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(54) SYSTEM, METHOD, APPARATUS, AND COMPUTER MEDIA FOR DISTRIBUTING TARGETED ALERTS

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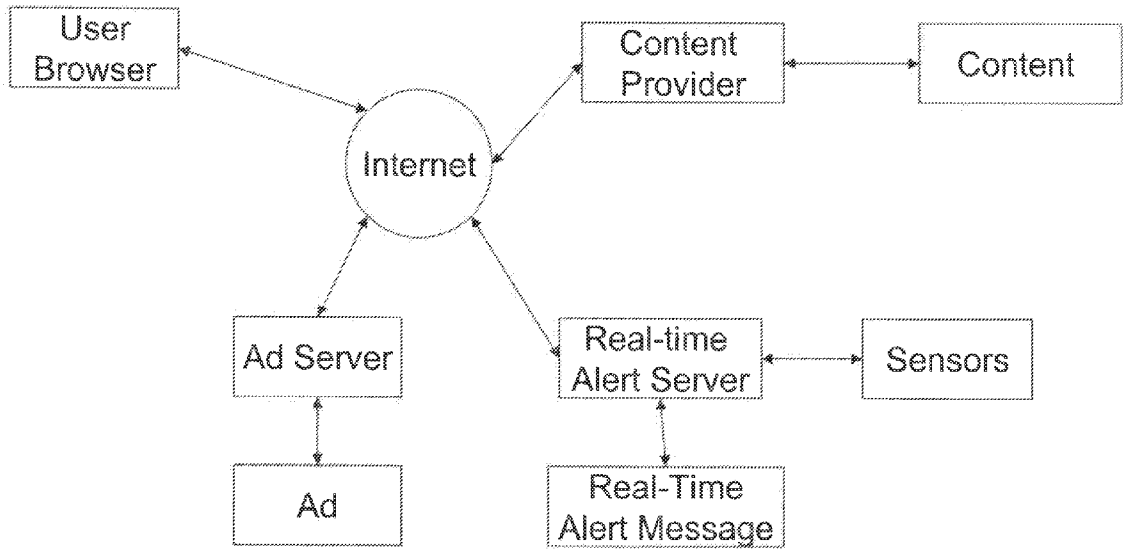
(57) **ABSTRACT**

A method of presenting content, including steps of: determining a location associated with a user; receiving notice of a dynamic content alert (DCA); creating an advertisement that includes real-time information related to the dynamic content being within a predetermined range of the location associated with the user; and presenting the advertisement to the user.



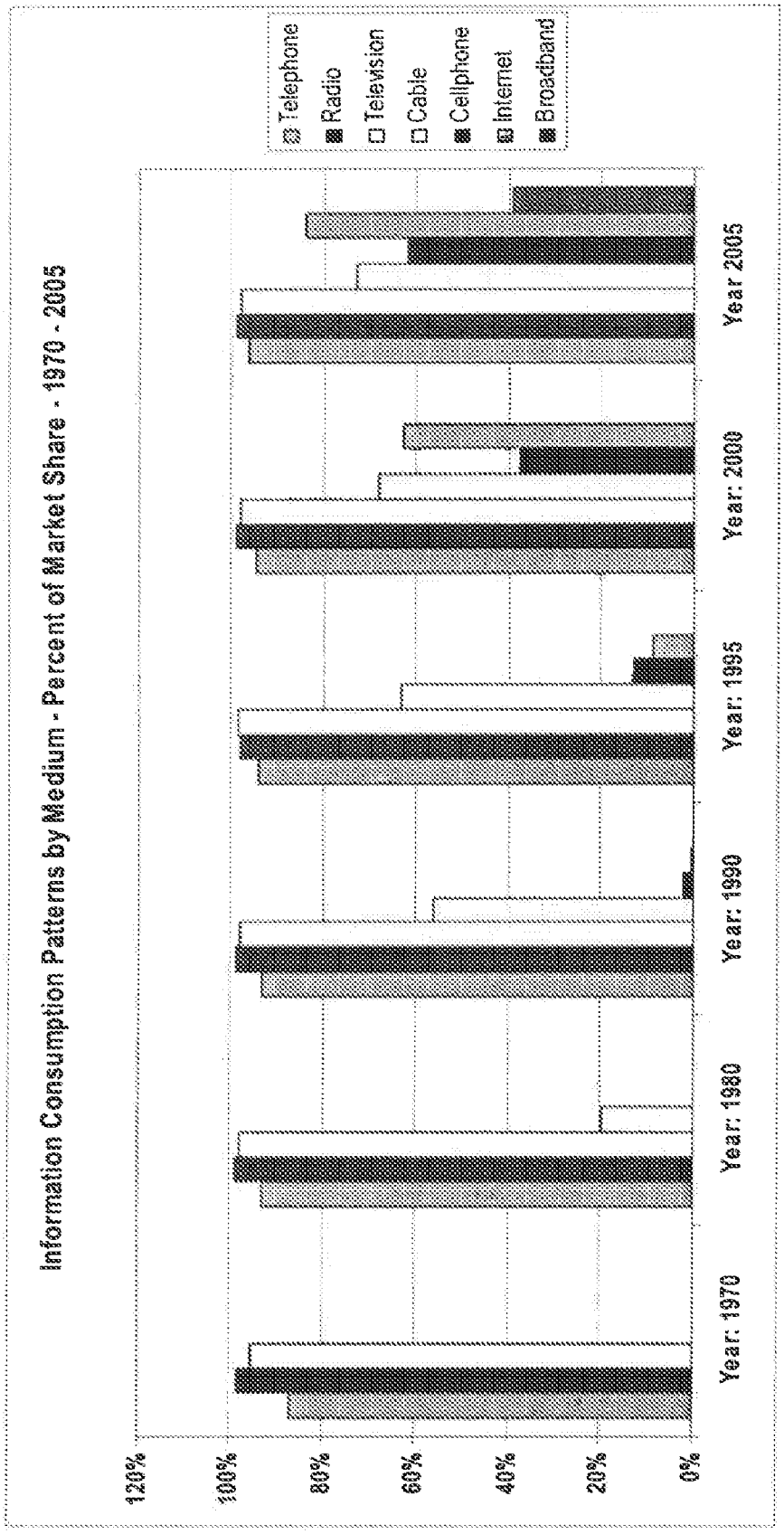

Information Consumption Patterns by Medium - Percent of Market Share - 1970 - 2005
Telephone
Radio
Television
Cable
Cellphone
Internet
Broadband
120%
100%
80%
60%
40%
20%
0%
Year: 1970
Year: 1980
Year: 1990
Year: 1995
Year: 2000
Year 2005

FIG. 1

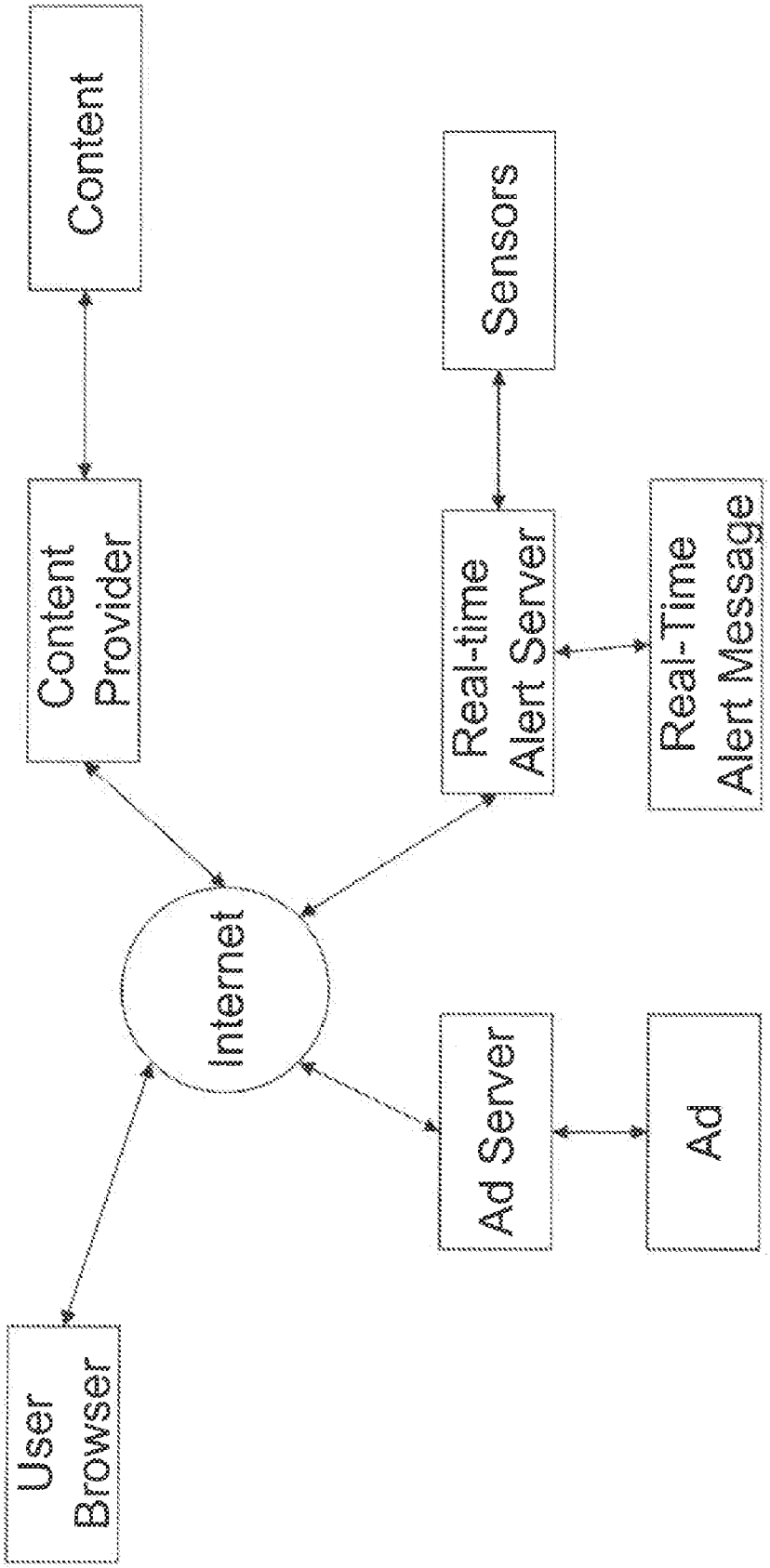

Content
Content Provider
Internet
User Browser
Sensors
Real-time Alert Server
Real-Time Alert Message
Ad Server
Ad

Fig. 2A

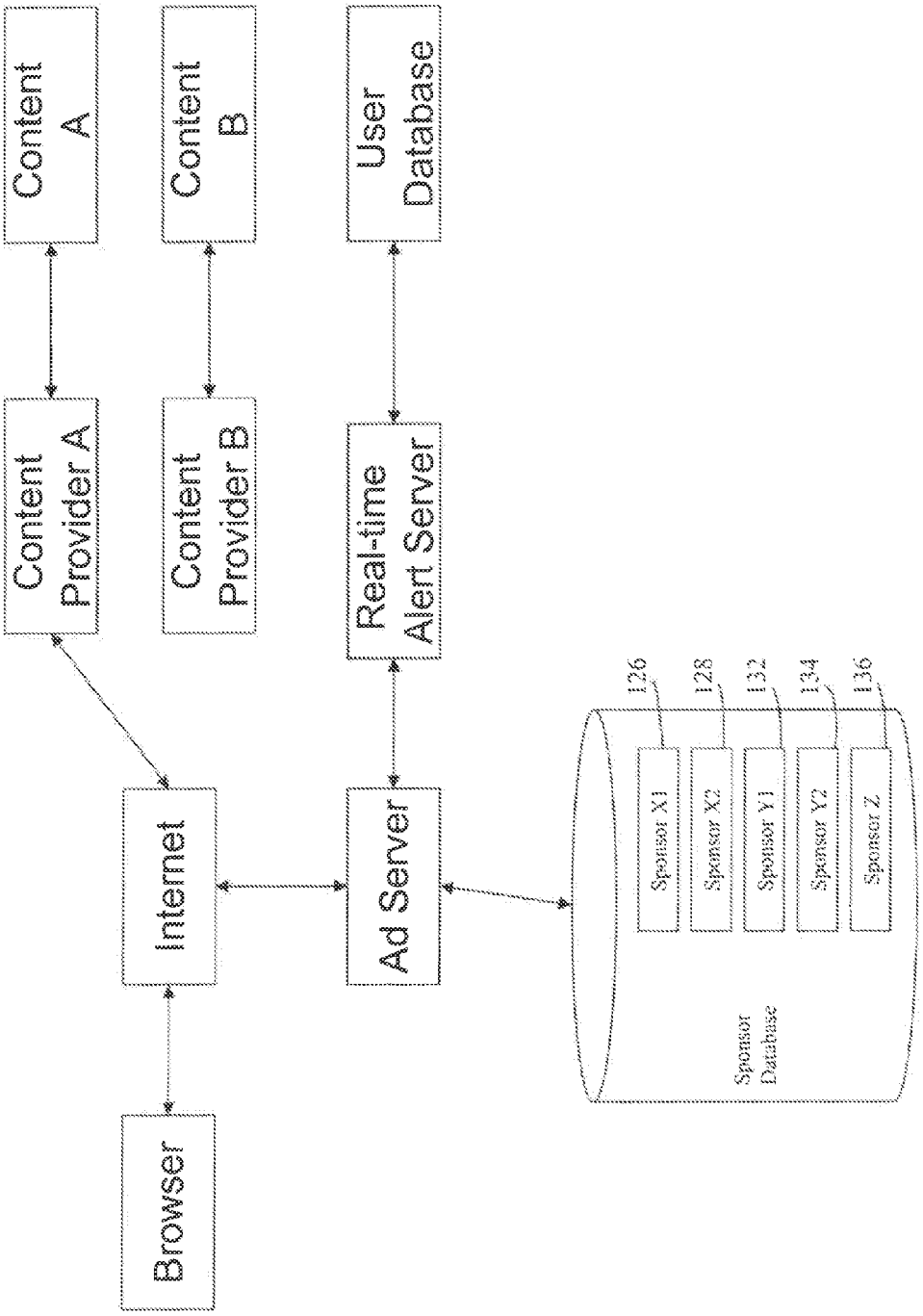
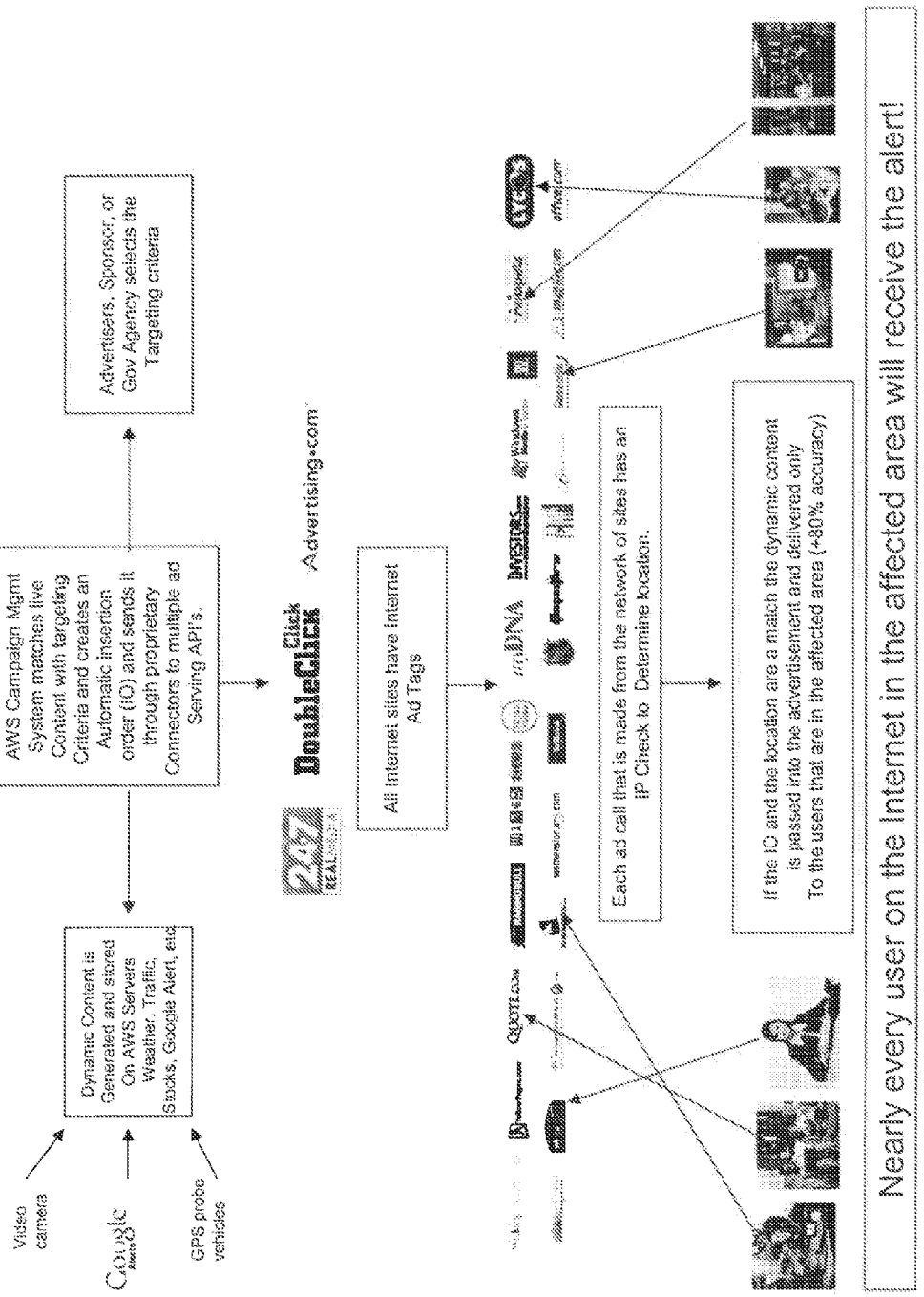

Content A
Content B
User Database
Content Provider A
Content Provider B
Real-time Alert Server
Internet
Ad Server
Browser
126
128
132
134
136
Sponsor X1
Sponsor X2
Sponsor Y1
Sponsor Y2
Sponsor Z
Sponsor Database

Fig. 2B

FIG. 2C Dynamic Content Targeting



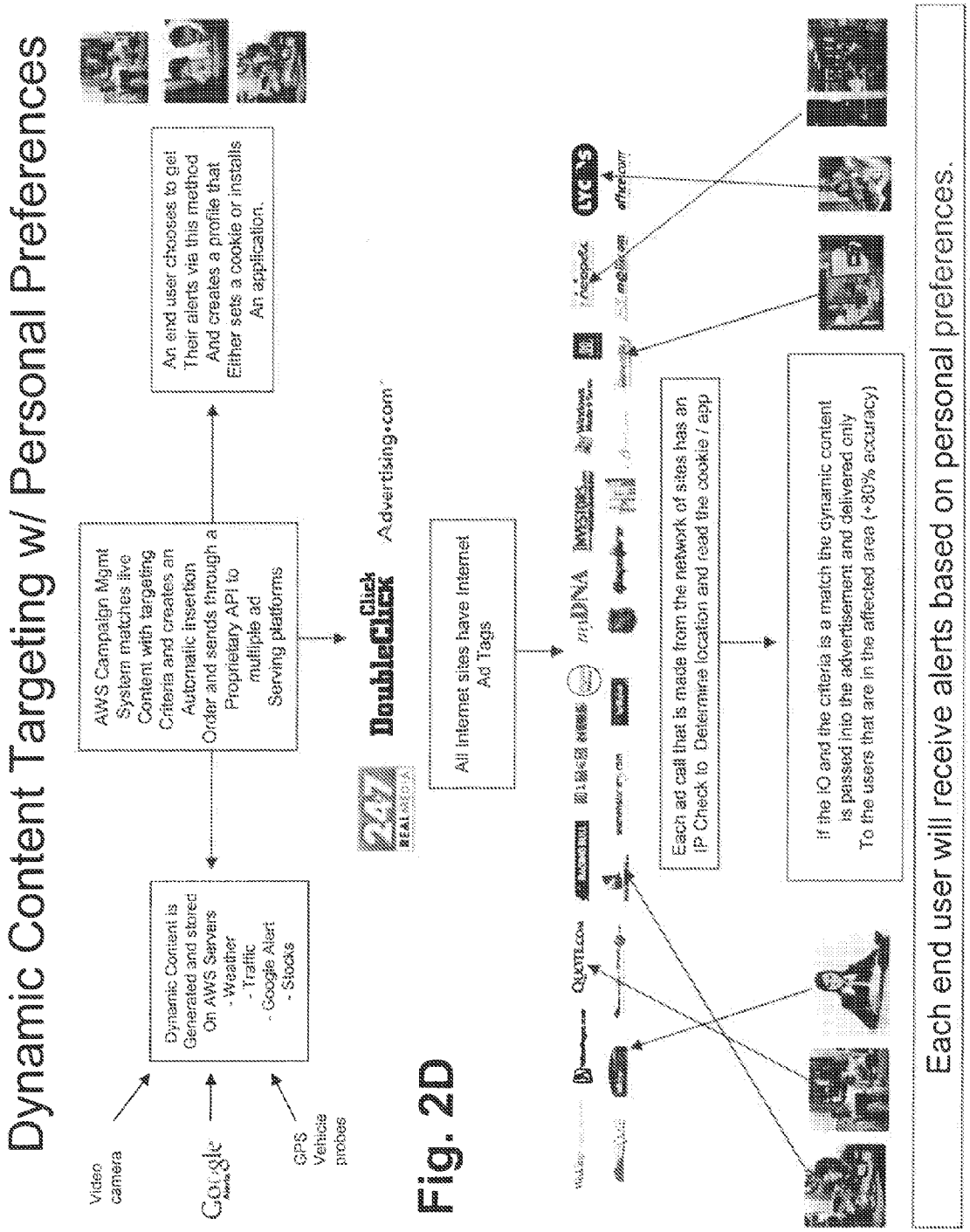

Dynamic Content Targeting w/ Personal Preferences
Video camera
Google
GPS Vehicle probes
Dynamic Content is Generated and stored On AWS Servers
- Weather
- Traffic
- Google Alert
- Stocks
AWS Campaign Mgmt System matches live Content with targeting Criteria and creates an Automatic insertion Order and sends through a Proprietary API to multiple ad Serving platforms
An end user chooses to get Their alerts via this method And creates a profile that Either sets a cookie or installs An application.
DoubleClick
Advertising.com
All internet sites have Internet Ad Tags
Each ad call that is made from the network of sites has an IP Check to Determine location and read the cookie / app
If the IO and the criteria is a match the dynamic content is passed into the advertisement and delivered only To the users that are in the affected area (+80% accuracy)
Each end user will receive alerts based on personal preferences.

Fig. 2D

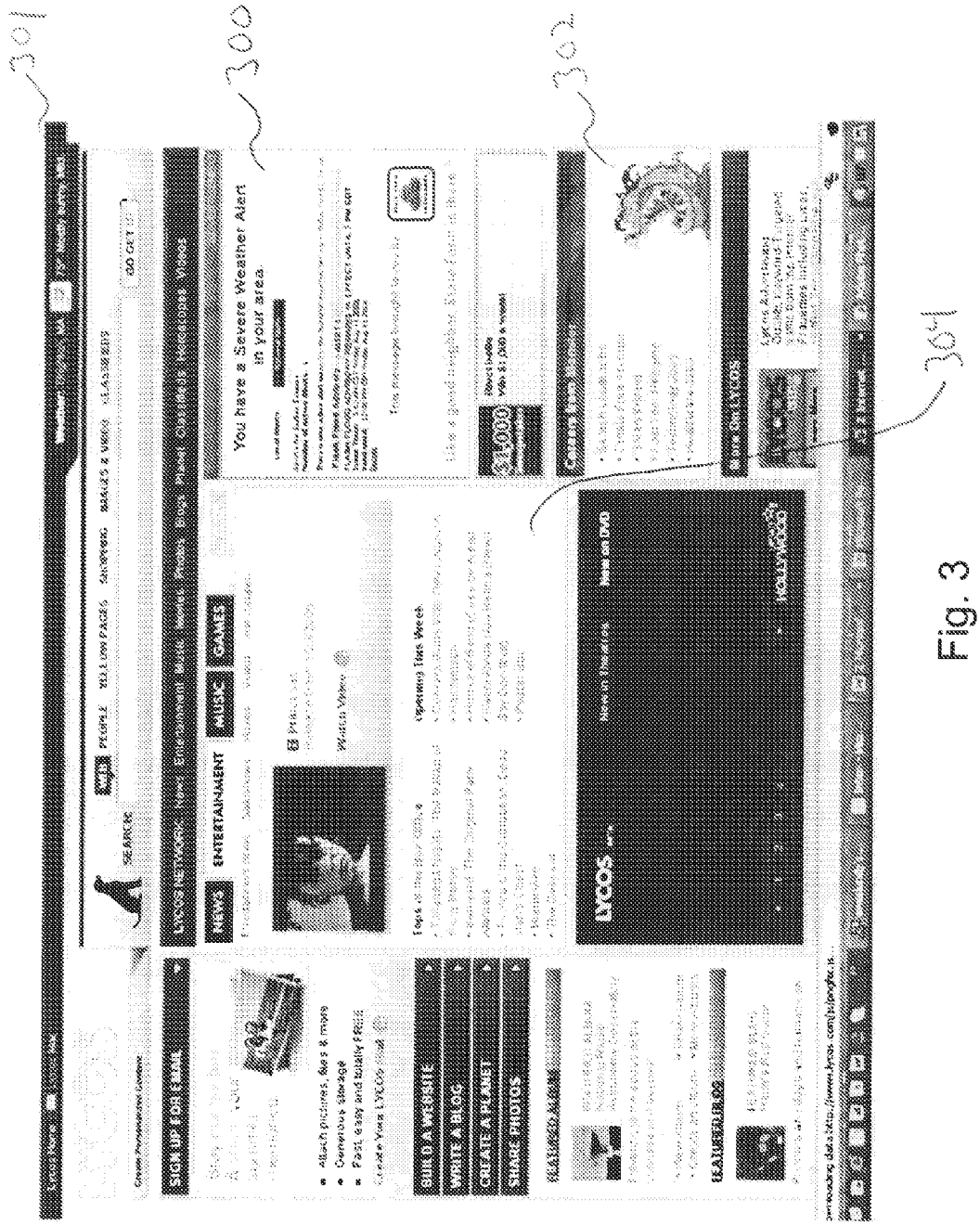

301
300
302
301
SEARCH
NEWS
ENTERTAINMENT
MUSIC
GAMES
You have a Severe Weather Alert in your area.
SIGN UP FOR EMAIL
BUILD A WEBSITE
WRITE A BLOG
CREATE A PLANET
SHARE PHOTOS
LYCOS

Fig. 3

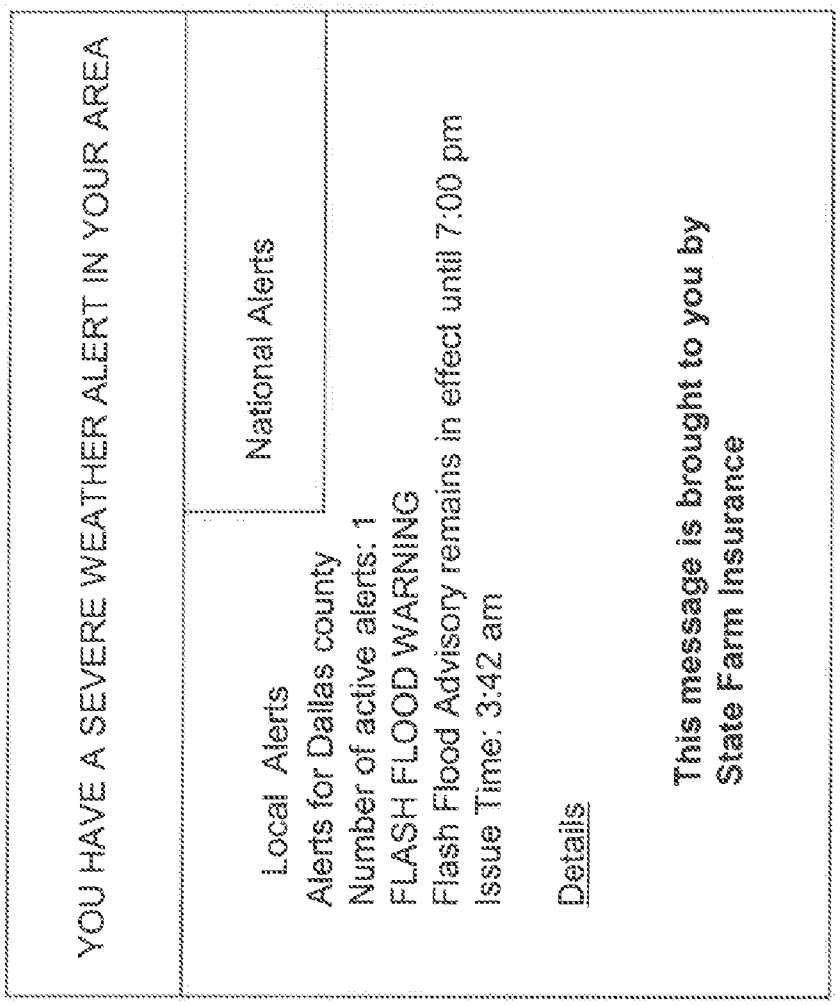
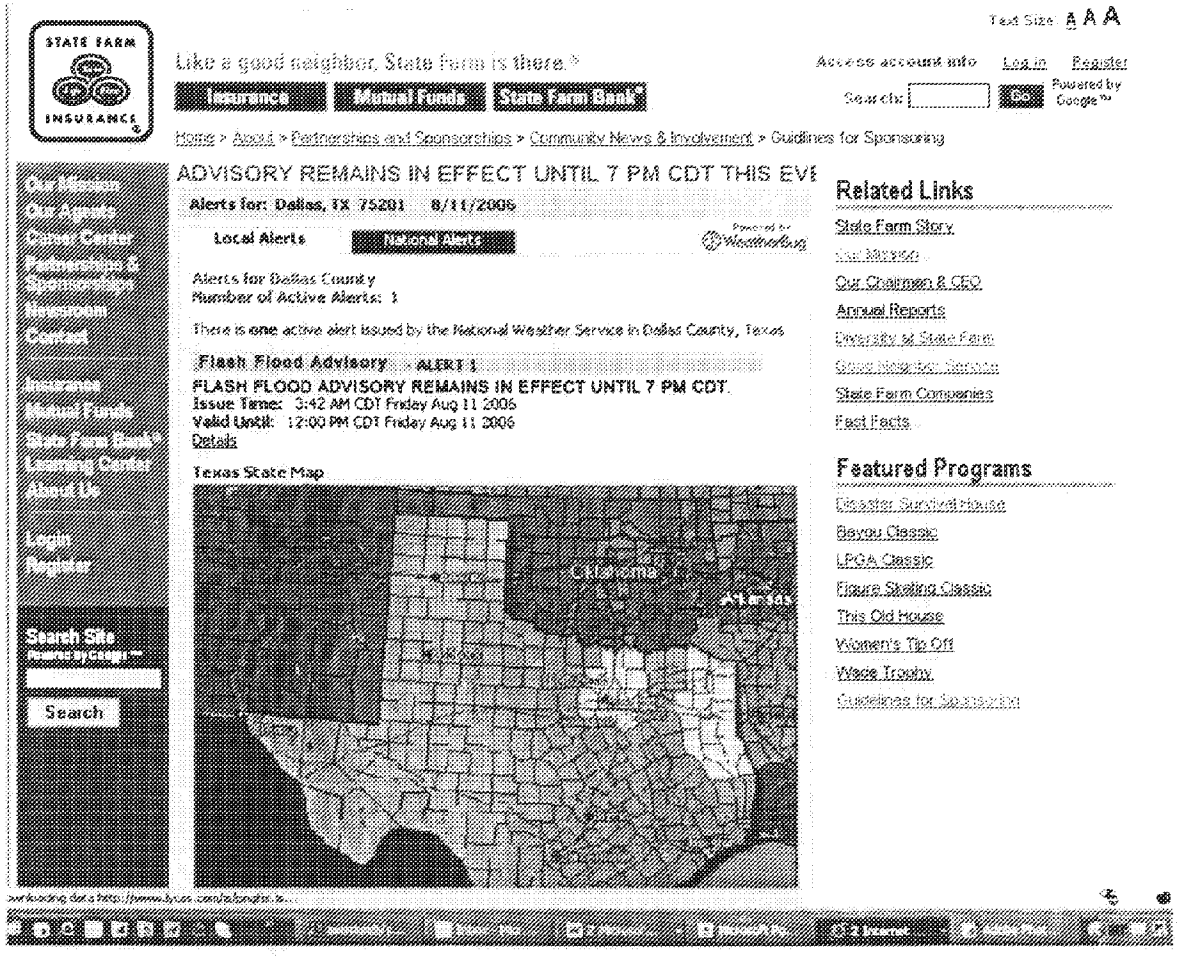

YOU HAVE A SEVERE WEATHER ALERT IN YOUR AREA
Local Alerts
National Alerts
Alerts for Dallas county
Number of active alerts: 1
FLASH FLOOD WARNING
Flash Flood Advisory remains in effect until 7:00 pm
Issue Time: 3:42 am
Details
This message is brought to you by
State Farm Insurance

FIG. 4

FIG. 5

Each end user that is visiting a site in the network, in the affected area will see the alert.

When the end user clicks the alert, they will be linked to a site that has the detailed alert information and any additional information about the sponsor.



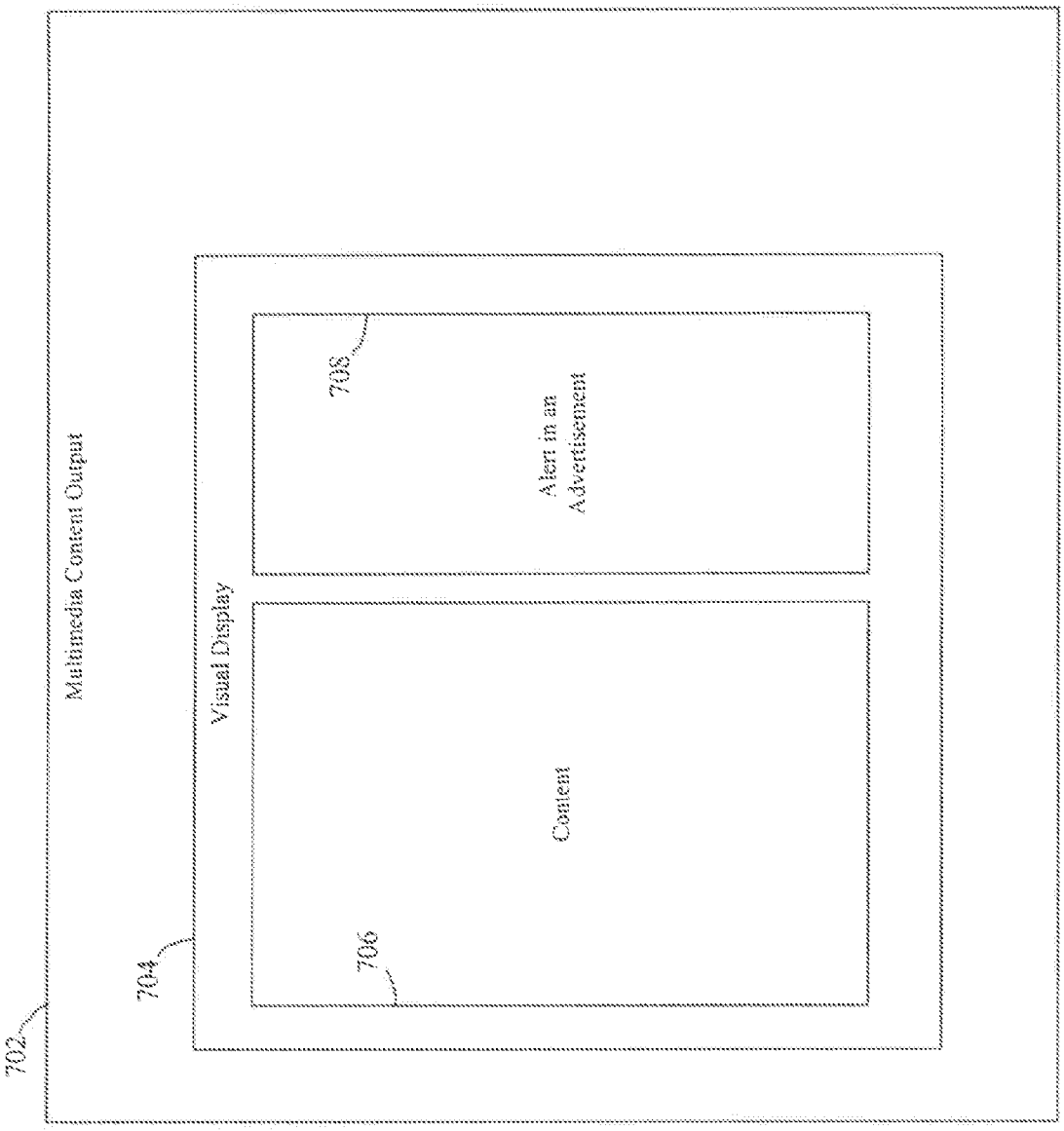

Multimedia Content Output
702
Visual Display
704
Content
706
Alert in an Advertisement
708

Fig. 6

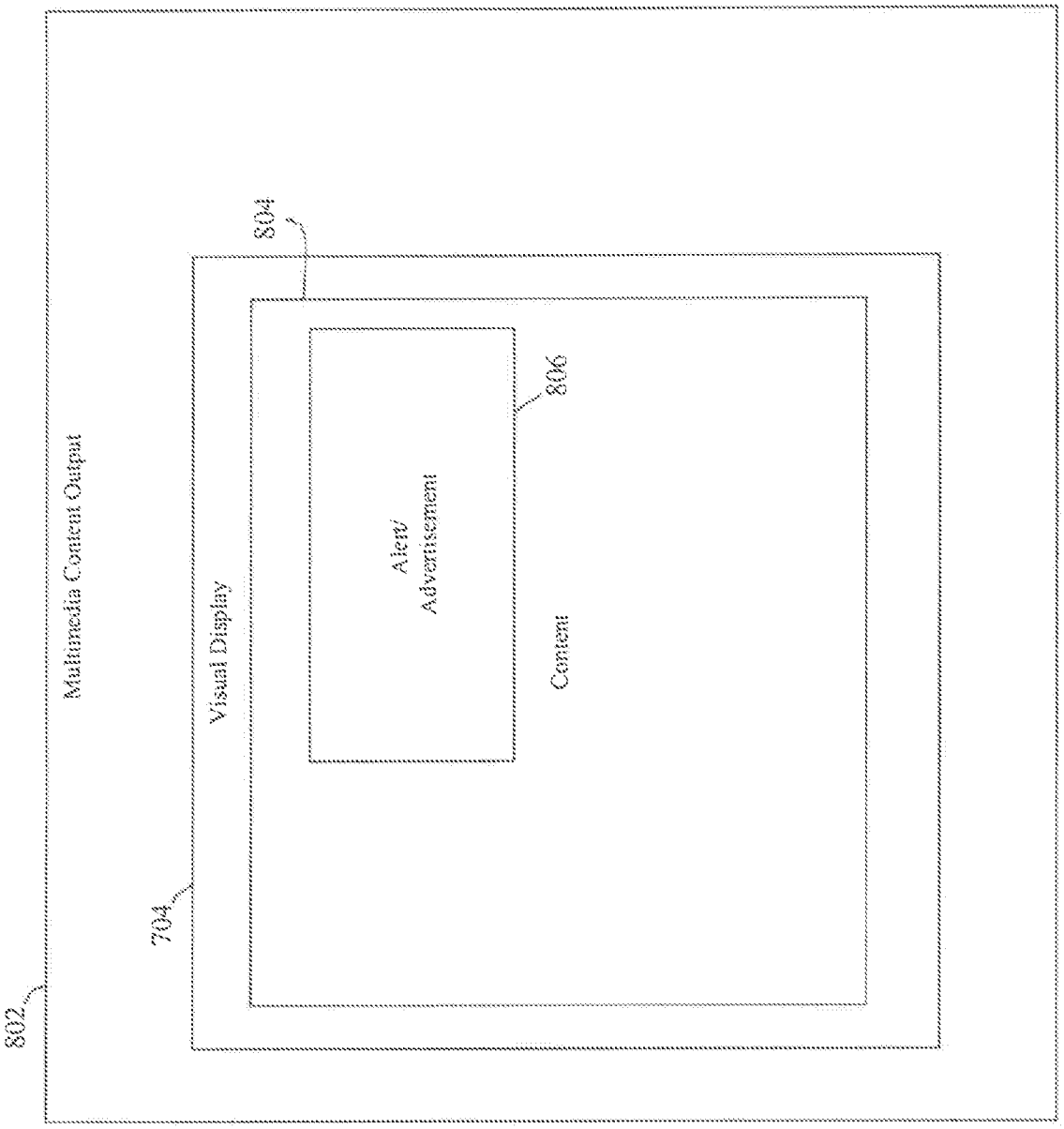

802
Multimedia Content Output
704
Visual Display
804
806
Alert/
Advertisement
Content

Fig. 7

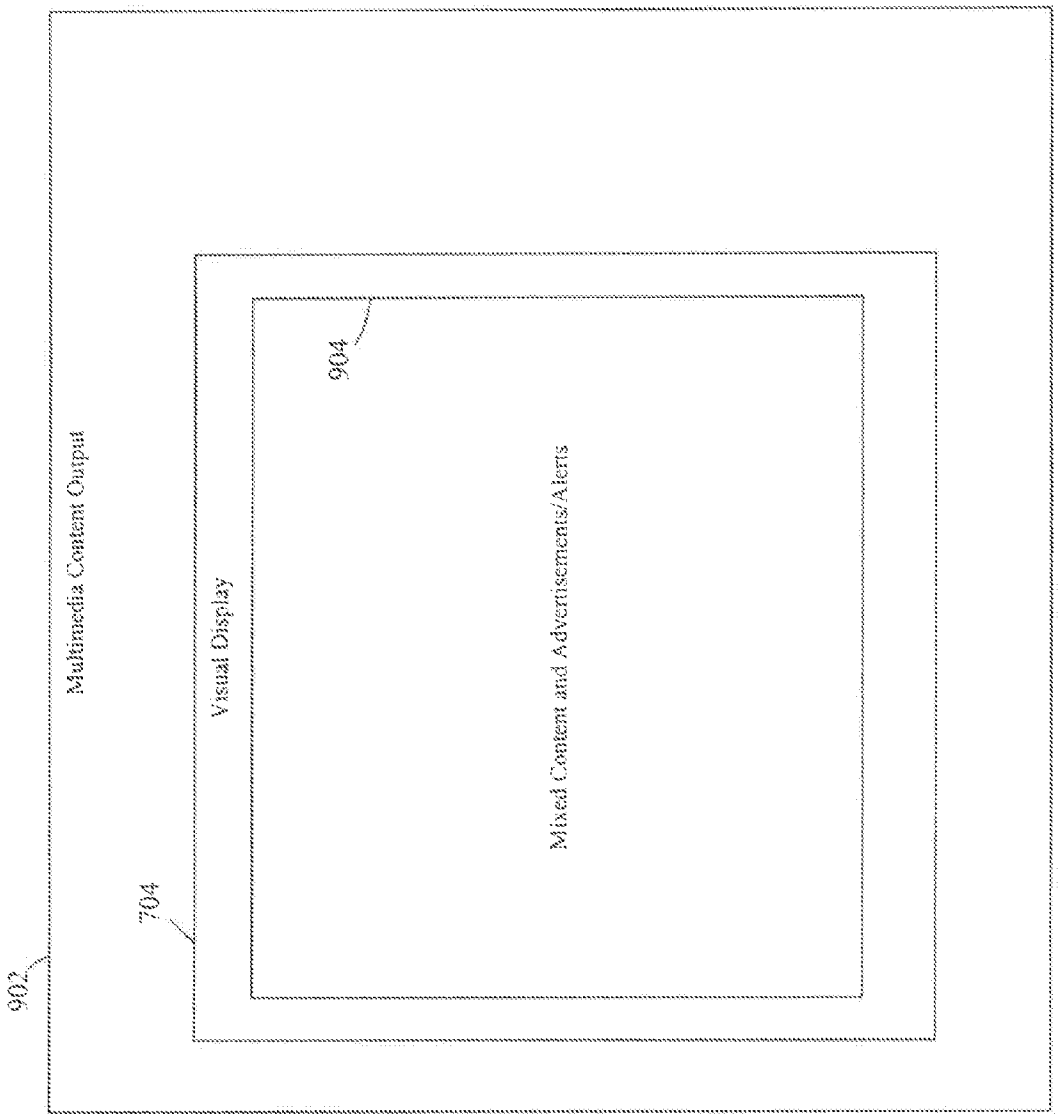

902
Multimedia Content Output
704
Visual Display
904
Mixed Content and Advertisements/Alerts

Fig. 8

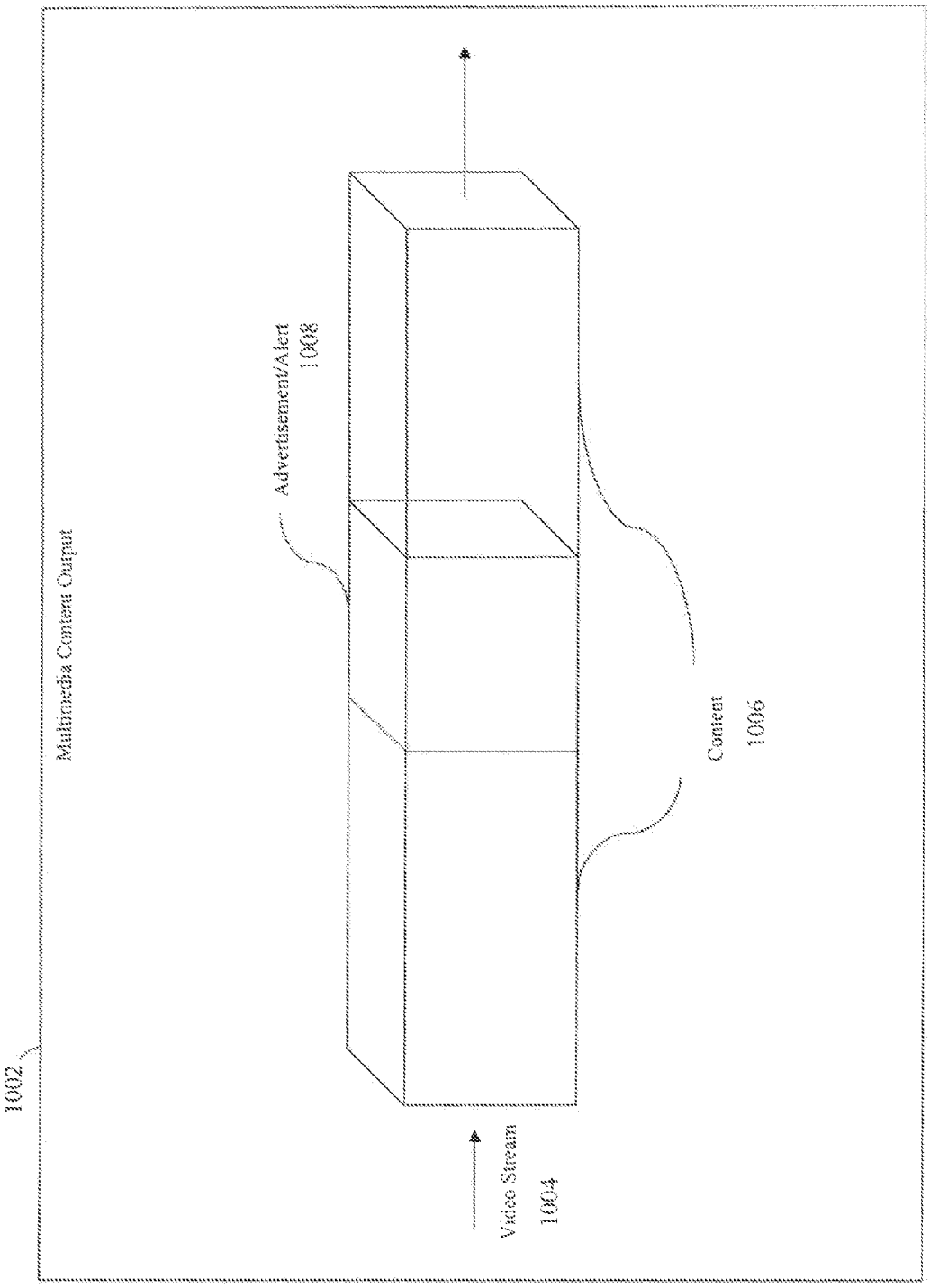

1002
Multimedia Content Output
Video Stream
1004
Advertisement/Alert
1008
Content
1006

Fig. 9

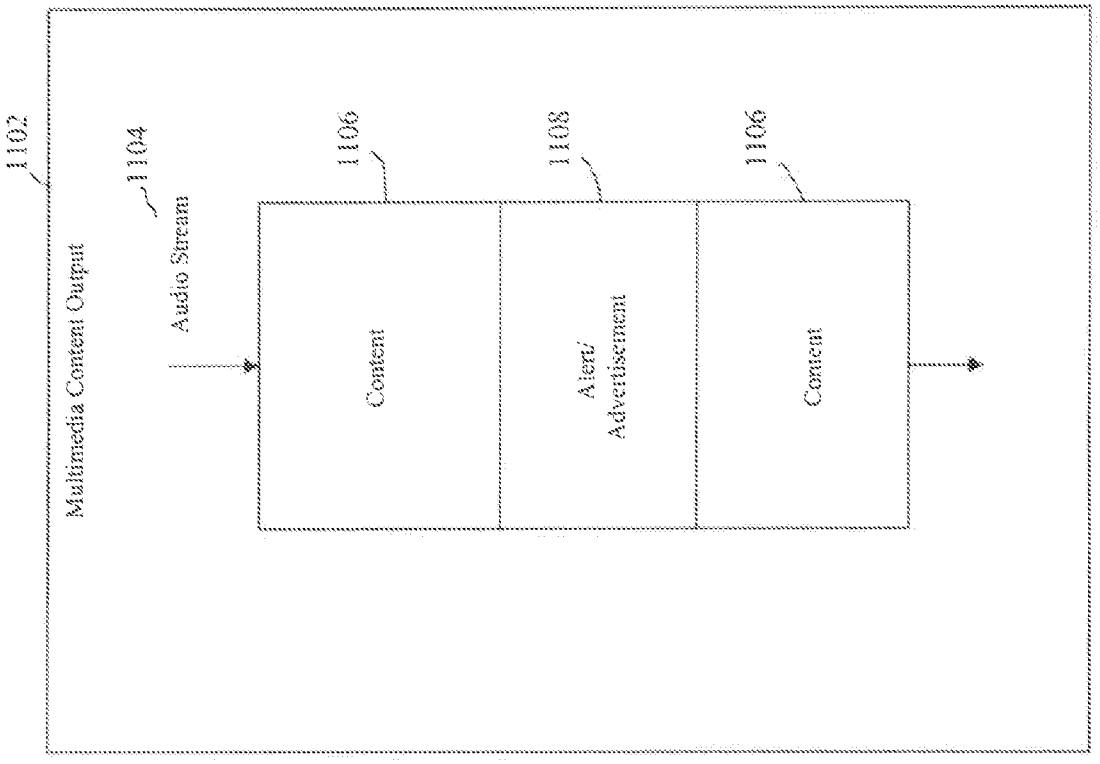

1102
Multimedia Content Output
1104
Audio Stream
1106
Content
1108
Alert/
Advertisement
1106
Content

Fig. 10

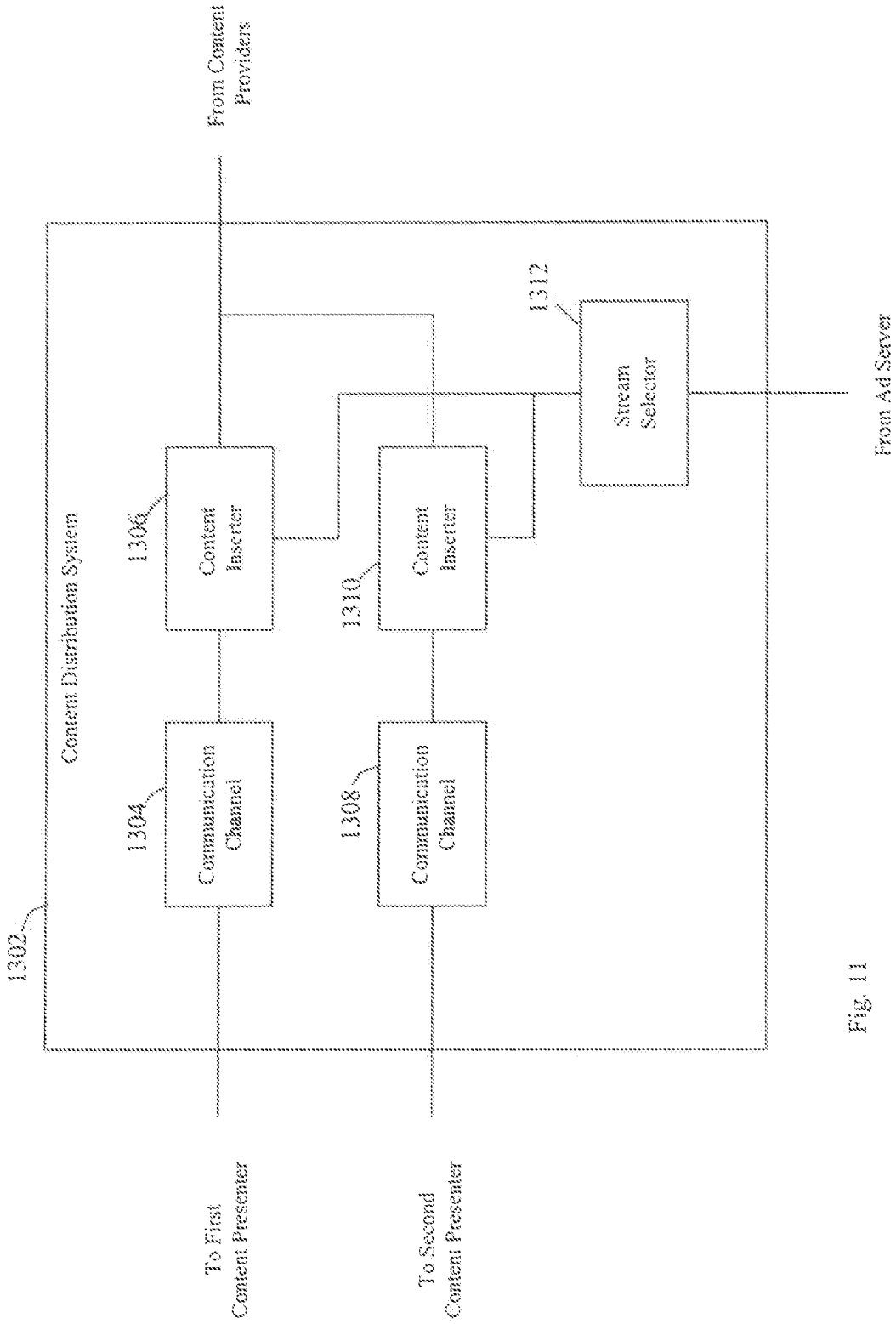

From Content Providers
Content Distribution System
1302
1304
Communication Channel
1306
Content Inserter
1308
Communication Channel
1310
Content Inserter
1312
Stream Selector
From Ad Server
To First Content Presenter
To Second Content Presenter

Fig. 11

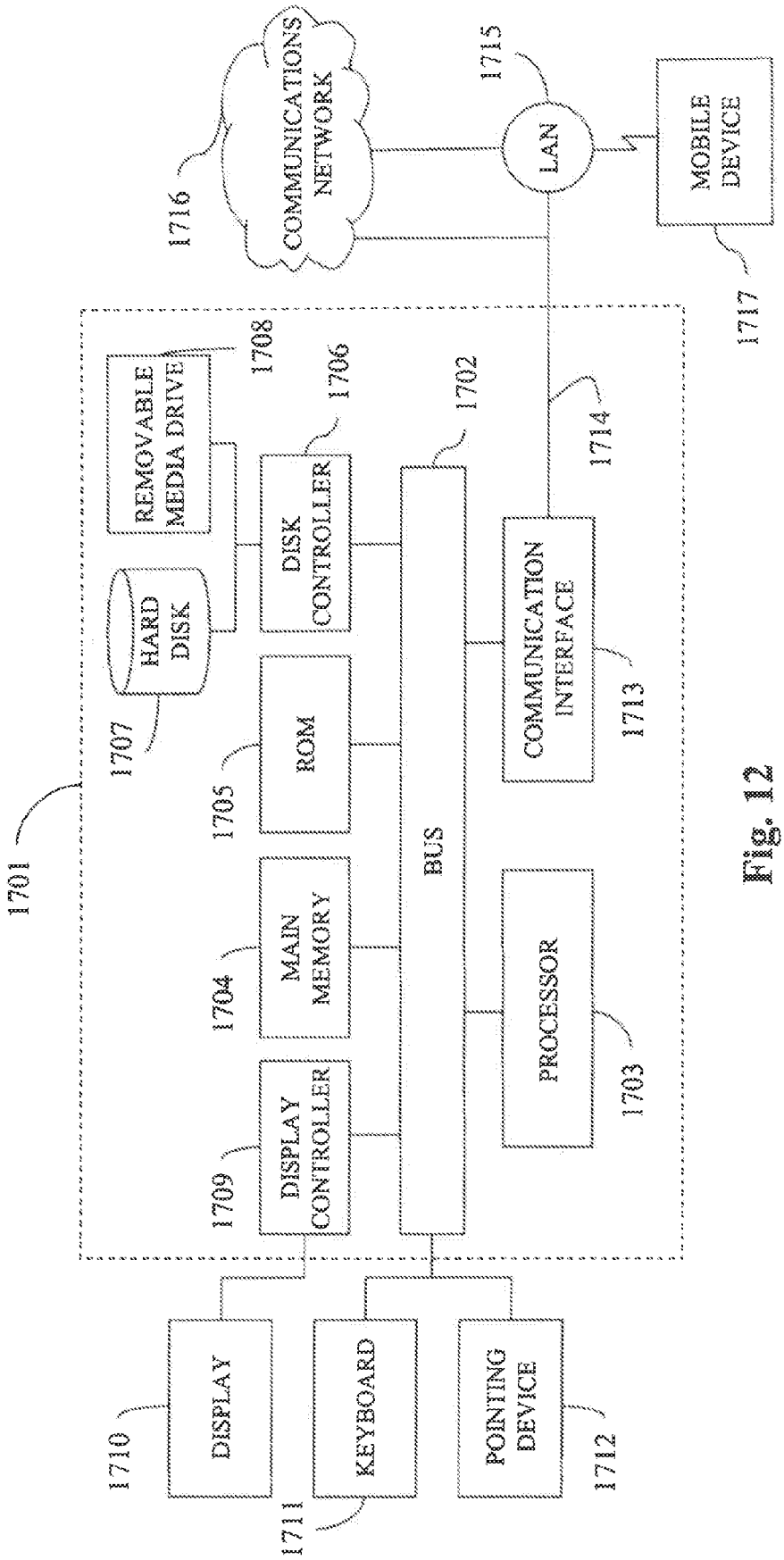

COMMUNICATIONS NETWORK
1716
1715
LAN
MOBILE DEVICE
1717
1714
1701
REMOVABLE MEDIA DRIVE
1708
HARD DISK
1707
DISK CONTROLLER
1706
ROM
1705
MAIN MEMORY
1704
DISPLAY CONTROLLER
1709
BUS
1702
COMMUNICATION INTERFACE
1713
PROCESSOR
1703
DISPLAY
1710
KEYBOARD
1711
POINTING DEVICE
1712

Fig. 12

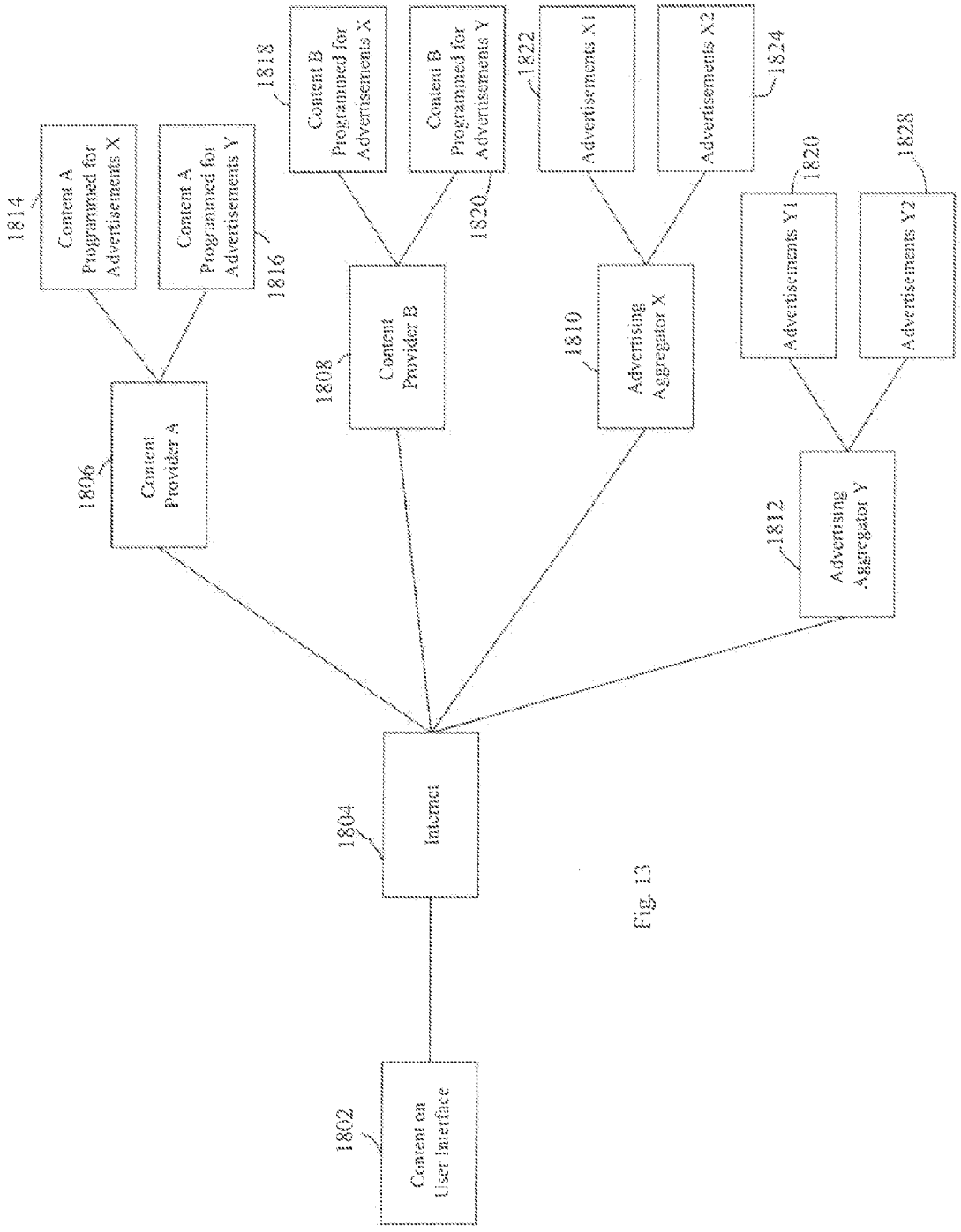

1814
Content A Programmed for Advertisements X
Content A Programmed for Advertisements Y
1816
1818
Content B Programmed for Advertisements X
Content B Programmed for Advertisements Y
1820
1822
Advertisements X1
Advertisements X2
1824
1820
Advertisements Y1
Advertisements Y2
1828
1806
Content Provider A
1808
Content Provider B
1810
Advertising Aggregator X
1812
Advertising Aggregator Y
1804
Internet
1802
Content on User Interface

Fig. 13

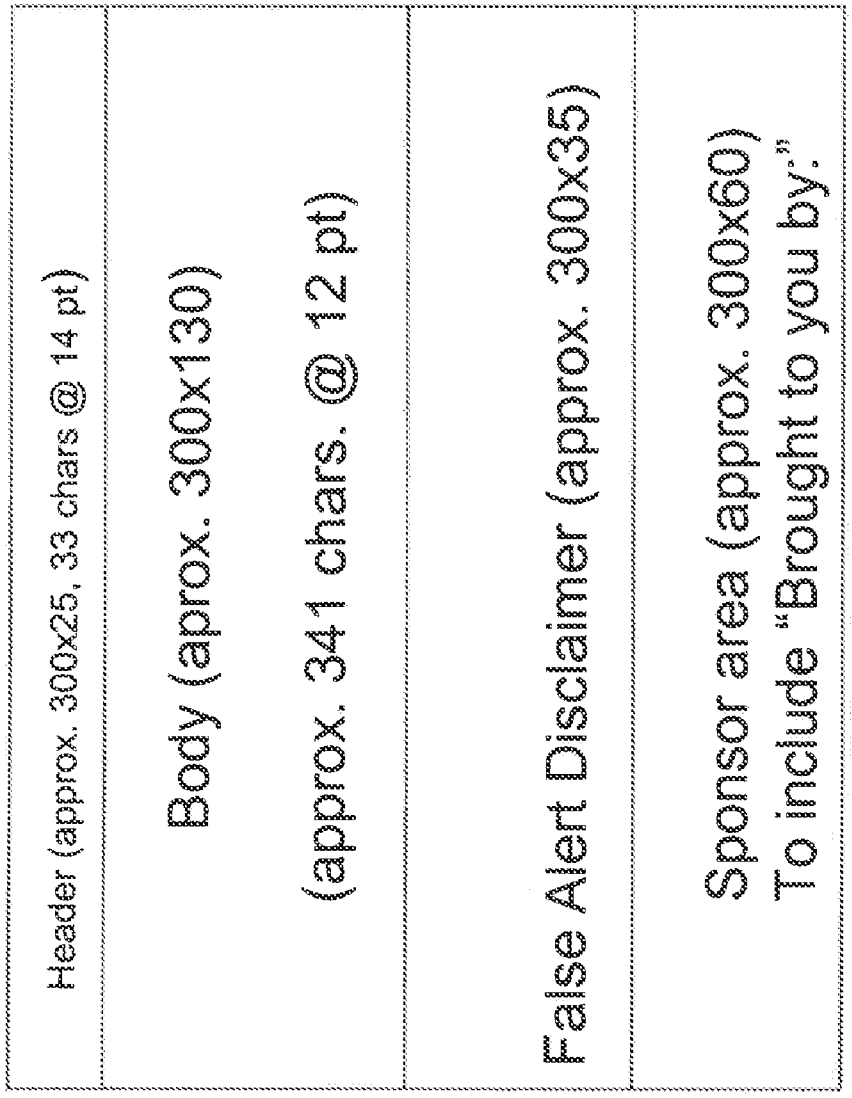

Header (approx. 300x25, 33 chars @ 14 pt)
Body (aprox. 300x130)
(approx. 341 chars. @ 12 pt)
False Alert Disclaimer (approx. 300x35)
Sponsor area (approx. 300x60)
To include "Brought to you by:"

FIG. 14

SYSTEM, METHOD, APPARATUS, AND COMPUTER MEDIA FOR DISTRIBUTING TARGETED ALERTS

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is based upon and claims the benefit of priority under 35 U.S.C. § 119(e) for U.S. Ser. Nos. 60/849,445, filed on Oct. 5, 2006 and 60/839,683, filed on Aug. 24, 2006, the entire contents of each of which are incorporated herein by reference.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates to a method, system, apparatus, and computer program product for distributing Dynamic Content Alerts (DCA) to end users that are consuming IP enabled content. Dynamic Content Alerts includes, but is not limited to, weather conditions, forecast, NWS Alerts, Amber Alerts, DHS Alerts, FEMA Alerts, Traffic Incidents, Traffic Conditions, Traffic Forecast, Sports Scores, Stock Information, News, etc. The DCA will be from 1 second to 15 minutes to get to the end user.

[0004] 2. Description of the Related Art

[0005] Consumer behavior has changed extensively over the last 30+ years, as shown by the graph in FIG. **1**. The graph in FIG. **1** shows information consumption patterns, by medium, as a percent of market share, for the period 1970-2005. In the 1970's, consumers obtained information from television, radio, and telephone. Furthermore, information consumption patters for these media have remained constant over the last 35 years, as shown in FIG. **1**. However, technology has been rapidly expanding over the last 35 years, and new media have been consistently emerging. These new media include cable (1980's), cell phone (1990's), internet (1990's), and broadband (2005).

[0006] The Emergency Broadcast System (EBS) historically was used to relay information to consumers via radio and television. In 1994, EBS was replaced by the Emergency Alert System (EAS). EAS is the test script occasionally heard on broadcast stations or local cable systems.

[0007] Since Jan. 1, 1997, all AM, FM and TV broadcast stations have been using the EAS. Also, since Dec. 31, 1998, cable systems that have 10,000 or more subscribers are part of the EAS.

[0008] The EAS uses digital technology to distribute messages. This allows for many improvements in providing emergency information to the public. The EAS system provides state and local officials with a method to quickly send out important local emergency information targeted to a specific area. The information can be sent out through a broadcast station and cable system even if those facilities are unattended. Also, the EAS digital signal is the same signal that the National Weather Service (NWS) uses on NOAA Weather Radio (NWR). This allows NWR signals to be decoded by the EAS equipment at broadcast stations and cable systems. Broadcasters and cable operators can then retransmit NWS weather warning messages almost immediately to their audiences.

[0009] However, with the diversity in information consumption patterns that exists today, EAS is no longer an effective program.

[0010] Internet advertising, when compared to convention television and radio advertising, brings with it its own distinct advantages and set of rules for success. The Internet, as an advertising medium, scores over the conventional media on two counts:

[0011] In its ability to provide for interactive communication where the advertiser can establish, a two-way communication with the consumer.

[0012] In its ability to target communication to a specific target segment.

[0013] FIG. **13** shows an example of a background scheme of combining content with advertisements. In the example of FIG. **13**, content provider A **1806**: makes available two types of content over the Internet **1804**. In particular, content provider A **1806** makes available content A programmed for advertisements X **1814** and content A**2** programmed for advertisements Y **1816**. Similarly, content provider B **1808** makes available content B programmed for advertisements X **1818** and content B programmed for advertisements Y **1820**. Further in the example of FIG. **13**, advertising aggregator **1810** provides plural types of advertising, for example advertisements X**11822** and advertisements X**21824**. In addition, advertising aggregator Y **1812** provides advertisements Y**11826** and advertisements Y**21828**.

[0014] Further, in this example, content is displayed on, or presented from a user interface **1802**, after it is retrieved over the Internet **1804**. For example, if a user requests content A from content provider A, content A programmed for advertisements X **1814** may be sent to a user interface available to the user. In addition, the content A is programmed to cause the user interface to also retrieve advertisements X from advertising aggregator X **1810**. Thus, the user interface **1802** may also request advertisement A from advertising aggregator X. Upon receipt of a request for advertisements X, advertising aggregator X **1810** makes a decision to provide at least one of advertisements X**11822** and advertisements X**21824** to the user making that request. Thus, in the present example, content on user interface **1802** is displayed as content A plus the advertisement selected by advertisement aggregator X. Alternatively, upon receipt of request for content A by content provider A **1806**, content provider A **1806** may choose to send content A programmed for advertisements Y **1816** and subsequently advertising aggregator Y **1812**, upon receiving a request for advertisements from the user interface of the user may choose to send advertisements Y**11820** or advertisements Y**21828**. Thus, in this background example, the user interface **1802** displays or presents a combination of the content requested by the user plus an advertisement selected by the content provider and/or an advertising aggregator.

[0015] Thus, in the background scheme of FIG. **13**, the selection or advertisements to be displayed with content is made by parties other than the user and therefore the advertising is less effective and the user experience is diminished.

[0016] Other background schemes have attempted to address this problem by making an advertisement selection based on general selection information collected about or from the user.

[0017] These background schemes discussed above cannot provide dynamic real-time information to consumers. The system shown in FIG. **13** has pre-formatted advertisements Y**1**, Y**2**, X**1**, and X**2**. There is no mechanism in place to combine dynamic real-time information (i.e., an alert for a tornado warning) with an advertisement, so as to provide the dynamic real-time information to a large audience in a relevant area.

[0018] Furthermore, other conventional schemes have communicated information, such as school closures, via email to registered users. However, such a system may provide information to a small audience, and the information provided is not real-time information. Further, such systems require that users check their email to receive the information. The present inventors recognize that emailing emergency alert notices would not be as effective as providing real-time alerts.

SUMMARY OF THE INVENTION

[0019] The present invention is directed to address the above-identified and other limitations with conventional systems.

[0020] In one exemplary embodiment, a method of presenting content, includes: determining a location associated with a user; receiving notice of a dynamic content alert (DCA); creating an advertisement that includes real-time information related to the dynamic content being within a predetermined range of the location associated with the user; and presenting the advertisement to the user.

[0021] In another exemplary embodiment, a method presenting content, includes: obtaining dynamic real-time information when a predetermined condition is satisfied; including the dynamic real-time information in an advertisement; accessing a database that stores sponsor information in correspondence with a characteristic of the dynamic real-time information; determining, based on information stored in the database, which sponsor corresponds with the dynamic real-time information; including the sponsor in the advertisement; and presenting the advertisement to a user.

[0022] In another exemplary embodiment, a system for presenting content, includes: means for determining a location associated with a user; means for receiving notice of a dynamic content alert (DCA); means for creating an advertisement that includes real-time information related to the dynamic content being within a predetermined range of the location associated with the user; and means for presenting the advertisement to the user.

[0023] In another exemplary embodiment, a system for presenting content, includes: means for obtaining dynamic real-time information when a predetermined condition is satisfied; means for including the dynamic real-time information in an advertisement; means for accessing a database that stores sponsor information in correspondence with a characteristic of the dynamic real-time information; means for determining, based on information stored in the database, which sponsor corresponds with the dynamic real-time information; means for including the sponsor in the advertisement; and means for presenting the advertisement to a user.

[0024] In another exemplary embodiment, a computer readable storage medium encoded with instructions, which when executed by a computer, causes the computer to implement a method of presenting content, including: determining a location associated with a user; receiving notice of a dynamic content alert (DCA); creating an advertisement that includes real-time information related to the dynamic content being within a predetermined range of the location associated with the user; and presenting the advertisement to the user.

BRIEF DESCRIPTION OF THE DRAWINGS

[0025] A more complete appreciation of the invention and many of the attendant advantages thereof will be readily obtained as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings, wherein:

[0026] FIG. **1** shows a graph of information consumption patterns by medium;

[0027] FIG. **2**A shows an exemplary embodiment of a system of the present invention;

[0028] FIG. **2**B shows another exemplary embodiment of a system of the present invention;

[0029] FIG. **2**C shows a flow chart for an embodiment of the invention;

[0030] FIG. **2**D shows a flow chart for an embodiment of the invention;

[0031] FIG. **3** is a screen shot of a web page that includes an exemplary targeted alert of the present invention;

[0032] FIG. **4** is an exemplary targeted alert shown in the web page of FIG. **3**;

[0033] FIG. **5** is exemplary screen shot of web site of a sponsor;

[0034] FIG. **6** is a block diagram of an embodiment of multimedia content output in the present invention;

[0035] FIG. **7** is a block diagram of another embodiment of multimedia content output in the present invention;

[0036] FIG. **8** is a block diagram of another embodiment of multimedia content output in the present invention;

[0037] FIG. **9** is a block diagram of another embodiment of multimedia content output in the present invention;

[0038] FIG. **10** is a block diagram of another embodiment of multimedia content output in the present invention;

[0039] FIG. **11** is a block diagram of an embodiment of a content distribution system in the present invention;

[0040] FIG. **12** is a block diagram of an embodiment of a computer used to implement the present invention;

[0041] FIG. **13** is a block diagram of a conventional advertising system; and

[0042] FIG. **14** is an example of a design of an advertisement.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0043] Referring now to the drawings, wherein like reference numerals designate identical or corresponding parts throughout the several views, and more particularly to FIG.

2A thereof, which shows an example of a system for providing alerts to Internet users.

[0044] A user (not shown) uses browser **102** to connect to the Internet. Browser **102** sends a request to content provider **120**. Content provider **120**, in response to the request, constructs a web page including content **121** and ad tags. Ad server **108** uses the ad tags to insert ad **109** into content **121** by providing ad **109** to browser **102**. However, if predetermined conditions are met (i.e., DCA server **150** detects the occurrence of an event through sensors **151**) DCA server **150** sends an automatic insertion order to ad server **108**. The automatic insertion order causes the ad server to add DCA message **152** to ad **109**. Alternatively, DCA message may be added to a new custom advertisement.

[0045] In another embodiment of the present invention, the ad server **108** will dynamically create the advertisement as a result of the nature of the alert, rather than use an advertisement that was prefabricated. For example, in the context of a weather event, if sensors **151** detect a rain storm, ad server **108** will analyze the sensor data and dynamically construct an ad for rain tires.

[0046] Server **150** stores and generates dynamic content. Dynamic content includes, but is not limited to, weather information, traffic information, stock market information, sports information, news, DHS, Amber and FEMA alerts, etc. Dynamic content can be presented in any format including, but not limited to, text, graphics, audio, or video. The system shown in FIG. **2**A matches dynamic content and creates an automatic insertion order. The automatic insertion order is a script, which when executed, determines if a DCA is displayed to a user via an advertisement. The automatic insertion order is sent through multiple ad serving application program interfaces.

[0047] A new ad will be generated and served when the user performs an action on the website that causes the page to refresh and serve new advertising.

[0048] Each ad call results in a call to the DCA server, which performs an IP check to determine a location of the user. A person of ordinary skill in the art knows how to determine a physical location from an IP address, and further explanation will not be provided. If the automatic insertion order previously stored on the real-time alert server **150** and the location are a match, dynamic content identified by the real-time alert server is passed into the advertisement and delivered to the user. For example, if the real-time information indicates there is a severe thunderstorm warning for zip code 20878, the automatic insertion order may include a script that performs the following logical operation: if the user is located in zip code 20878, then display an advertisement that includes the thunderstorm warning (including dynamic real-time information). Then, if the IP check determines that the user is in zip code 20878, an advertisement on a webpage the user is viewing includes the above-noted advertisement and alert regarding the thunderstorm.

[0049] Prior user registration is not always required. However, another embodiment of the present invention relates to dynamic alerting based on end user preferences. End user preference registration could be registered on any site that is delivering alerts that allow end user preferences for delivery such as email, sms, phone, and in the future DCA

[0050] An embodiment of the system includes a dynamic content targeting module, that interfaces with third party ad servers, such as OAS and DoubleClick. Then, if certain conditions are satisfied (i.e., if the weather conditions, forecast alerts, etc. are met and there is a user on one of these sites that there is a partnership with) then dynamic real-time content may be displayed to a user in an affected area through a webpage advertisement.

[0051] FIG. **3** is a screen shot of a web page that includes an alert message in accordance with an embodiment of the present invention. In this example, web page **301** includes content **304** supplied by Lycos™ and advertisements **302** supplied by Monster.com™**302**. IFrame **300** includes dynamic real-time information and sponsor information, in accordance with the present invention. In this example, there is a severe weather alert in the geographic area of the user that retrieves the web page **300**, as indicated by the inserted message "You have a severe weather alert in your area. This message is brought to you by State Farm."FIG. **4** is an example of the advertisement that includes alert message. As shown in FIG. **4**, the alert message includes sponsor information by State Farm™ and information about the severe weather alert.

[0052] FIG. **2**C shows a flow chart of the interactions between the components such as those shown in the embodiment of FIG. **2**A.

[0053] In another exemplary embodiment shown in FIG. **2**B, a user (not shown) uses browser **102** to access Internet **106**. Browser **102** may be any browser, such as Internet Explorer, Mozilla, Netscape Navigator, etc. Furthermore, the browser may run on any processor, such as an Intel Pentium Processor, an Apple processor, AMD, etc. Furthermore, the client device running the browser may be a desktop computer, a laptop, a PDA, a cell phone, watch, TV or any other device capable of connecting to the Internet. Internet **106**, in this example, provides the user access to content provider A **112** or content provider B **118**. Content provider A provides a user with content A **114** and content provider B provides the user with content B **120**.

[0054] After connecting to Internet **106**, a desired web page (content A **114**) is downloaded to browser **102** from content provider A **112**. Web pages can include iFrames, or a floating frame inserted into a web page, which is associated with a tag used in web page design. Using an iFrame, a second HTML document can be embedded in a first HTML document. An example of the use of an iFrame is an advertisement that is seen on a side area of a web page.

[0055] When the user uses web browser **102** to download a web page that includes advertisements, the web browser is making a request for content and a request for an advertisement. For example, if the browser is receiving content A **114**, the content includes a script, when accessed by the server causes the server to retrieve an advertisement from a remote ad server **108**. In alternative embodiments, the ad server does not need to be remote. The ad server may be included in content provider A, or the information stored in the ad server **108** may be stored locally on the client device.

[0056] Server **108** is connected to DCA server **122**, which accesses real time information that is useful for the user. This information may include stock quotes, sports scores, traffic information, weather information, emergency alerts (including natural disasters, terrorist attacks, and Amber alerts). Using the example of weather information, the information

can be dynamic real-time information. By real-time, the information may be current as of one second and up to 15 minutes old. In the case of weather information data such as wind speed, pressure, temperature, wind direction, rate of rain fall, plus/minus one second is made possible by 8,000 WeatherBug™ Tracking Stations and more than 1,000 cameras primarily based at neighborhood schools and public safety facilities across the U.S. WeatherBug™ (a brand of AWS Convergence Technologies Inc.) maintains the largest exclusive weather network in the world.

[**0057**] For example if temperature for zip code 20878 is provide as the dynamic real-time information, the information is accurate as of one second to 15 minutes from when it is retrieved. In other embodiments, the temperature data is continuously refreshed on the browser so as to display dynamic real-time information to the user. However, the refresh rate can be modified so as to not interfere with the user's access to content **114**.

[**0058**] In the example of weather alerts, server **108** retrieves dynamic real-time information from a variety of sources; the WeatherBug network, NWS and other 3rd party content providers. The weather information can include temperature, wind speed, wind direction, humidity, pressure, rate of rain fall, amount of rain fall, severe weather alerts, pollen alerts, lightening, etc.

[**0059**] In one embodiment of the present invention, the dynamic real-time information is displayed in a 300×250 rich media advertising unit. However, any size advertising unit can be used. In another embodiment of the present invention, there is a sponsor for the dynamic real-time information. For example, a severe weather warning for zip code 20878 is displayed along with a message stating "brought to you by Company D."

[**0060**] The name of Company D shown in the advertisement may be a hyperlink. If the user clicks the hyperlink, the user's browser would retrieve information from the website of Company D. In another embodiment of the present invention, the website of Company D may provide the user with additional information regarding the dynamic real-time information included in the advertisement. Furthermore, this additional information is may be included in an iFrame, or on a fully hosted web site by either party, so as to have the ability to not obscure the information provided in Company D's website.

[**0061**] FIG. **5** shows an example of a webpage served by Company D's website (in this example Company D is State Farm™). As shown in FIG. **5**, the State Farm website provides the user with additional information about the severe weather alert included in the advertisement shown in FIGS. **3** and **4**.

[**0062**] Whether the user clicks on the hyperlink in the advertisement, Company D, by sponsoring the advertisement, has created awareness of the event (the dynamic real-time information, which may be a severe weather alert). Furthermore, the user can now associate Company D as a provider of valuable information.

[**0063**] In the example using weather information, weather information for the geographical location of the user may be the most useful and valuable to the user. However, the user may also be interested in the weather for another locale (such as a work location, an alternate residence, a residence of a family member, vacation spot, etc. . . .).

[**0064**] In an alternate embodiment of the present invention, the user may be registered with the system shown in FIG. **2**B, and the system may store or retrieve a characteristic of the user, such as the user's name, zip code, location, a direct request for specific information, etc. Using the characteristic of the user, database **130** can be accessed by real-time alert server **122**, so as to retrieve an alert location, type, or other alert parameters based on user preferences stored in database **130**.

[**0065**] In addition, database **130** can include the type of information the user wants to see (i.e., weather, sports, stock information, etc.). The type of information the user wants to see can be stored in correspondence with the characteristic of the user. For example, if the characteristic is a zip code, the data base **130** can store instructions to provide all users in that particular zip code with real-time dynamic weather alerts and/or scores for the local sporting teams.

[**0066**] In another embodiment, server **108** combines dynamic real-time information obtained from DCA server **122** and advertisement sponsor database **110**. In one embodiment, one sponsor is the exclusive sponsor of all alerts used in conjunction with content provider A or with the type of alerts (i.e., sponsor X**1** sponsors all traffic alerts, sponsor X**2** sponsors all weather alerts, sponsor X**3** sponsors Amber alerts, etc). In another embodiment, the sponsors may be cycled through (i.e., each sponsor is used for one hour or based on specific alert types such as Winter Weather Advisories). In another embodiment, each sponsor only sponsors certain dynamic content type. In an example using weather information, if the dynamic real-time temperature information is displayed to the user, the sponsor is selected based on this data.

[**0067**] For example, server **108** executes the following logical process: if the temperature is above 90 degrees, then display sponsor X**1** (a brand of a popular soft drink), if the temperature is below 70 degrees, then display sponsor X**2** (an advertisement for weather stripping), and otherwise display sponsor X**3** (an advertisement for clothing). Further, as noted above, the advertisement can be created dynamically.

[**0068**] FIG. **6** shows an example of a multimedia content output **702** according to an embodiment of the present invention. Multimedia content output **702** includes a visual display **704** (e.g., a browser window on a computer or a page in a magazine). The visual display **704** shows content **706** and an alert **708**, which is included in an advertisement. Each of the content **706** and the alert **708** are visible on at least a portion of the visual display **704**. In this example the content **706** is a content requested by a user and the alert **708** includes advertisement having dynamic real-time information and information pertaining to the sponsorship of the advertisement. The dynamic real-time information is information that is relevant to the user, and is selected in a manner as discussed above. Although the alert is shown as being separate from the content **706**, one of skill in the art will know that an advertisement may be superimposed on the content, for example, as a window placed over the content, or a banner advertisement in an Internet page placed alongside or around the requested content. One example of such an advertising graphical user interface is described in U.S.

patent application Ser. No. 09/813,751, filed Mar. 21, 2001 entitled "Method for Enhancing the Effectiveness of Advertising Delivery Over Interactive Media", the entire contents of which is incorporated herein by reference.

[0069] Furthermore, as noted above, the alert can be displayed in other formats besides video, which include but are not limited to, text, audio, or graphics.

[0070] As a further example, as shown, in FIG. **7**, alert **806** may be superimposed over content **804**. Alternatively, as shown in the example of FIG. **8**, a mixed content and alert **904** may include both content and advertisements. Further, the display of content in advertisements is not limited to the examples shown and other possible combinations of advertisement and content are also included in the present invention.

[0071] In other embodiments of the present invention, real-time reporting and analytics can be generated overlaying the alert data, with other data such as population, location of power plants, nuclear facilities, etc.

[0072] Furthermore, the present invention is not limited to Internet based systems. For example, the present invention can be used in a satellite based system (such as a satellite phone system or a satellite television system) or a terrestrial broadcast system (i.e., television or radio). Furthermore, the digital content can be delivered using any digital system, and is not limited to HTML. Persons of ordinary skill in the art will recognized that any communication protocol can be used, including but not limited to EDXL (emergency data exchange language), XML (extensible markup language), and CAP (common alert protocol).

[0073] FIG. **9** shows an example of a multimedia content output **1002** that presents a video stream **1004** to the user. Video stream **1004** includes content **1006** and alert **1008**, which is included in an advertisement. Thus, in the present example, video frames of content **1006** are intermixed with video of alert **1008** (e.g., an advertising video).

[0074] For example, the multimedia content output **1002** may be an example of a video window or user's computer, and video stream **1004** may be the video content received over the Internet channel which includes a desired program (e.g., content **1006**).

[0075] For example, a user may be identified using a radio signal scheme to identify the user to the multimedia content output device or by correlating a location of the user with a location of the multimedia content output device or by other means of associating a passerby/user with a particular multimedia content output. Alternatively, the multimedia content output **1002** may be an example of a portable device having a video and audio display, such as a PDA or portable computer or cell phone.

[0076] FIG. **10** shows a further possible embodiment of a multimedia content output according to the present invention. In this example, multimedia content output **1102** presents an audio stream **1104** which includes audio content **1106** and audio alert **1108**.

[0077] For example, the multimedia content output **1102** may be an example of a user's computer, and audio stream **1104** may be the video content received over the Internet radio channel which includes a desired program (e.g., content **1106**).

[0078] In another embodiment, the multimedia content output **1102** may be a portable user radio listening device and audio stream **1104** may be an example of audio information broadcast from a particular terrestrial or satellite radio station. In addition, content **1106** may be an example of a particular audio program, for example a talk radio show, and alert **1108** may be an example of an audio advertisement presented during or in between breaks on the talk radio show.

[0079] Further, although multimedia content output examples are shown with visual display images, video streams and audio streams, a particular multimedia content output according to the present invention may include the presentation of combinations of these types of media as well as other types of media.

[0080] For example, the system shown in FIG. **2**B can match DCA with targeting criteria and create an automatic insertion order. The automatic insertion order is sent through an API to one or more ad serving platforms, such as DoubleClick and Advertising.com. In this embodiment, an end use can create a profile that sets a cookie, installs an application, or through some other method, that manages user preferences. Each end user will receive alerts based on their personal preferences. FIG. **2**D shows a flow of information between the components of FIG. **2**B.

[0081] FIG. **11** shows an embodiment of a content distribution system **1302**. In the content distribution system **1302**, content inserters **1306** and **1310** receive content from content providers and combine that content with an advertisement (including alert information) as indicated by stream selector **1312**. Stream selector **1312** receives an advertisement/alert from an advertisement server. Stream selector **1312**, in some embodiments, also receives sponsor information for the received advertisement/alert. The content and advertisement/alert (along with sponsor information) are combined and communicated to a content presenter (i.e., television, radio, cell phone, internet, PC, etc.) using communication channels **1304** and **1308**.

[0082] If the user is registered, the advertisement/alert is constructed by having stream selector **1312** direct alert X**1** and the sponsor information to content inserter **1306**. Content inserter **1306** adds alert X**1** and the corresponding sponsor information to the content that is distributed to the content presenter of the user via communication channel **1304**.

[0083] FIG. **12** illustrates a computer system **1701** upon which an embodiment of the present invention may be implemented. The computer system **1701** includes a bus **1702** or other communication mechanism for communicating information, and a processor **1703** coupled with the bus **1702** for processing the information. The computer system **1701** also includes a main memory **1704**, such as a random access memory (RAM) or other dynamic storage device (e.g., dynamic RAM (DRAM), static RAM (SRAM), and synchronous DRAM (SDRAM)), coupled to the bus **1702** for storing information and instructions to be executed by processor **1703**. In addition, the main memory **1704** may be used for storing temporary variables or other intermediate information during the execution of instructions by the processor **1703**. The computer system **1701** further includes a read only memory (ROM) **1705** or other static storage device (e.g., programmable ROM (PROM), erasable PROM

(EPROM), and electrically erasable PROM (EEPROM)) coupled to the bus **1702** for storing static information and instructions for the processor **1703**.

[**0084**] The computer system **1701** also includes a disk controller **1706** coupled to the bus **1702** to control one or more storage devices for storing information and instructions, such as a magnetic hard disk **1707**, and a removable media drive **1708** (e.g., floppy disk drive, read-only compact disc drive, read/write compact disc drive, compact disc jukebox, tape drive, flash memory drive, and removable magneto-optical drive). The storage devices may be added to the computer system **1701** using an appropriate device interface (e.g., small computer system interface (SCSI), integrated device electronics (IDE), enhanced-IDE (E-IDE), direct memory access (DMA), or ultra-DMA).

[**0085**] The computer system **1701** may also include special purpose logic devices (e.g., application specific integrated circuits (ASICs)) or configurable logic devices (e.g., simple programmable logic devices (SPLDs), complex programmable logic devices (CPLDs), and field programmable gate arrays (FPGAs)).

[**0086**] The computer system **1701** may also include a display controller **1709** coupled to the bus **1702** to control a display **1710**, such as a cathode ray tube (CRT), for displaying information to a computer user. The computer system includes input devices, such as a keyboard **1711** and a pointing device **1712**, for interacting with a computer user and providing information to the processor **1703**. The pointing device **1712**, for example, may be a mouse, a trackball, or a pointing stick for communicating direction information and command selections to the processor **1703** and for controlling cursor movement on the display **1710**. In addition, a printer may provide printed listings of data stored and/or generated by the computer system **1701**.

[**0087**] The computer system **1701** performs a portion or all of the processing steps of the invention in response to the processor **1703** executing one or more sequences of one or more instructions contained in a memory, such as the main memory **1704**. Such instructions may be read into the main memory **1704** from another computer readable medium, such as a hard disk **1707** or a removable media drive **1708**. One or more processors in a multi-processing arrangement may also be employed to execute the sequences of instructions contained in main memory **1704**. In alternative embodiments, hard-wired circuitry may be used in place of or in combination with software instructions. Thus, embodiments are not limited to any specific combination of hardware circuitry and software.

[**0088**] As stated above, the computer system **1701** includes at least one computer readable medium or memory for holding instructions programmed according to the teachings of the invention and for containing data structures, tables, records, or other data described herein. Examples of computer readable media are compact discs, hard disks, floppy disks, tape, magneto-optical disks, PROMs (EPROM, EEPROM, flash EPROM), DRAM, SRAM, SDRAM, or any other magnetic medium, compact discs (e.g., CD-ROM), or any other optical medium, punch cards, paper tape, or other physical medium with patterns of holes, a carrier wave (described below), or any other medium from which a computer can read.

[**0089**] Stored on any one or on a combination of computer readable media, the present invention includes software for controlling the computer system **1701**, for driving a device or devices for implementing the invention, and for enabling the computer system **1701** to interact with a human user (e.g., print production personnel). Such software may include, but is not limited to, device drivers, operating systems, development tools, and applications software. Such computer readable media further includes the computer program product of the present invention for performing all or a portion (e.g., locally portion of distributed processing) of the processing performed in implementing the invention.

[**0090**] The computer code devices of the present invention may be any interpretable or executable code mechanism, including but not limited to scripts, interpretable programs, dynamic link libraries (DLLs), Java classes, and complete executable programs. Moreover, parts of the processing of the present invention may be distributed or centralized for better performance, reliability, and/or cost.

[**0091**] The term "computer readable medium" as used herein refers to any medium that participates in providing instructions to the processor **1703** for execution. A computer readable medium may take many forms, including but not limited to, non-volatile media, volatile media, and transmission media. Non-volatile media includes, for example, optical, magnetic disks, flash memory, and magneto-optical disks, such as the hard disk **1707** or the removable media drive **1708**. Volatile media includes dynamic memory, such as the main memory **1704**. Transmission media includes coaxial cables, copper wire and fiber optics, including the wires that make up the bus **1702**. Transmission media also may also take the form of acoustic or light waves, such as those generated during radio wave and infrared data communications.

[**0092**] Various forms of computer readable media may be involved in carrying out one or more sequences of one or more instructions to processor **1703** for execution. For example, the instructions may initially be carried on a magnetic disk of a remote computer. The remote computer can load the instructions for implementing all or a portion of the present invention remotely into a dynamic memory and send the instructions over a telephone line using a modem. A modem local to the computer system **1701** may receive the data on the telephone line and use an infrared transmitter to convert the data to an infrared signal. An infrared detector coupled to the bus **1702** can receive the data carried in the infrared signal and place the data on the bus **1702**. The bus **1702** carries the data to the main memory **1704**, from which the processor **1703** retrieves and executes the instructions. The instructions received by the main memory **1704** may optionally be stored on storage device **1707** or **1708** either before or after execution by processor **1703**.

[**0093**] The computer system **1701** also includes a communication interface **1713** coupled to the bus **1702**. The communication interface **1713** provides a two-way data communication coupling to a network link **1714** that is connected to, for example, a local area network (LAN) **1015**, or to another communications network **1716** such as the Internet. For example, the communication interface **1713** may be a network interface card to attach to any packet switched LAN. As another example, the communication interface **1713** may be an asymmetrical digital subscriber line (ADSL) card, an integrated services digital network (ISDN) card or a modem to provide a data communication

connection to a corresponding type of communications line. Wireless links may also be implemented. In any such implementation, the communication interface **1713** sends and receives electrical, electromagnetic or optical signals that carry digital data streams representing various types of information.

[**0094**] The network link **1714** typically provides data communication through one or more networks to other data devices. For example, the network link **1714** may provide a connection to another computer through a local network **1715** (e.g., a LAN) or through equipment operated by a service provider, which provides communication services through a communications network **1716**. The local network **1714** and the communications network **1716** use, for example, electrical, electromagnetic, or optical signals that carry digital data streams, and the associated physical layer (e.g., CAT 5 cable, coaxial cable, optical fiber, etc). The signals through the various networks and the signals on the network link **1714** and through the communication interface **1713**, which carry the digital data to and from the computer system **1701** maybe implemented in baseband signals, or carrier wave based signals. The baseband signals convey the digital data as unmodulated electrical pulses that are descriptive of a stream of digital data bits, where the term "bits" is to be construed broadly to mean symbol, where each symbol conveys at least one or more information bits. The digital data may also be used to modulate a carrier wave, such as with amplitude, phase and/or frequency shift keyed signals that are propagated over a conductive media, or transmitted as electromagnetic waves through a propagation medium. Thus, the digital data may be sent as unmodulated baseband data through a "wired" communication channel and/or sent within a predetermined frequency band, different than baseband, by modulating a carrier wave. The computer system **1701** can transmit and receive data, including program code, through the network(s) **1715** and **1716**, the network link **1714** and the communication interface **1713**. Moreover, the network link **1714** may provide a connection through a LAN **1715** to a mobile device **1717** such as a personal digital assistant (PDA) laptop computer, or cellular telephone. Another embodiment of the present invention includes an alert advertisement creation engine configured to dynamically create interactive online advertisements to display alert information based on the weather targeting engine.

[**0095**] The advertisement creation engine may include a web interface tool configured to define advertising campaigns, their associated source of alerts, the copy for the design of the advertisement, and the executable hyperlink leading to the URL for the campaign.

[**0096**] The alert information feeds may include, but are not limited to, CAP (common alerting protocol), National Weather Service, AWS Smart Notification alerts, and Ad-hoc messages generated and sent to consumers who fit the campaign's alerting criteria.

[**0097**] This web interface tool may integrate with a weather targeting engine, and enable, disable, or modify advertising campaigns as the advertising campaigns' alert targeting criteria are compared to the alert feeds assigned to the advertising campaigns.

[**0098**] In an embodiment of the present invention, the alert advertisement creation engine may create advertisements sized 300 pixels wide by 250 pixels high. FIG. **14** is an example of how an advertisement may be designed. The header of the advertisement may display information about the alert type, and may include approximately 33 or fewer characters at 14 point. The body of the advertisement may display full details of the alert message, to be approximately 300 pixels wide by 130 pixels high. The content in this section may include any dynamic content—text, graphics, audio, video, etc. The false alert disclaimer may include copy that includes a legal disclaimer regarding false alerts, or any other information. The false alert disclaimer section may include copy that takes up no more than approximately 300 pixels wide by 35 pixels high. The sponsor area may include text that says, "Brought to you by:" and branding for the sponsor for the alert advertisement. This section may be no larger than approximately 300 pixels wide by 60 pixels high. This section may include sponsor imagery.

[**0099**] Embodiments of the advertisement may be an executable HTML hyperlink, wherein the URL is defined in the advertisement's campaign set up process.

[**0100**] Numerous modifications and variations of the present invention are possible in light of the above teachings. It is therefore to be understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described herein.

1. A method of presenting content, comprising steps of:

determining a location associated with a user;

receiving notice of a dynamic content alert (DCA);

creating an advertisement that includes real-time information related to the dynamic content being within a predetermined range of the location associated with the user; and

presenting the advertisement to the user.

2. The method of claim 1, further comprising:

issuing an order to insert a real-time alert message into the advertisement in response to the notice if the location of the user is within the predetermined range of the location.

3. The method of claim 1, wherein the environmental event relates to at least one of temperature, wind direction, wind speed, barometric pressure, hurricanes, tornadoes, thunderstorms, flooding, and rate of rain fall, NWS Alert, Amber Alert, DHS, DOT or FEMA Alert.

4. The method of claim 1, wherein the environmental event relates to traffic conditions, incidents and forecast.

5. The method of claim 1, wherein the environmental event occurs from 1 second to 15 minutes prior to receiving the notice.

6. The method of claim 1, wherein the environmental event occurs 1 second to 15 minutes prior to receiving the notice.

7. The method of claim 1, wherein the advertisement includes one or more of real-time temperature, real-time wind speed, real-time wind direction, real-time barometric pressure, and real-time rate of rain fall, NWS Alerts, Amber Alerts, DHS, DOT and FEMA Alerts, etc.

8. A method presenting content, comprising steps of:

obtaining dynamic real-time information when a predetermined condition is satisfied;

including the dynamic real-time information in an advertisement;

accessing a database that stores sponsor information in correspondence with a characteristic of the dynamic real-time information;

determining, based on information stored in the database, which sponsor corresponds with the dynamic real-time information;

including the sponsor in the advertisement; and

presenting the advertisement to a user.

9. The method of claim 8, wherein the dynamic real-time information is information related to sports, information related to a financial market, or information related to weather.

10. The method of claim 8, further comprising:

determining a location associated with the user; and

the step of obtaining includes obtaining dynamic real-time information associated with the location.

11. A system for presenting content, comprising:

means for determining a location associated with a user;

means for receiving notice of a dynamic content alert (DCA);

means for creating an advertisement that includes real-time information related to the dynamic content being within a predetermined range of the location associated with the user; and

means for presenting the advertisement to the user.

12. The system of claim 11, further comprising:

means for issuing an order to insert a real-time alert message into the advertisement in response to the notice if the location of the user is within the predetermined range of the location.

13. The system of claim 11, wherein the environmental event relates to at least one of temperature, wind direction, wind speed, barometric pressure, hurricanes, tornadoes, thunderstorms, flooding, and rate of rain fall, NWS Alert, Amber Alert, DHS, DOT or FEMA Alert.

14. The system of claim 11, wherein the environmental event relates to traffic conditions, incidents and forecast.

15. The system of claim 11, wherein the environmental event occurs from 1 second to 15 minutes prior to receiving the notice.

16. The system of claim 11, wherein the environmental event occurs 1 second to 15 minutes prior to receiving the notice.

17. The system of claim 11, wherein the advertisement includes one or more of real-time temperature, real-time wind speed, real-time wind direction, real-time barometric pressure, and real-time rate of rain fall, NWS Alerts, Amber Alerts, DHS, DOT and FEMA Alerts, etc.

18. A system for presenting content, comprising:

means for obtaining dynamic real-time information when a predetermined condition is satisfied;

means for including the dynamic real-time information in an advertisement;

means for accessing a database that stores sponsor information in correspondence with a characteristic of the dynamic real-time information;

means for determining, based on information stored in the database, which sponsor corresponds with the dynamic real-time information;

means for including the sponsor in the advertisement; and

means for presenting the advertisement to a user.

19. The system of claim 18, further comprising:

means for determining a location associated with the user; and

the means for obtaining obtains dynamic real-time information associated with the location.

20. A computer readable storage medium encoded with instructions, which when executed by a computer, causes the computer to implement a method of presenting content, comprising steps of:

determining a location associated with a user;

receiving notice of a dynamic content alert (DCA);

creating an advertisement that includes real-time information related to the dynamic content being within a predetermined range of the location associated with the user; and

presenting the advertisement to the user.

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