METHOD AND APPARATUS FOR DEVELOPING AND DISTRIBUTING INTERACTIVE ADVERTISEMENTS

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to a method and apparatus for developing and distributing interactive advertisements. More particularly, the present invention relates to developing and distributing, to a plurality of client devices, interactive advertisements across multiple channels of communication networks, i.e., wireless, wired, narrow band, broad band, using a uniform protocol.

Description of the Related Art

Manufacturers or retailers advertise their products, services, goods or the like to potential customers to promote and invite the customer to purchase their products or goods, or to use their services. A retailer may advertise his products himself or hire another to advertise the retailer's products. Traditional methods of advertising include radio, television, direct mail, billboards, newspapers or the like. Such advertisements are static and non-interactive.

Several retailers provide expensive brochures or catalogs to customers in the form of hard copy versions that can be browsed over the counter at the retailer's location. Hard copy versions can be mailed or delivered by a courier service to potential customers in an attempt to entice the customer to purchase products contain therein, or simply advertise products. Some catalogs may contain products of several retailers.

Catalogs can also be in soft copy formats. In particular, the catalogs are not printed on paper, but the description of the products is in a computer readable electronic format. The soft copy catalogs can be delivered to potential customers via an intangible computer readable medium, such as an electronic transmission via an electronic mail (email). They can also be delivered in a tangible computer readable medium, such as a diskette, compact disc (CD), mini-CD or the like.

Many retailers provide soft copy catalogs accessible on-line through the internet. "The internet" may include the worldwide network that is public and other computer networks. A retailer may establish a webpage on the World Wide Web, which includes an interactive catalog that allows customers to browse the catalog and purchase products. The on-line catalog may also contain products of several retailers.

Recently, retailers have advertised their products using complex and diverse advertising, i.e., electronic advertisements. Electronic advertisements may include any advertisement that is communicable and deliverable across wireless or wired networks, or narrow band or broad band. Electronic advertising can be more effective than the traditional methods of advertising, i.e., radio, television, direct mail, billboards, newspapers or the like.

Each electronic advertisement is developed using a different format or program because retailers use various software vendors or individuals to develop their electronic advertisements. Consequently, the formatted electronic advertisements can be deliverable only to compatible devices.

Electronic advertisements can be delivered to wireless devices, such as a potential customer's personal computer via email in a form of an email link or page that points to the website of the retailer. Electronic advertisements can also be delivered to a customer's cellular/mobile phone or personal digital assistant (PDA) in the form of a wireless message. Most often, electronic advertisements are delivered in the form of "banners" in webpages to a user's personal computer or PDA. The same electronic advertisements delivered to the wireless devices, consequently, can not be delivered to wired devices, since the electronic advertisements are formatted or developed for only wireless devices.

Accordingly, propriety standards are available for providing some type or form of electronic advertising. However, there is no standard for communicating or delivering electronic advertisements across various channels of communication networks for various client devices using a uniform platform, e.g., combined hardware and operating system software to run or display the electronic advertisement.

U.S. Patent No. 5,724,521, issued on March 3, 1998 to Dedrick, is directed to a method and apparatus for providing electronic advertisements to end users of computers in a consumer best-fit pricing manner. An index database provides storage space for titles of electronic advertisements, and a user profile database provides storage space for a set of characteristics, which correspond to individual end users. A consumer scale matching process is coupled to a content database and the user profile database, and compares characteristics of the individual end users with a consumer scale associated with a particular advertisement.

U.S. Patent No. 5,948,061, issued on September 7, 1999 to Merriman et al., concerns a method and apparatus for targeting the delivery of advertisements over a network such as the Internet. When a user, using a webbrowser, e.g., Netscape or Microsoft Internet Explorer on a computer, PDA or other Internet capable device, accesses or "visits" a website of an affiliate, banner advertisements or the like are delivered to the user's webbrowser. When the user clicks or "opens" a banner advertisement, statistics are compiled on the user and network. The use of the banner advertisements is tracked to permit targeting of advertisements to the user. Targeted advertisements can then be transmitted or delivered to the user based upon the profiling of the user and network.

WO 99/59283 (De Boor et al.), Integrated Advertisement for Wireless Communication Devices with Rich Content and Direct User Response Mechanism, published on November 18, 1999, relates to the distribution of electronic advertising for wireless communication devices. There is provided a system, method and software product that is fully integrated into user interface features of a wireless communication device. An integrated response mechanism enables users to directly respond to an advertisement with a variety of different actions, which are initiated by the user. The various actions are directly encoded in the advertisements and relieve the user of having to remember information regarding the advertisements, i.e., product, contact information or the like, such that the user can select, for example, softkeys to effect an action in response to the advertisement.

WO 00/02389 (McAllan), Information Access with Targeted Marketing Capability, published on January 13, 2000, is related to a communication architecture and service where subscribers can obtain wireless cellular access to information providers. The communication architecture enables advertisers to market advertisements to individuals fitting specific demographic profiles. The service provided by this architecture permits cellular telephone subscribers to dial into a content server, which provides access to a variety of information not normally available to mobile subscribers. Individually targeted advertising can also be provided to receivers of broadcast information or entertainment content through this architecture.

SUMMARY OF THE INVENTION

Accordingly, there is a desire to develop and deliver interactive advertisements across various channels of communication networks for displaying on various client devices using a uniform platform.

Objects of the present invention are to format or develop the interactive advertisements using a uniform platform, and retrieve information using the formatted interactive advertisements.

Further objects of the present invention are to deliver the interactive advertisements across various channels of communication networks that can be displayed on various client devices, and use the delivered interactive advertisements in different environments.

Accordingly, to achieve the above objects, there is provided a signal structure for sending identifying structuring information across a plurality of communication channels to a plurality of user devices, comprising at least one classification section, the classification section beginning and ending the signal structure. Also included is an identifying structuring section, the identifying structuring section including individual attributes describing the signal structure. Each attribute contains a property name substring, a property parameter substring and a property value substring, and the attributes include at least a name of a product, product code, contact information and security information.

To further achieve the above objects, there is provided an apparatus for distributing interactive advertisements, comprising at least one server including a server interface operative to at least request and deliver the interactive advertisements across a plurality of communication channels, and at least one client device including a client interface operative to provide a user with the capability to receive, store, transfer, exchange or redeem the interactive advertisements across a plurality of communication channels. Further, a developing and processing unit that has a developing interface adapted to be interactively coupled to the client interface and the server interface for transmission and reception of the interactive advertisements across a plurality of communication channels, and a developer operative to create the interactive advertisements and adapted to update and maintain the interactive advertisements is included.

BRIEF DESCRIPTION OF THE DRAWINGS

The above objectives and advantages of the present invention will become more apparent by describing in detail preferred embodiments thereof with reference to the attached drawings in which:

FIG. 1 is an overview diagram showing the various functional blocks of a method and apparatus for developing and distributing interactive advertisements in accordance with the present invention;

FIG. 2 is a schematic illustration of the client device of the method and apparatus for developing and distributing interactive advertisements of FIG. 1;

FIG. 3 is a schematic illustration of the developing and processing unit of the method and apparatus for developing and distributing interactive advertisements of FIG. 1;

FIG. 4 is a schematic illustration of the server of the method and apparatus for developing and distributing interactive advertisements of FIG. 1;

FIG. 5 is a diagram of an embodiment for transferring or exchanging interactive advertisements from one client device to another client device in accordance with the present invention;

FIG. 6 is a diagram of an alternate embodiment for transferring or exchanging interactive advertisements from one client device to another client device in accordance with the present invention;

FIG. 7 is shows a diagram of the signal structure for interactive advertisements in accordance with the present invention; and

FIG. 8 is an illustration of the implementation of the vAds in accordance with the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIGS. 1-4, the system 100 includes one or more client devices 50, one or more servers 30, and a developing and processing unit 70. The client device 50 has a client interface 53, including a processor, and a memory 55. The server 30 has a server interface 33, including a processor, and a database 35. The developing and processing unit 70 has a developing interface 73, including a processor, and a developer 75. The client device 50, the server 30, and the developing and processing unit 70 communicate with each other via a communications network 10.

Traditional types of static information corresponding to that found in traditional advertisements have been combined with multimedia information, such as digital video and audio that are found in electronic advertisements. It will be appreciated that one skilled in the art will recognize the combination as virtual advertisements (vAds). vAds are developed using a standard format and can act as a simple, intuitive system for distributing and exchanging advertisement information in a standard way across multiple devices via both wired and wireless networks.

vAds promoting products are delivered across client devices 50 via wired and wireless networks. vAds can advertise a single product or several products. Products can include services, goods, events, companies, individuals, groups of individuals or the like. vAds can contain embedded information, such as the name of the advertised product, contact information of the advertising retailer, information links to the products/retailer, e-commerce information, customer service information, security features or the like. vAds

are interactive and allows the user to interact with retailer.

FIG. 2 provides a schematic illustration of the client device 50 of the method and apparatus for developing and distributing interactive advertisements of FIG. 1. The client interface 53 of the client device 50 contains interface hardware and software that allows the user to receive and transfer information between the components of the system 100. The client device 50 can be a personal computer, personal digital assistant (PDA), interactive television, cellular or mobile phone, home appliances or the like.

The user, via the client device 50, can receive vAds and order online advertised products by pressing a virtual button on the client device 50. The vAds can also be stored in the memory 55 of the client device 50 to be viewed at a later time. The customer via the client device 50 can transfer or exchange vAds between other compatible client devices 50, or can receive vAds from other client devices 50. There may be one or more client devices 50. For simplicity, only one client device 50 is illustrated in FIG. 1.

Further, the user via the client device 50 can receive vVouchers, as subsequently detailed, and redeem the vVouchers for entertainment. In addition, the user via the client device 50 can download the vVouchers from other client devices 50, exchange or transfer the vVouchers to other client devices 50.

With reference to FIG. 3, the developer interface 73 of the developing and processing unit 70 contains interface hardware and software that allows the developing and processing unit 70 to receive and transfer information between the components of the system 100.

When the server 30 requests a vAd, vVoucher (as subsequently detailed) or the like, the developer 75 of the developing and processing unit 70 can develop and format the vAd that includes information relating to the product and the retailer. Information can include name of the product, contact information, advertisement information, e-commerce information, customer service information, security information of the like. Each vAd or vVoucher is developed using a uniform protocol. The uniform protocol allows the vAds to be delivered across multiple communication networks to be displayed on a

variety of client devices 50. vAds are delivered to client devices 50 via the developing and processing unit 70 as requested by the server 30.

As noted with regard to FIG. 1, while only one server 30 is illustrated, there may be one or more servers 30. With reference to FIG. 4, the server 30 communicates with the client devices 50 and the developing and processing unit 70. The server interface 33 of the server 30 contains interface hardware and software that allows the server to receive and transfer information between the components of the system 100.

The server 30 can be a retailer, a billboard or the like. Retailers 30 request from the developing and processing unit 70 vAds advertising their products. It is advantageous that the developing and processing unit 70 develops the retailer's vAd because the same formatted vAd can be delivered across multiple communication networks to a variety of client devices 50. A new vAd would not be needed if the retailer wanted to update the vAd. The retailer could simply request the developing and processing unit 70 to update the vAd and that updated vAd can be delivered to the client devices 50. This not only saves the retailer money, but also saves the retailer time.

The retailer or server 30 can also request from the developing and processing unit 70 vVouchers (discussed below) to reward or encourage a customer to continue purchasing the retailer's products. The vVouchers can be forwarded to the server 30 and stored in the database 35. The server 30 can then forward the vVouchers to the client devices 50.

Delivery Models

vAds can be delivered across various channels of communication networks and received at various devices. vAds can arrive at a client device 50 as an electronic mail (email) attachment. The email attachment can be a MIME type and displayed on the email reading program or on the webbrowser.

vAds, vVouchers (as subsequently detailed) or the like, or information contained therein can also be transferred, exchanged, forwarded or "beamed" from one client device 50 to another client device 50, which are compatible with each other, as illustrated in FIG 5. For instance, the vAds can be beamed from

a cellular phone to a personal computer, a PDA to an interactive television, one home appliance to another home appliance, etc.

With reference to FIG. 6, vAds can be delivered to a client device 50 by an outdoor interactive billboard 30 that is compatible with the system 100. The outdoor interactive billboard 30 can be implemented with a wireless transceiver, i.e., Bluetooth transceiver, to make the billboard 30 interactive with the client device 50. The billboard 30 can display a retailer's products, retailer's contact information and directions, specific recommendations for food, shopping or the like. The customer, by pressing a button on the client device 50, can download the information from the billboard 30 into the client device 50, and store the vAd or contents of the vAd.

There are several delivery embodiments for the vAds and the few embodiments listed are not meant to limit the present invention to the above embodiments.

Usage Models

Once vAds are delivered to the client device 50, the user has several options. The user can browse the vAd for more information regarding the advertised products, and can immediately purchase the advertised products online via the client device 50. vAds can be developed, as described below, to securely include a user's personal information in order for the customer to purchase the advertised product easily, i.e., one-click purchase. The user information can include the customer's name, billing and shipping addresses, home and work telephone numbers, credit card information or the like.

If a user is interested in a product(s) advertised in a vAd but does not want to purchase the product(s) immediately, the user can add the vAd to a wish list or shopping cart, or store the vAd in the memory 55 of the client device 50 and access the vAd at a later time.

The user via the client device 50 using the vAd does not only have to purchase products, the user can register for an event, subscribe to a magazine, registering (registration) a product online, or the like.

vAds can be printed and used as virtual coupons or vouchers

(vVouchers) that can be redeemed for products. vVouchers are compact wireless object exchange formats developed by Kent Ridge Digital Labs. A format for the vVoucher can be:

| Begin VVOUCHER

| ISSUE DATE:ddmmyyyyhhmmss {Date Month Year Hour Minute Second}

| EXPIRY DATE:ddmmyyyyhhmmss

| USE:SINGLE or Multiple {Single for one time use and multiple for multi use vouchers}

| VALUE: NUMBER{Float} //Value of the voucher

| CURRENCY: USD {Standard 3 letter code}

| MERCHANTS: NTUC:COLDSTORAGE {Merchants where the voucher can be redeemed}

| SIGNATURE:HEX DIGIT { Signature generated from all the above field}

| END VVOUCHER

Retailers can beam vVouchers, worth a certain amount, to a customer at the client device 50. The customer can collect and save a single or several vVouchers in the client device 50, and redeem them later by beaming the vVouchers back to the retailer for a requested product. The customer also may be authorized to transfer the vVoucher to another client device 50 of that customer or another customer. vVouchers may also be downloaded from one client device 50 to another client device 50, e.g., a wireless enabled interactive television while watching a program, commercial or the like.

Further, vAds can be developed, as described below, to collect demographic information about a user for target advertising. Of course, demographic information can be collected only with permission of the user. For instance, if a user receives a number of vAds via the client device 50 and only requests information about two of the vAds out of the number of vAds, that information can be used to send the user vAds relating to the vAds of interest. Demographic information can also be obtained if a user purchases an advertised product in a vAd, receives or downloads a vAd from another client

device 50 or the like.

Demographic or customer contact information can also be used for customer service relations. A retailer may be interested in the satisfactory of a product in order to improve the product, market the product differently or the like.

There are several usage embodiments for the vAds and the few embodiments listed are not meant to limit the present invention to the above embodiments.

Formatting/protocol

When vAds are formatted or developed using the below-described protocol, the vAds become interactive advertisements. For example, when a user via the client device 50 wants to purchase online products advertised in a vAd, the vAd can be formatted to include a customer's personal information. Thus, when the customer is ready to purchase the product, a one-click motion is only required to purchase the item.

Further, when a product is purchased via the client device 50, the vAd can be formatted to include information regarding the delivery/shipping status of the ordered product. The developer 70 can update the vAd after the server 30 informs the developer 70 that the product has been shipped. The customer via the client device 50 can check the delivery status of the requested reward, service or good using the vAd.

vAds can be realized using the protocol of the present invention. The protocol for vAds is suitable as an interchange format between applications or systems. The protocol is defined independent of the particular method used to transport it. The transport for the exchange can be a file system, point-to-point asynchronous communication, wired-network transport, some form of wireless transport or the like.

With reference to FIG. 7, a vAd is a data stream 400 consisting of one or more vAd objects 47. It will be appreciated that one skilled in the art will recognized a vAd object 47 as a classification section. The individual vAd definitions can be identified and parsed within the data stream 400. The vAd

data stream 400 can exist as a persistent form in a file system, document management system, network connection between two network endpoints, or in any other digital transport that has an abstraction of a stream of bytes.

A vAd Writer creates vAd data streams 400 and a vAd Reader interprets vAd data streams 400. The vAd Reader and vAd Writer can be implemented as a single application or as separate applications.

The vAd protocol provides a clear-text encoding that is intended to be based on the syntax used by the MIME specification.

The encoding of the protocol can be used in environments which are constrained to 7-bit transfer encoding, short line lengths, and low bandwidth. In addition, the encoding is simple in order to facilitate the implementation of reader and writer applications on small platforms, such as personal digital assistants, cellular telephones or the like.

vAd Features

Table 1 shows the major groups of vAd properties 45. The list is illustrative and the vAd properties 45 can be designed around a specific retailer or product. The first column contains the names of the vAd property groups, the second column lists the properties under the group, and the last column describes if the property groups are mandatory or optional. Mandatory properties are those which should be included in a vAd, and optional properties may or may not be included in a vAd. For illustrative purposes, the data stream 400 in FIG. 7 contains both mandatory and optional vAd properties 45. It will be appreciated that one skilled in the art will recognize a mandatory property as an identifying structuring section, and an optional property as a demographics structuring section.

Property/ Property Group	Description	Mandatory/ Optional
Name	Name of the product which is being advertised.	M
Code	A unique identification of the vAd which is used for e-commerce transaction.	M
Contact Info	Contact information of the retailer who sells the product, contact information of the company who manufacturers, etc. The following are the property items: URL, phone number, fax, email, address, and map.	M
Ad Info	This group contains properties that represent or provide links to the textual and multimedia content of an actual advertisement as seen in a newspaper, television, on the web, in an outdoor electronic display or the like. The following are the property items: text information, URL of text information if long, URL of audio, video and image files, and URL of the Java script, WML script or Flash program to download and run on the user device as part of the advertisement.	O
E-Commerce Info	This group contains properties that represent or provide links to information to carry out e-commerce transactions: Product/Service/code, Quotation number, Quotation time window, Price, Shipping time, Purchase order number (filled up after online purchase is made), and Status of purchase.	O
Customer Service Info	This group contains properties that represent or provide links to information that the vendor can use to serve the customer better: Source or place from where the vAd was received/downloaded, Time when the vAd was received/downloaded, and Time spent by the user in browsing the advertisement (an indication as to his interest in the item advertised).	O
Security Features	These property types are concerned with the security of the information in the vAd object.	M

Table 1: vAd Salient Properties

1. Encoding Characteristics

vAd Object

An individual vAd object 47 is identified within a data stream 400 by the appearance of the Begin vAd Delimiter:

BEGIN:VAD

The sentinel string must appear as the first characters in the data stream 400 or the first characters on a line.

The vAd object 47 is terminated with either the logical end of the data stream 400 or the appearance of the End vAd Delimiter as the first character on a line (FIG. 7):

END:VAD

Property

A property 40 is the definition of an individual attribute describing the vAd. A property 40 takes the following form:

PropertyName [';' PropertyParameters] ':' PropertyValue

as shown in the following example:

TEL;HOME:+1-919-555-1234.

A property 40 takes the form of one or more lines of text. The protocol of property names 13 and property parameters 15 is case insensitive. The property name 13 can be one of a set of pre-defined strings. The property name 13, along with an optional grouping label, must appear as the first characters on a line. In the previous example, "TEL" is the name of the "Telephone Number" property. Property values 17 are specified as strings. In the previous example, "+1-919-555-1234" is the formatted value for the "Telephone Number" property.

A property value 17 can be further qualified with a property parameter expression 15. Property parameter expressions 15 are delimited from the property name with a semi-colon character (ASCII 59). A semi-colon in a property parameter value 5 must be escaped with a backslash character (ASCII

92). The property parameter expressions 15 are specified as either a name=value or a value string. The value string can be specified alone in those cases where the value is unambiguous. For example a complete property parameter protocol might be:

NOTE;ENCODING=QUOTED-PRINTABLE:Remember to order Girl=Scout cookies from Stacey today! //Full property parameter expression

A valid short version of the same property parameter protocol might be:

NOTE;QUOTED-PRINTABLE:Remember to order Girl=Scout cookies from Stacey today! //Full property parameter expression

Delimiters

Individual lines within the vAd data stream 400 are delimited by a delimiter 43, i.e., the (RFC 822) line break, which is a CRLF sequence (ASCII decimal 13, followed by ASCII decimal 10). Long lines of text can be split into a multiple-line representation using the RFC 822 "folding" technique. That is, wherever there may be linear white space (NOT simply LWSP-chars), a CRLF immediately followed by at least one LWSP-char may instead be inserted. For example the line:

NOTE:This is a very long description that exists on a long line.

can be represented as:

NOTE:This is a very long description that exists on a long line.

The process of moving from this folded multiple-line representation of a property definition to its single line representation is called "unfolding". Unfolding is accomplished by regarding CRLF immediately followed by a LWSP-char as equivalent to the LWSP-char.

It is recommended that folding be limited to higher-level syntactic breaks in structured components of the property definition.

A formatted text line break in a property value 17 must also be represented by a (RFC 822) line break, which is a CRLF sequence. However, since the CRLF sequence is used to delimit a line, property values 17 with formatted line breaks (i.e., multiple lines) must be encoded using an alternate

encoding of either Quoted-Printable or Base64, as defined in RFC 1521.

For example, in the Quoted-Printable encoding the multiple lines of formatted text are separated with a Quoted-Printable CRLF sequence of "=0D" followed by "=0A" followed by a Quoted-Printable softline break sequence of "=". Quoted-Printable lines of text must also be limited to less than 76 characters. The 76 characters do not include the CRLF (RFC 822) line break sequence. For example a multiple line LABEL property value of:

123 Winding Way
Any Town, CA 12345
USA

would be represented in a Quoted-Printable encoding as:

LABEL;ENCODING=QUOTED-PRINTABLE:123 Winding Way=0D=0A=
Any Town, CA 12345=0D=0A=USA

Property parameter substrings are delimited by a field delimiter, specified by the semi-colon character (ASCII decimal 59). A semi-colon in a property parameter value must be escaped with a Backslash character (ASCII 92).

Compound property values are property values 17 that also make use of the semi-colon, field delimiter 43 to separate positional components of the value. For example, the Name property 13 is made up of the Family Name, Given Name, etc. components. A semi-colon in a component of a compound property value must be escaped with a Backslash character (ASCII 92).

Grouping

There are two forms of grouping or collections supported within the vAd. A collection of vAd objects 47 can be grouped and a collection of properties 45 within an individual vAd can be grouped.

vAd Grouping

The vAd data stream 400 can consist of multiple vAd objects 47. The vAd data stream 400 can, sequentially, contain one or more vAd objects 47. In addition, the vAd data stream 400 can contain a property 45 whose value is a nested vAd. In both of these cases, each vAd object 47 will be delimited by the

vAd Delimiters 43. The vAd Reader conforming to this protocol must be able to parse and process any of these combinations of vAd Groupings. The support for vAd Grouping is optional for a vAd Writer conforming to this protocol.

Property Grouping

A Property Grouping is the definition of a method for specifying a collection of related properties within a vAd object 47. There is no requirement on a vAd reader that it preserves the property group name. However, the vAd reader is required to preserve the grouping of the properties 45.

The Property Grouping is identified by a character string prefix to the property name; separated by the Period character (ASCII decimal 46).

The grouping of a comment property with a telephone property is shown in the following example:

A.TEL;HOME:+1-213-555-1234

A.NOTE:This is my vacation home.

The vAd Reader conforming to this protocol must be able to parse and process the property grouping. The support for Property Grouping is optional for a vAd Writer conforming to this protocol.

Encoding

The default encoding for the vAd object 47 is 7-Bit. The default encoding can be overridden for an individual property value by using the "ENCODING" property parameter. This parameter value 17 can be either "BASE64," "QUOTED-PRINTABLE," or "8BIT." This parameter may be used on any property.

Character Set

The default character set is ASCII. The default character set can be overridden for an individual property value 17 by using the "CHARSET" property parameter 15. This property parameter 15 may be used on any property. However, the use of this parameter on some properties may not make sense.

Any character set registered with the Internet Assigned Numbers

Authority (IANA) can be specified by this property parameter 15. For example, ISO 8859-8 or the Latin/Hebrew character set is specified by:

ADR;CHARSET=ISO-8859-8:...

Some transports (e.g., MIME based electronic mail) may also provide a character set property at the transport wrapper level. This property can be used in these cases for transporting a vAd data stream 400 that has been defined using a default character set other than ASCII (e.g., UTF-8).

Value Location

The default location of the property value is inline with the property. However, for some properties, such as those that specify multimedia values, it is efficient to organize the property value as a separate entity (e.g., a file out on the network). The property parameter "VALUE" can be specified to override the "INLINE" location of the property value 5. In the case of the vAd being transported within a MIME email message, the property value 5 can be specified as being located in a separate MIME entity with the "Content-ID" value, or "CID" for short. In this case, the property value 5 is the Content-ID for the MIME entity containing the property value 5.

In addition, the property value 5 can be specified as being located out on the network within some Internet resource with the "URL" value. In this case, the property value 5 is the Uniform Resource Locator for the Internet resource containing the property value 5. This property parameter 15 may be used on any property. However, the use of this parameter 15 on some properties may not make sense; for example the Version, Time Zone, Comment, Unique Identifier properties. The following specifies a value not located inline with the vAd but out in the Internet:

PHOTO;VALUE=URL;TYPE=GIF:http://www.abc.com/dir_photos/my_photo.gif

SOUND;VALUE=CONTENT-ID:<jsmith.part3.960817T083000.xyzMail@host1.com

Binary Values

The vAd format supports inclusion of binary information, such as computer graphic images, digital audio, or video graphic images. The binary

information may either be referenced with a Uniform Reference Locator (URL) or placed inline in the vAd as the value of a property. Inline binary information is included as a property value after being encoded into clear-text with a Base 64 (default) or Quoted-Printable encoding.

2. vAd Properties

Identification Properties

These property types 45 are concerned with information associated with the identification and naming of the individual or resource associated with the vAd object.

Name

This property specifies the formatted name string associated with the vAd object. This is the way that the name of the product/service /event/organization is to be displayed. Examples are "American Express", "Sony Walkman" or "Sistic Music Festival". This property is defined to encapsulate the individual components of an object's name. The property value consists of the components of the name specified as positional fields separated by the Field Delimiter character ';' (ASCII decimal 59). The property value is a concatenation of the Product Name (first field), Product Generic Name (second field), Company Name (third field) and Dealer Name (fourth field), in that order. The given name may or may not have all these components. It is mandatory to have at-least one field.

This property is identified by the property name N. The following is an example of the Formatted Name property:

Formal Definition

N : [Product Name: Product Generic Name ;Company Name ;Dealer Name]

Example:

N: ;;American Express //no product name, generic name and local dealer

N: ;Music Festival;Sistic //no product name

N: model viao;notebook;sony;local dealer //all fields present

Support for this property is mandatory for vAd Writers conforming to this protocol.

Product Code

This property specifies code for product identification. This could be dealer specific code or generic code. Dealer specific code refers to code used by a particular retailer or chain to identify the product. Generic code refers to an international code like ISBN, ISSN, CIP or ISMN to uniquely identify the product.

This property is identified by property name CODE. This property value is a string in ASCII format.

This property is provided with type. Type specifies the type of code, whether it is dealer dependant or international type code.

For example, TYPE=NTUC specifies the code is a dealer dependant NTUC code. TYPE=ISBN means that the code global ISBN type code.

Formal Definition

CODE;[Type=type]:value

Example:

CODE;TYPE=ISBN:0-684-84914-3

The code is a mandatory property for the vAd. Both vAd reader and writer should support this property.

Contact Information

The contact information provides information on vendor. This includes various sub-properties to identify the vendor. This includes URL, fax, telephone number, email address and map.

Vendor URL

URL has only a value field associated with it. This is a mandatory field. The property name associated with this is VENURL.

Formal Definition

VENURL;[VALUE=val]:value

Example:

VENURL;VALUE=URL:http://www.krdl.org.sg

Vendor Telephone Number (Includes Fax)

This property specifies the canonical number string for a telephone number for telephony communication with the vAd object. The value of this property is specified in a canonical form in order to specify an unambiguous representation of the globally unique telephony endpoint. This property is based on the X.520 Telephone Number attribute.

The canonical form cannot be dialed without first being transformed by a dialing algorithm. The dialing algorithm combines the canonical number string with knowledge of the local dialing procedures, in effect at the time of call placement to produce actual dialing instructions. The actual dialing algorithm is outside the scope of this protocol.

Two important canonical forms allowed by this protocol are:

Apple Computer's Representation of a Canonical Static DeviceID in The Telephony Suite, version 1.0, and

Microsoft TAPI in the Microsoft Windows 3.1 Telephony Programmer's Guide, version 1.0.

Software, which creates this property, can store a string in these allowed formats. Dialing software should be prepared to parse numbers from either of the supported formats; as neither format is considered to be technically costly to support.

This property is identified by the property name VENTEL. An example of this property follows:

VENTEL;PREF;WORK;MSG;FAX:+1-800-555-1234

Support for this property is optional for vAd Writers conforming to this protocol.

Formal Definition

VENTEL;[TYPE=type];value

Telephone Type

This property parameter specifies the sub-type of telephone that is associated with the telephone number (e.g., Home, Work, Cellular, Facsimile, Video, Modem, Message Service, or Preferred). One or more sub-type values can be specified for a given telephone number.

The property parameter can have one or more values as illustrated in Table 2:

Description	Property Parameter Value
TYPE=	
Indicates preferred number	PREF
Indicates a work number	WORK
Indicates a home number	HOME
Indicates a voice number (Default)	VOICE
Indicates a facsimile number	FAX
Indicates a messaging service on the number	MSG
Indicates a cellular number	CELL
Indicates a pager number	PAGER
Indicates a bulletin board service number	BBS
Indicates a MODEM number	MODEM
Indicates a car-phone number	CAR
Indicates an ISDN number	ISDN
Indicates a video-phone number	VIDEO

Table 2: Telephone Property Parameter Values

The default property parameter is overridden to some other set of values by specifying one or more alternate values. For example, the default of a VOICE telephone number can be reset to a WORK and HOME, VOICE and FAX telephone number in the following example:

VENTEL;WORK;HOME;VOICE;FAX:+1-800-555-1234

Electronic Mail

This property specifies the address for electronic mail communication with the vCard object. The address is in the form of a specific addressing type. For example, the Internet mail address for John Public might be "John.Public@abc.com" or the CompuServe Information Service address might be "71234,5678". This property is identified by the property name VENEMAIL.

Example:

VENEMAIL;INTERNET:john.public@abc.com

Support for this property is optional for vAd Writers conforming to this protocol.

Formal Definition

VENEMAIL;[TYPE=type];value

Electronic Mail Type

This property parameter specifies the type of electronic mail address, and are illustrated in Table 3:

Description	Property Parameter Value
TYPE=	
Indicates America On-Line	AOL
Indicates AppleLink	AppleLink
Indicates AT&T Mail	ATTMail
Indicates CompuServe Information Service	CIS
Indicates eWorld	eWorld
Indicates Internet SMTP (default)	INTERNET
Indicates IBM Mail	IBMMail
Indicates MCI Mail	MCIMail
Indicates PowerShare	POWERSHARE
Indicates Prodigy information service	PRODIGY
Indicates Telex number	TLX
Indicates X.400 service	X400

Table 3: Email Property Parameter Values

Mailer

This property parameter specifies the type of electronic mail software that is in use by the individual associated with the vAd object. This information may provide assistance to a correspondent regarding the type of data representation, which can be used, and how they may be packaged. This property parameter is based on currently accepted practices within the Internet MIME community with the "X-Mailer" header field.

This property is identified by the property name MAILER. Support for this property is optional for vAd Writers conforming to this protocol. An example of this property follows:

MAILER:ccMail 2.2

Vendor Map

vAd can be used to give directions to users on how to reach physical store location or get to a place where an event is held. Map can consist of text or a single image. Map can be a combination of a URL and text.

The property field MAP identifies this property. This is an optional field.

Support for this property is optional for vAd writers.

Formal Definition

MAP;[VALUE=val];value

Example:

MAP;VALUE=URL:file:///jqpublic.gif

The following example is the syntax for including an inline GIF image file, using the Base 64 encoding:

MAP;ENCODING=BASE64;TYPE=GIF:
R0lGODdhfgA4AOYAAAAAAK+vr62trVIxa6WlpZ+fnzEpCEpzlAha/0Kc74+PjyG
M

Another example is:

MAP;VALUE=URL:http:///vendor.com: Go to Clementi Bus Station Take 96, alight at Yusuf Ishak House

Map Format Type

This property parameter is provided to specify the graphics format for the map property value. The property parameter values are illustrated in Table 4:

Description	Property Parameter Value
TYPE=	
Indicates Graphics Interchange Format	GIF
Indicates ISO Computer Graphics Metafile	CGM
Indicates MS Windows Metafile	WMF
Indicates MS Windows Bitmap	BMP
Indicates IBM PM Metafile	MET
Indicates IBM PM Bitmap	PMB
Indicates MS Windows DIB	DIB
Indicates an Apple Picture format	PICT
Indicates a Tagged Image File Format	TIFF
Indicates Adobe PostScript format	PS
Indicates Adobe Page Description Format	PDF
Indicates ISO JPEG format	JPEG
Indicates ISO MPEG format	MPEG
Indicates ISO MPEG version 2 format	MPEG2
Indicates Intel AVI format	AVI
Indicates Apple QuickTime format	QTIME

Table 4: Map Property Parameter Values

Advertisement Information

The main purpose of this group of property is to give more information about the item advertised. It can also be used for attracting more visitors to the web sites. The property items in this category includes advertisement text information, URL of the web page containing text information, URL of the link to multimedia information like audio, video and image files, and finally URL of the Java script, WML script, Flash program. The scripts and flash programs can be downloaded and run in the user device as part of the advertisement.

Advertisement Text URL

This is used for giving more information about the item advertised using text. This is useful when you are using a device with a small screen size like a mobile phone or when you are using a low band width connection. The value could be inline for a compact advertisement.

The property is identified by the property name ADTURL.

Example:

ADTINFO.ADTURL;VALUE=URL:"http:///www.microsoft.com"

ADINFO.ADTURL;VALUE=INLINE: "This is a compact advertisement message"

This property is optional.

Formal Definition

ADTURL;[Value=val]:val

Advertisement Multimedia URL

This is browsing more information over a high bandwidth connection. It can be used over DSL, 3G lines on wired wireless world.

This property is identified by the property name ADVURL for video/image based url. The property name for audio based URL is ADSURL

Tables 5 and 6 specify the property parameter values.

Formal Definitions

ADTINFO;[VALUE=val];[TYPE=type];val

Example of Video URL:

ADTINFO.ADVURL;VALUE=URL;TYPE=MPEG:"http:///www.microsoft.com/video.html"

Example of Audio URL:

ADTINFO.ADSURL;VALUE=URL;TYPE=WAVE:http:///www.microsoft.com/audio.html

Video Property Type

Description	Property Parameter Value
TYPE=	
Indicates Graphics Interchange Format	GIF
Indicates ISO Computer Graphics Metafile	CGM
Indicates MS Windows Metafile	WMF
Indicates MS Windows Bitmap	BMP
Indicates IBM PM Metafile	MET
Indicates IBM PM Bitmap	PMB
Indicates MS Windows DIB	DIB
Indicates an Apple Picture format	PICT
Indicates a Tagged Image File Format	TIFF
Indicates Adobe PostScript format	PS
Indicates Adobe Page Description Format	PDF
Indicates ISO JPEG format	JPEG
Indicates ISO MPEG format	MPEG
Indicates ISO MPEG version 2 format	MPEG2
Indicates Intel AVI format	AVI
Indicates Apple QuickTime format	QTIME

Table 5: Video Property Parameter Values

Audio Type URL

Description	Property Parameter Value
TYPE=	
Indicates Wave format	WAVE
Indicates MIME basic audio type	PCM
Indicates AIFF format	AIFF

Table 6: Audio Property Parameter Values

E-Commerce Information

This group contains list of information to convert interest of a user into a possible transaction. This feature is a great time saver for a mobile user who wants to download product information into his WAP phone. This feature can save time for them when they visit a web site to buy a product or service by filling necessary fields for them. There can be more than one product if the user has more than one item on the shopping cart.

Product/ Service Unit Code

This is represented by the property name UCODE. This represents the actual unit number of the product purchased. This number is useful for

checking the status of the product purchased and other customer service operations.

Formal Definition

UCODE:value

Example:

UCODE:P123456

Quotation number

This can serve as a formal quotation for a product. The quotation number is in ASCII format having both text and numerals. The property string for this is QUOTE.

The final value is the concatenation of date, time and time-zone of the time window. The format of all these parameters is Date From, Date To, Time From, Time To and time zone. The format of all these parameters are described below:

One or more fields can be dropped as per requirement.

This is an optional property.

Date & Time

Date From and Date To

This specifies the time window for which purchase information or quotation information is valid. This information is accompanied by the time zone information. This is of the format ddmmyyyy. This has to be used in conjunction with quotation time window and time zone information.

Time From and Time To

This property specifies information related to the standard time zone of the vAd object. The time zone is a string as specified in a manner consistent with ISO 8601. It is an offset from Coordinated Universal Time (UTC). An ISO 8601 UTC offset, in basic format, is specified as a positive or negative difference in units of hours and minutes (e.g., +hhmm). If minutes are zero, then they may be omitted and the format would be specified in units of hours

(e.g., +hh). The time is specified as a 24-hour clock. Hour values are from 00 to 24, and minute values are from 00 through 59. Hour and minute values are 2-digits with high-order zeroes required to maintain digit count. The extended format for ISO 8601 makes use of a colon (i.e., ":") character as a separator of the hour and minute substrings.

Time Zone

This property is specified in a manner consistent with ISO 8601. The property value is a signed numeric indicating the number of hours and possibly minutes from UTC. Time zones east of UTC are positive numbers. Time zones west of UTC are negative numbers. Support for this property is optional for vAd Writers conforming to this protocol. An example of the Eastern Standard Time (EST) zone value for this property follows using the basic format:

Formal Definition

QUOTE:[DateFrom;DateTo;TimeFrom;TimeTo;TimeZone]

Example:

QUOTE: 12102000;13102000 //has only from and to date

QUOTE: 12102000;13102000;211000;100510;+8.00 //Has all from to date, time begin, time end and time zone

Price

Price has the following properties: unit price, quantity, discount and total price. These fields are self-explanatory.

The price is a concatenation of unit Price, quantity, discount and total price in the same order. This can have one or more fields missing.

This property is optional. This property is represented by the field PRICE.

Unit Price

This could contain regular ASCII as well as special characters like $ and other currency signs.

Quantity

Quantity is a decimal field.

Discount

The format is same as that of Unit Price.

Total Price

The format for total price is same as that of unit price.

Formal Definition

PRICE ; [Unit Price; Quantity;Discount;Total Price]

Example:

PRICE;$400;3;$100;$1100

Shipping Information

The shipping information has 2 properties, which are shipping time and shipping address.

Shipping Address

This property specifies the addressing for physical delivery to the person/object associated with the vAd. The property is intended to include the information necessary to create a formatted delivery address. Typical information includes the name, street address, possibly a post office or mail drop, city, state or province, zip or postal code. n international delivery would also include the country name.

This property is based on the semantics of the X.520 Postal Address attribute. This protocol has added semantics to those defined by the X.500 Series standard for differentiating Home, Work, Parcel, Postal, Domestic, and International delivery label types.

This property is identified by the property name SHIPAD. This property specifies the formatted delivery address label for the vAd object. An example of a domestic delivery follows:

SHIPAD;DOM;POSTAL;ENCODING=QUOTED-PRINTABLE:P. O. Box 456=0D=0A=

123 Main Street=0D=0A=

Any Town, CA 91921-1234

An example of an international delivery follows:

SHIPAD;INTL;PARCEL,ENCODING=QUOTED-PRINTABLE:Suite 101=0D=0A=

123 Main Street=0D=0A=Any Town, CA 91921-1234=0D=0A=U.S.A.

Support for this property is optional for vAd Writers conforming to this protocol. A vAd Reader supporting this property and conforming to this protocol should support a minimum of four lines of text for this property.

Formal Definition

SHIPAD;[Type=type];value

Address Type

This property parameter specifies the sub-types of physical delivery that is associated with the delivery address. For example, the address may need to be differentiated for Home, Work, Parcel, Postal, Domestic, and International physical delivery. One or more sub-types can be specified for a given delivery address.

The property parameter can have the following values as shown in Table 7:

Description	Property Parameter Value
TYPE=	
Indicates a domestic address	DOM
Indicates an international address (Default)	INTL
Indicates a postal delivery address (Default)	POSTAL
Indicates a parcel delivery address (Default)	PARCEL
Indicates a home delivery address	HOME
Indicates a work delivery address (Default)	WORK

Table 7: Address Property Parameter Values

The default property parameter is overridden to some other set of values by specifying one or more alternate values. For example, the default of a delivery for INTL, WORK, POSTAL and PARCEL can be reset to DOM and HOME in the following example:

ADDRESS;DOM;HOME,ENCODING=QUOTED-PRINTABLE:Suite 101=0D=0A=

123 Main Street=0D=0A=

Any Town, CA 91921-1234

Shipping Time

Indicates the average time taken to deliver the goods. This property is a simple ASCII text. The property field for this is SHIPPINGTIME.

Formal Definition

SHIPPINGTIME: ASCII string

Example:

SHIPPINGTIME:2-3Weeks

Purchase Order Number

This is a vendor specific purchase order number to track the purchase. This has only ASCII text. The property field is PURCHASENO.

Formal Definition

PURCHASENO:String

Example:

PURCHASENO:#123456

Status of the Purchase

This property helps to find the status of the purchase. The status is INLINE to specify the text message which indicates status; or the URL of the web page to browse to find out the status of the purchase. The property field is STATUS

For a text based status, an example is:

STATUS:TYPE=INLINE;SHIPPED

For a url based status, an example is:

STATUS:TYPE=URL;http:///www.amazon.com/ram67532@#*(*(/book.htm

Status Type

The type can have 2 values, INLINE and url to denote the kind of status data.

Formal Definition

STATUS;[Type=type];value

Customer Service Information

This consists of some information automatically generated so that the marketers and retailers can serve the customer better. This usually consists of non-personnel information.

This property could be used to provide location based, time specific, up to date information to end-users.

Source or Location information

This property specifies the geographical location where the vAd object was downloaded or received. The property is specifies in longitude and latitude. The latitude represents the location north and south of the equator as a positive or negative number, respectively. The longitude represents the location east and west of the prime meridian as a positive or negative number, respectively.

Formal Definition

GEO:lat,long

This property is identified by the property name GEO. An example of this property follows:

GEO:37.24,-17.87

Support for this property is optional for vAd Writers conforming to this protocol.

Time of Download

This indicates the time when the advertisement was downloaded. This can be used for statistics to measure the time taken from expression of interest to actual purchase.

For the field TOD, the formatting rule is same as the time variable described above.

The format of this is HHMMSS. The format HH denoted hours in 24 hour format. Minutes MM can take values from 0 to 59. Seconds SS can take values from 0 to 59. If any value is not significant it can be discarded, like if "mm" is 0, it can be discarded.

Formal Definition

TOD:hhmmss

Example:

TOD:231362

TOD:10

Degree of Interest

This indicates an empirical measure of how much interest a user has on product or service. Amount of time spent on browsing a product can be used as a first cut measure. The value can range from 0 to 100.

This is a decimal field. The field name is DOI.

Formal Definition

DOI:value

Example:

DOI:50

Implementation/Architecture

vAds can be implemented for wired networks using the eXtensible Markup Language (XML). However, for vAds to be used in wireless devices, such as Infrared or Bluetooth enabled devices, the vAds can be implemented

on top of an OBEX-based layer.

Referring to FIG. 8, the vAd 900 can be implemented on top of a session-layer protocol, such as an OBEX-based layer 9, in an advertisement system 90, i.e., Internet. OBEX was originally developed by the Infrared Data Association (IrDA) as IrOBEX. Its purpose is to support the exchange of objects in a simple and spontaneous manner. For example, the OBEX protocol 9 defines a folder-listing object, which is used to browse the contents of folders, for example, on a client device 50. OBEX provides the same basic functionality as the HyperText Transfer Protocol (HTTP), but in a much lighter fashion. Similar to HTTP, OBEX is based on the client-server model and is independent of the actual transport mechanism.

Having described the invention in detail and by reference to the drawings, it will be apparent that modification and variations are possible without departing from the scope of the invention. Therefore, it is intended that the invention not be limited by the precise structure shown and described, but rather the full scope of the invention as defined in the following claims.

What is claimed is:

1. A signal structure for sending identifying structuring information across a plurality of communication channels to a plurality of user devices, comprising:

at least one classification section, said classification section beginning and ending said signal structure; and

an identifying structuring section, said identifying structuring section including individual attributes describing said signal structure,

wherein each attribute contains a property name substring, a property parameter substring and a property value substring, and

said attributes include at least a name of a product, product code, contact information and security information.

2. The signal structure according to claim 1, further comprising a demographics structuring section.

3. The signal structure according to claim 2, wherein said demographics structuring section includes advertisement information.

4. The signal structure according to claim 3, wherein said advertisement information is a link to at least one of a URL of textual information, or a URL of audio, video and image files.

5. The signal structure according to claim 2, wherein said demographics structuring section includes e-commerce information.

6. The signal structure according to claim 5, wherein said e-commerce information is a link to at least one of a product code, quotation number, quotation time window, price, shipping time, purchase order number, or status of purchase.

7. The signal structure according to claim 2, wherein said demographics structuring section includes customer service information.

8. The signal structure according to claim 7, wherein said customer service information includes a link to at least one of a source from where said signal structure was received, time when said signal structure was received, or time spent by said user device processing said signal structure.

9. The signal structure according to claim 1, wherein said interactive advertisements are implemented using an XML transmission for wired transmissions.

10. The signal structure according to claim 1, wherein said interactive advertisements are implemented on top of a session layer protocol for wireless transmissions.

11. The signal structure according to claim 10, wherein said session layer is OBEX.

12. The signal structure according to claim 1, wherein said signal structure is a persistent form in at least one of a file system, document management system, network connection between two network endpoints, or any digital transport that has an abstraction of a stream of bytes.

13. The signal structure according to claim 1, wherein a vAd Writer creates said signal structure, and a vAd Reader interprets said signal structure.

14. The signal structure according to claim 13, wherein said vAd Writer and vAd Reader is implemented as a single application.

15. The signal structure according to claim 13, wherein said vAd Writer and vAd Reader is implemented as separate applications.

16. The signal structure according to claim 1, wherein individual lines of text within said signal structure are delimited by a delimiter.

17. The signal structure according to claim 16, wherein a long line of text is partitioned into multiple lines using a folding technique.

18. The signal structure according to claim 1, wherein a plurality of said classification sections are grouped.

19. The signal structure according to claim 1, wherein a plurality of said identifying structuring sections are grouped.

20. The signal structure according to claim 1, wherein a default encoding for said classification section is 7-bits.

21. The signal structure according to claim 1, wherein a default character set for said classification section and said identifying structuring section is ASCII.

22. The signal structure according to claim 1, wherein said classification section or said identifying structuring section contains binary information.

23. An apparatus for distributing interactive advertisements, comprising:

at least one server including a server interface operative to at least request and deliver said interactive advertisements across a plurality of communication channels;

at least one client device including a client interface operative to provide a user with the capability to receive, store, transfer, exchange or redeem said interactive advertisements across a plurality of communication channels; and

a developing and processing unit comprising a developing interface adapted to be interactively coupled to said client interface and said server interface for transmission and reception of said interactive advertisements across a plurality of communication channels, and a developer operative to create said interactive advertisements and adapted to update and maintain said interactive advertisements,

wherein said interactive advertisements are created using a uniform protocol that can be delivered across a plurality of communication channels to a variety of types of said client device.

24. The apparatus of claim 23, wherein said client device is operative to browse information about the received interactive advertisement.

25. The apparatus of claim 23, wherein said client device is operative to print said interactive advertisement.

26. The apparatus of claim 23, wherein said client device is operative to authenticate said interactive advertisement.

27. The apparatus of claim 23, wherein said client device is operative to purchase a product advertised in said interactive advertisement.

28. The apparatus of claim 23, wherein said client device is at least one of a personal computer, personal digital assistant, interactive television, cellular or mobile phone or home appliances.

29. The apparatus of claim 23, wherein said server is an interactive billboard.

30. The apparatus of claim 23, wherein said server is a retailer.

31. The apparatus of claim 23, wherein said interactive advertisement

is a voucher.

32. The apparatus of claim 23, wherein said interactive advertisement is an email attachment.

33. The apparatus of claim 23, wherein said interactive advertisements are delivered to one client device from another client device.

34. The apparatus according to claim 23, wherein said interactive advertisement includes multimedia information.

35. The apparatus according to claim 34, wherein said multimedia information is at least digital video or audio video.

36. The apparatus according to claim 23, wherein said interactive advertisement includes contact information.

37. The apparatus according to claim 36, wherein said contact information is at least a phone number, fax number, e-mail address, business or home address, map or URL.

38. The apparatus according to claim 23, wherein said interactive advertisement includes a name of what is being advertised.

39. The apparatus according to claim 38, wherein said name is at least a product, service, event, organization or individual.

40. The apparatus according to claim 23, wherein said interactive advertisement includes a unique identification code used for e-commerce transaction.

41. The apparatus according to claim 23, wherein said interactive advertisement includes links to at least textual content or multimedia content.

42. The apparatus according to claim 23, wherein said interactive

advertisement includes links to information to carry out an e-commerce transaction.

43. The apparatus according to claim 42, wherein said e-commerce transaction includes at least a product/service code, quotation number, quotation time window, price, shipping time, purchase order number or status of purchase.

44. The apparatus according to claim 23, wherein said interactive advertisements are implemented using an XML transmission for wired transmissions.

45. The apparatus according to claim 23, wherein said interactive advertisements are implemented on top of a session layer protocol for wireless transmissions.

46. The apparatus according to claim 45, wherein said session layer is OBEX.

47. The apparatus according to claim 29, wherein said server interface of said billboard is a Bluetooth transceiver.