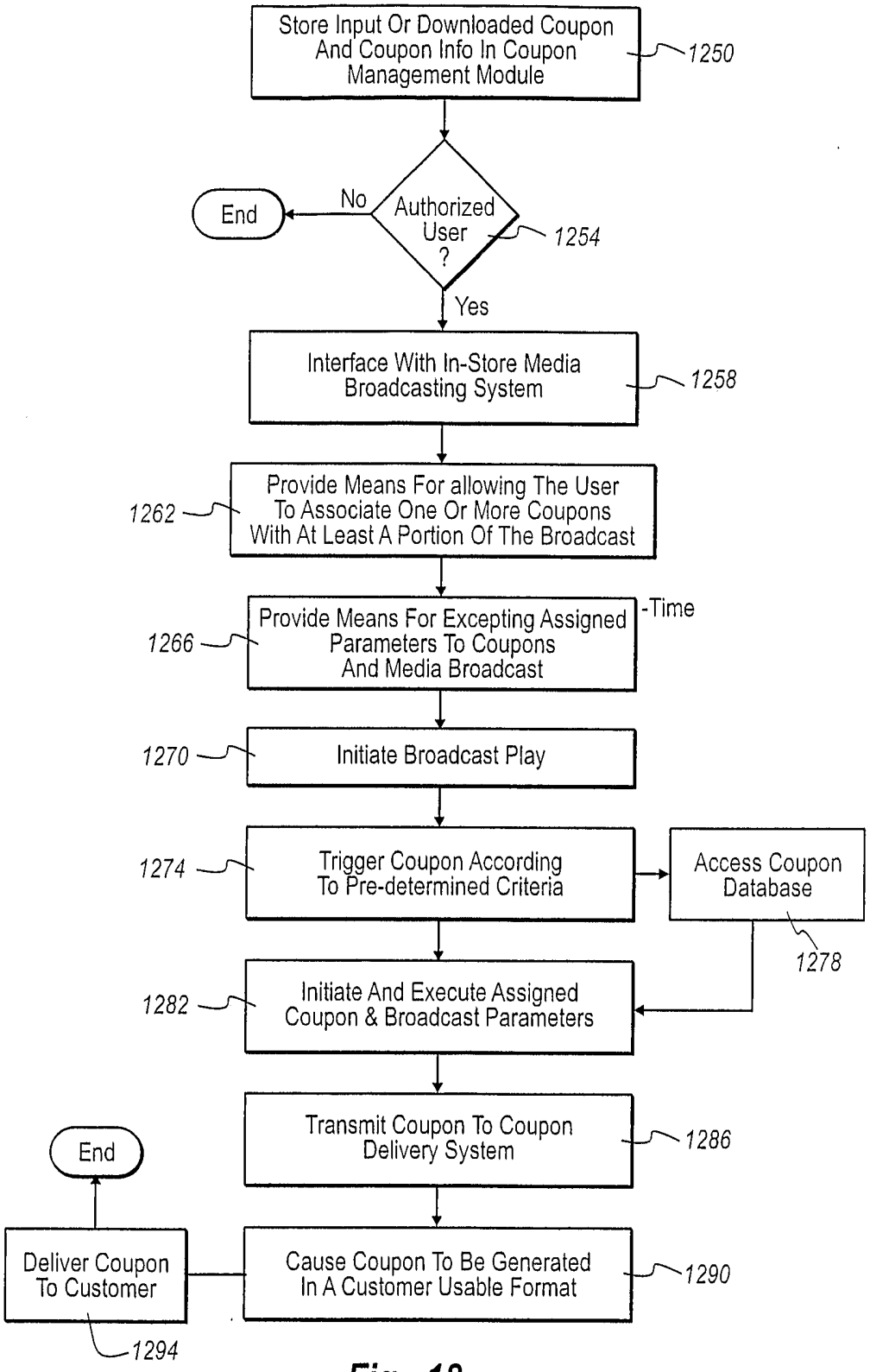
Store Input Or Downloaded Coupon And Coupon Info In Coupon Management Module
1250
Authorized User ?
1254
No
End
Yes
Interface With In-Store Media Broadcasting System
1258
Provide Means For allowing The User To Associate One Or More Coupons With At Least A Portion Of The Broadcast
1262
Provide Means For Excepting Assigned Parameters To Coupons And Media Broadcast
-Time
1266
Initiate Broadcast Play
1270
Trigger Coupon According To Pre-determined Criteria
1274
Access Coupon Database
1278
Initiate And Execute Assigned Coupon & Broadcast Parameters
1282
Transmit Coupon To Coupon Delivery System
1286
End
Deliver Coupon To Customer
1294
Cause Coupon To Be Generated In A Customer Usable Format
1290

Fig. 18

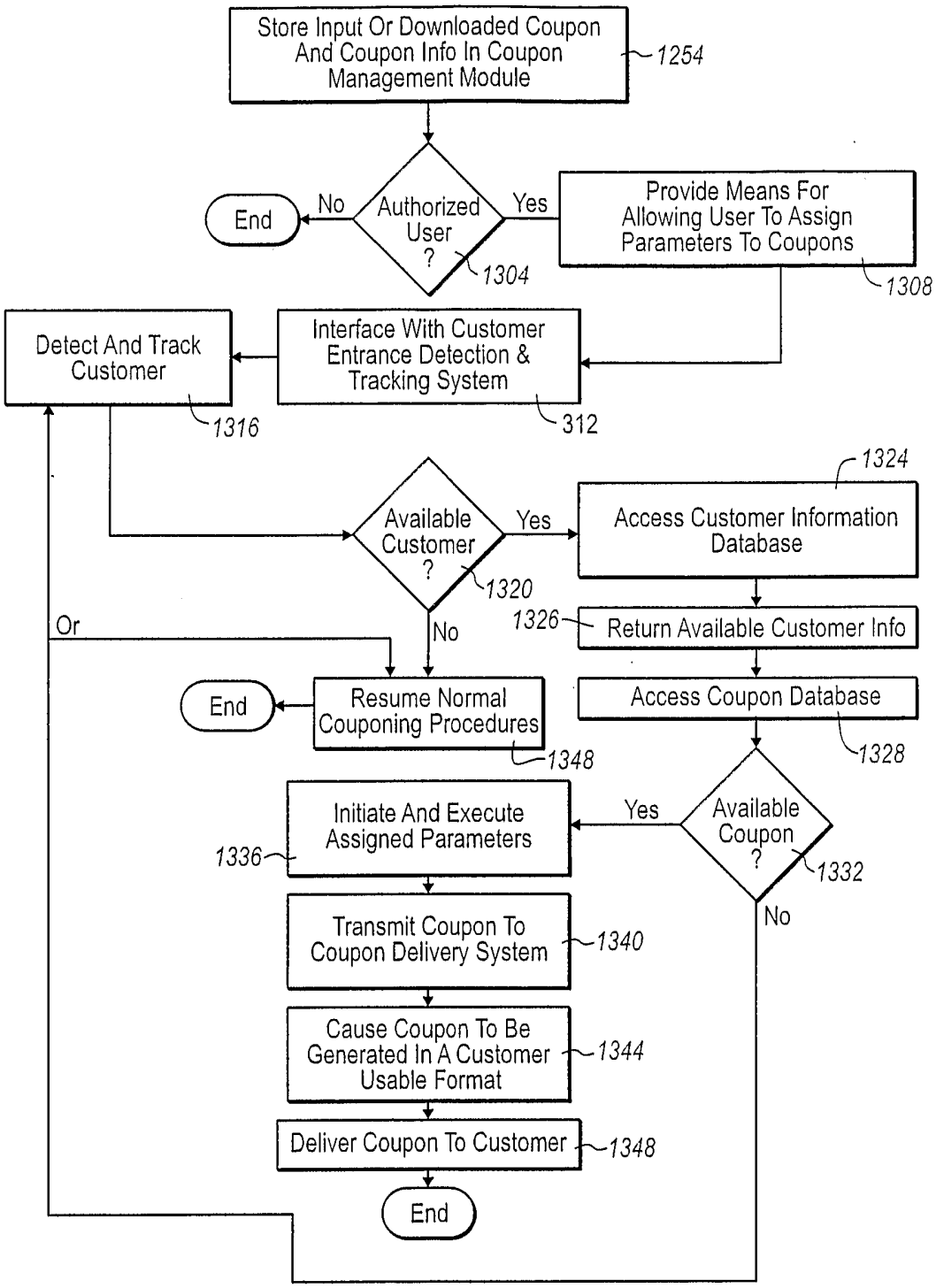
Store Input Or Downloaded Coupon And Coupon Info In Coupon Management Module
1254
Authorized User ?
1304
No
End
Yes
Provide Means For Allowing User To Assign Parameters To Coupons
1308
Interface With Customer Entrance Detection & Tracking System
312
Detect And Track Customer
1316
Available Customer ?
1320
Yes
1324
Access Customer Information Database
1326
Return Available Customer Info
Access Coupon Database
1328
Available Coupon ?
1332
Yes
Initiate And Execute Assigned Parameters
1336
No
Transmit Coupon To Coupon Delivery System
1340
Cause Coupon To Be Generated In A Customer Usable Format
1344
Deliver Coupon To Customer
1348
End
No
Resume Normal Couponing Procedures
1348
End
Or

Fig. 19

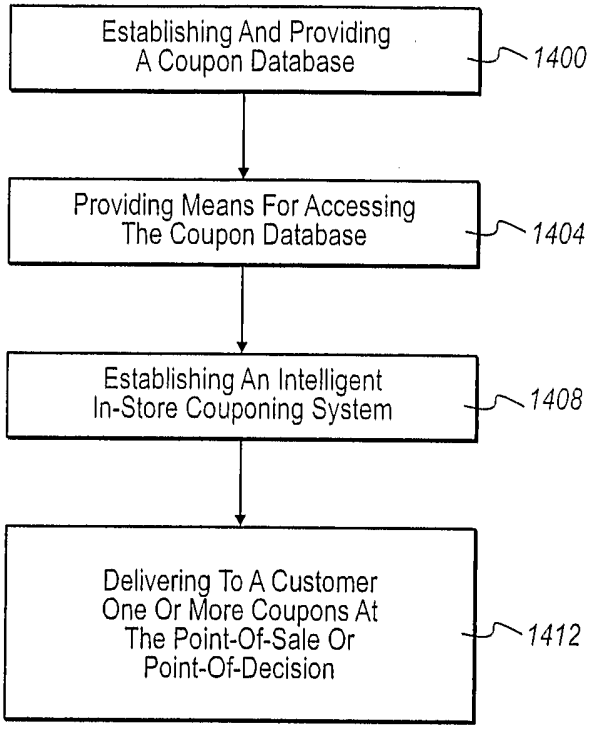
Establishing And Providing A Coupon Database
1400
Providing Means For Accessing The Coupon Database
1404
Establishing An Intelligent In-Store Couponing System
1408
Delivering To A Customer One Or More Coupons At The Point-Of-Sale Or Point-Of-Decision
1412

Fig. 20

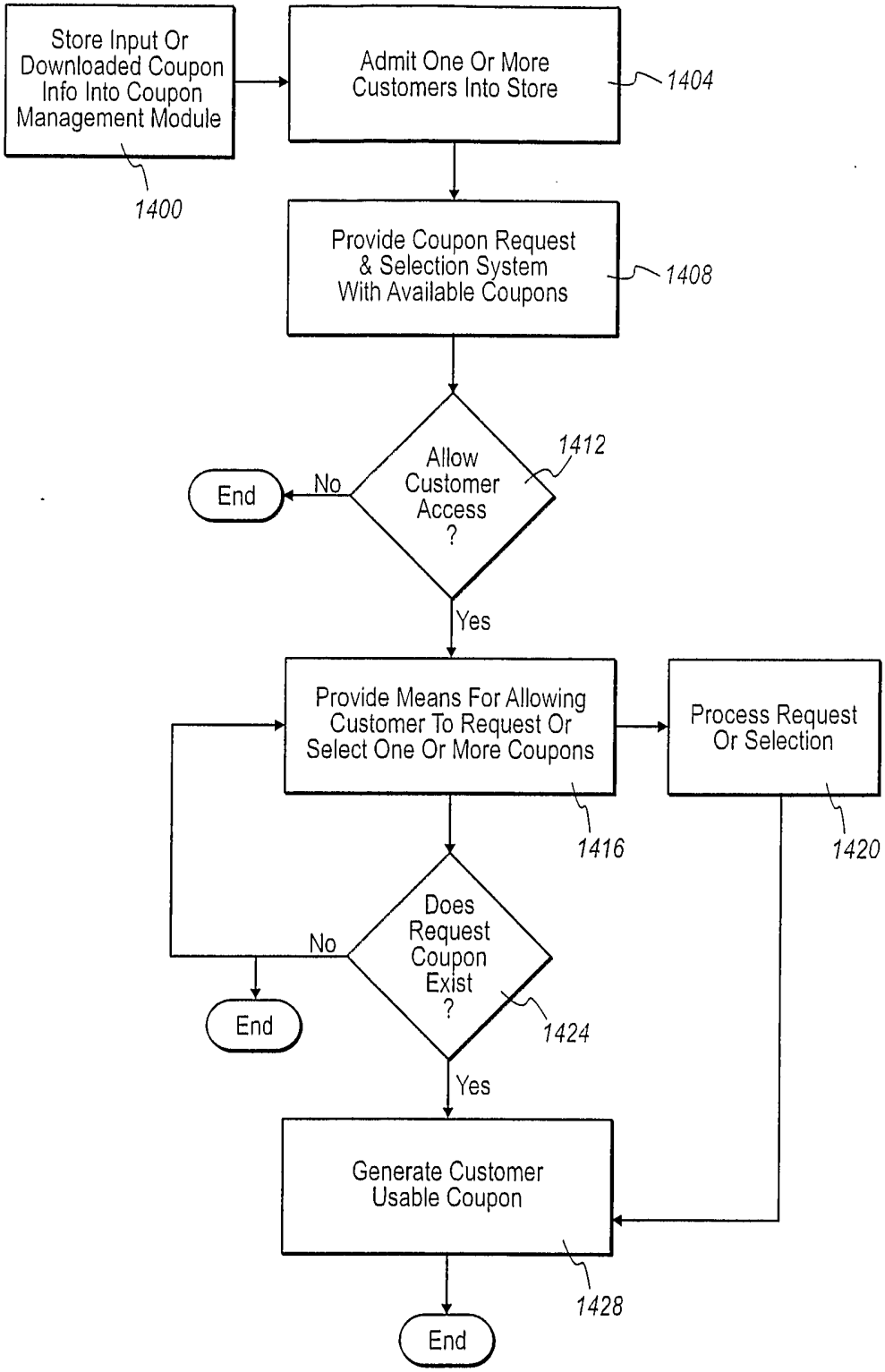
Store Input Or Downloaded Coupon Info Into Coupon Management Module
1400
Admit One Or More Customers Into Store
1404
Provide Coupon Request & Selection System With Available Coupons
1408
Allow Customer Access ?
1412
No
End
Yes
Provide Means For Allowing Customer To Request Or Select One Or More Coupons
1416
Process Request Or Selection
1420
Does Request Coupon Exist ?
1424
No
End
Yes
Generate Customer Usable Coupon
1428
End

Fig. 21