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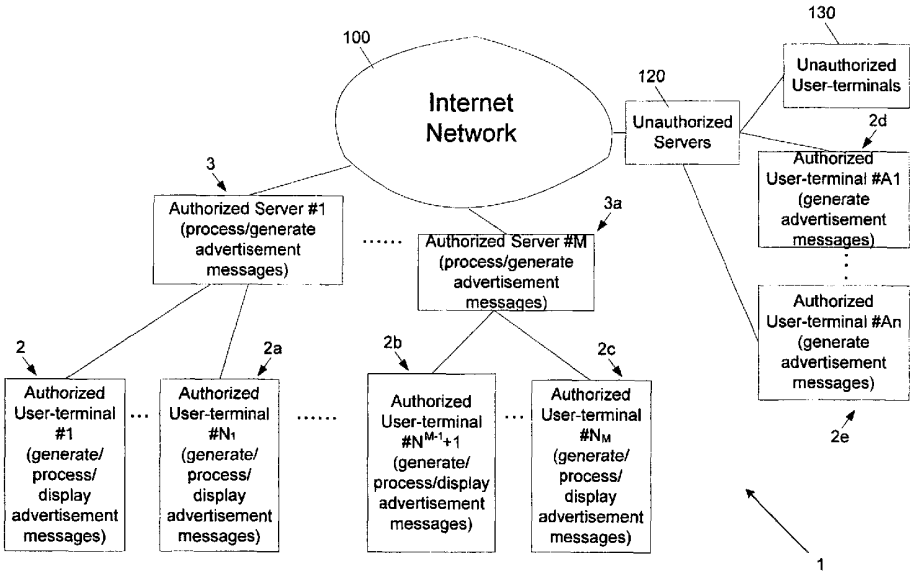
(54) Title: INTERNET/INTRANET SYSTEM WITH ADVERTISEMENT MANAGEMENT



(57) Abstract: An internet/intranet system with advertisement management (1). The invented internet/intranet system (1) has a plurality of user-terminals (clients) (2) with a terminal advertisement message processing unit to display/output repeatedly and momentarily advertisement messages generated by one of servers (3) or user-terminals (clients) (2), and has an advertisement management system classifying electronic-mail and messages into an authorized advertisement message class, an authorized private-message class and an unauthorized message class, and displaying/outputting the advertisement messages on user-terminals (such as computers or WebTV) (2) while the users of the user-terminals are surfing on any of the web-pages of the internet system, and has a configuration to prevent the user of the user-terminal (2) from shutting off the terminal advertisement message processing unit (4).

Internet/Intranet System with Advertisement Management

BACKGROUND OF THE INVENTION

This invention relates to an internet/intranet system with advertisement management, and accordingly to the manner of operation of an internet/intranet system with the invented advertisement management system installed.

It has long been a common practice for the postal mail system delivering soliciting paper-form advertisements, such as fliers, to customers' home. It is also a common practice for radio, TV and cable TV stations delivering advertisements to customers' radio or TV receivers.

A number of methods have been implemented to generate advertisement revenue for web-site owners.

One method is to design features into web-sites, which attract viewers to access the web-sites where advertisements are also displayed. For example, Yahoo!'s search-engine attracts a large number of web-surfers and generates a fair amount of advertisement revenue. However, this kind of advertisement is passive and has not been able to generate as much revenue as the conventional TV/cable-TV advertisement, even though it has been shown that consumers are spending a large number of hours on the inernet.

Another method is to broadcast the news together with advertisements to users' terminals in a way similar to the conventional TV/cable-TV (so-called "push technology"). However, most of internet users are not interested in the live news shown on the internet terminals at the current time. Most of internet users at the present time spend most of their time surfing among various web-pages and searching for information which is of each user's particular interest. Therefore this "push technology" is facing a lot of difficulties and has not attracted a lot of users.

Internet service providers rely on high service fees charged to their customers to compensate for their high equipment and maintenance cost and generate income since they do not have any effective advertisement methods to generate a large amount of advertisement revenue.

It is widely criticized that advertisements are delivered to users' electronic mail addresses through the free electronic mail system since the existing electronic mail advertisement has a major problem that the internet service providers have no cost-effective means to manage the electronic mail advertisement, and the internet users do not want to pay a high internet subscription fee while receiving unmanaged, low-quality and sometimes offensive advertisements.

An object of this invention is to design an internet/intranet system which provides an efficient, high-quality (comparable to the quality of TV and cable TV advertisement), low-cost and user-friendly way to manage advertisement messages and other electronic-mail messages, and therefore enables internet service providers to generate a large amount of advertisement revenue and provide low-cost or free internet services to consumers.

Another object of this invention is to design an internet/intranet system which has a plurality of user-terminals (clients, such as computers or WebTV) with a terminal advertisement message processing unit which automatically locates and identifies each of newly-arrival or unprocessed advertisement messages, displays/outputs the unprocessed advertisement message to an output (audio/video) terminal (such as a computer screen and a speaker) for a predetermined number of seconds and goes to a sleep mode, and restarts the cycle according to a predetermined schedule.

Another object of this invention is to design an internet/intranet system which has a plurality of servers with a server advertisement message processing unit which automatically locates and identifies each of newly-arrival or unprocessed advertisement messages, outputs the unprocessed

advertisement message to the user-terminal (client) for a predetermined number of seconds and goes to a sleep mode, and restarts the cycle according to a predetermined schedule.

Another object of this invention is to design an internet/intranet system which classifies electronic-mail and messages into an authorized advertisement-message class, an authorized private-message class and an unauthorized message class, and further classifies the authorized advertisement-message class into a general-audience class (G), a parent-guided audience class (PG), a restricted class (R) and an X-rated class (X), etc.

Another object of this invention is to design an internet/intranet system which displays/outputs the messages of different classes on the user-terminals (clients) in different fashions according to the messages' classes, while the users are surfing on the web using an internet browser, either inside the browser or outside the browser.

Another object of this invention is to design an internet/intranet system which automatically displays/outputs the full text, images and audio/video signal of the authorized advertisement-messages at a scheduled time-interval without any of the user's action, and displays only a notice of the number of the unauthorized messages and blocks the content of the unauthorized messages unless the user decides to download the unauthorized messages.

Another object of this invention is to design an internet/intranet system where the terminal advertisement message processing unit is linked to a user-terminal communication tranceiver (transmitter/receiver) such that the connection between the user-terminal and the server is terminated automatically once the terminal advertisement message processing unit is shut off by the user.

Another object of this invention is to design an internet/intranet system which counts the statistics of authorized advertisement messages for each advertiser, including the messages' size, classes and the time accessed by users, for accounting and billing purposes.

SUMMARY OF THE INVENTION

The goal of this invention is to design an internet/intranet system which provides an efficient, high-quality (comparable to the quality of TV and cable TV advertisement), low-cost and user-friendly way to manage advertisement messages and other electronic-mail and broadcasting

messages, and therefore enables internet service providers to generate a large amount of advertisement revenue and provide low-cost or free internet services to consumers.

The internet/intranet system in this invention comprises a plurality of authorized user-terminals (clients), a plurality of authorized servers, other unauthorized user-terminals and unauthorized servers, and a plurality of web-pages residing in the authorized user-terminals, authorized servers, unauthorized user-terminals and unauthorized servers.

The authorized user-terminals (clients) can generate either authorized advertisement messages or authorized private messages or both of the two messages, which are transmitted to a server connected to the user-terminal. An authorized server connected to the authorized user-terminal receives the messages from the authorized user-terminal and routes the received messages to their destinations through the internet/intranet network. The authorized advertisement messages can be also multiplexed directly into the authorized server without using the user-terminal. An unauthorized server may be connected to an authorized user-terminal and pass the advertisement messages like regular electronic-mail messages to other authorized user-terminals.

The authorized advertisement messages may be any text, image, audio or video data, or can be executable data such as Java byte-code or other binary executable code.

The authorized servers receives messages from the internet/intranet network, stores the received messages in a message storage device, such as a hard drive, and classifies the received messages into classes (advertisement, private, unauthorized classes) and sub-classes (such as G, PG, R, X classes) according to the data of a message class field in the message. If the received message is an authorized private message, then the authorized private message is sent to its destination user-terminal as long as the user-terminal is connected to the authorized server. If the received message is an authorized advertisement message, then the authorized advertisement message is processed by a server advertisement processing unit and sent to the appropriate destination user-terminal, as long as the user-terminal is connected to the authorized server. If the received message is an unauthorized message, then the received message is stored in the message storage and a notice of receiving an unauthorized message is sent to the user-terminal as long as the user-terminal is connected to the authorized server. The received messages are stored in the server and can be downloaded by the authorized user.

The user-terminal receives the messages from the authorized server, stores the messages in a storage device, such as a hard drive, and classifies the received messages into classes according to the data of a message class field in the message. The user-terminal has three ways to display/output the three message classes.

The authorized advertisement messages are processed and displayed/output by using a novel method dramatically different than the conventional web-page advertisement style or the TV-news broadcasting advertisement style. The user-terminal has a terminal advertisement message processing unit which comprises a software function and performs the processing/display/output of the authorized advertisement messages. The terminal advertisement message processing unit has to be always running as long as the user-terminal is connected to the authorized server. The terminal advertisement message processing unit first locates and identifies each of newly-arrival or unprocessed advertisement messages. If a newly-arrival or unprocessed advertisement message is located and identified, then the old advertisement message in a message storage device is deleted and the new or unprocessed advertisement message is loaded into the terminal advertisement message processing unit as the input data. If there is no newly-arrival or unprocessed advertisement messages in the user-terminal's storage device, then the old advertisement message is kept as the input data to the terminal advertisement message processing unit. In most of time the terminal advertisement message processing unit is put to sleep. After a delay of a predetermined number of minutes, the terminal advertisement message processing unit is waked up and run for a predetermined number of seconds with the selected advertisement message as its input data, then is put to sleep again. The above process is repeated at a time-interval of the predetermined number of minutes as long as the user-terminal is connected to the authorized server.

An alternative method to the above advertisement message processing is to design a server advertisement processing unit in the authorized server to implement the same functions as the terminal advertisement processing unit does.

The internet advertisement method disclosed above is novel and dramatically different than the existing internet web-page advertisement. In the existing internet web-page advertisement, a user has to direct his browser to the advertisement web-page in order for him to see the advertisements on the advertisement web-page. If the user directs his browser to other web-pages, then advertisements on the advertisement web-page cannot be seen by the user. The

advertisements are solely generated by the advertisement web-page which can be seen only if the browser is directed to the advertisement web-page. In contrast to the existing web-page advertisement, the novel internet advertisement system disclosed in this invention generates the advertisement messages at one (or more than one) server (or user-terminal) and can send the advertisement messages to any authorized user-terminals no matter where the user-terminals' browsers are directed.

The authorized private messages are displayed/output by using a private message processing unit in a fashion similar to the conventional electronic mail. The difference between the terminal advertisement message processing unit and the private message processing unit is that the user can launch or shut off the private message processing unit without affecting the connection between the authorized user-terminal and the authorized server while the terminal advertisement message processing unit has to be always running in order for the authorized user-terminal to be connected to the server.

The unauthorized messages from the unauthorized user-terminals are not displayed/output to the authorized user-terminal unless the user chooses to download the unauthorized messages. A short notice of the number of unauthorized messages is displayed together with the authorized private messages.

To avoid the terminal advertisement message processing unit being shut off by the user of the authorized user-terminal, one method is to combine the terminal advertisement message processing unit in the user-terminal together with a user-terminal communication tranceiver in such a way that shutting off the terminal advertisement message processing unit also shuts off the user-terminal communication tranceiver and disconnects the authorized user-terminal from the authorized server.

If the terminal advertisement message processing unit in the user-terminal is not combined together with the user-terminal communication tranceiver, in order to avoid the terminal advertisement message processing unit being shut off by the user, a detection-control computer program is used to detect whether the terminal advertisement message processing unit is running and disconnects the user-terminal from the authorized server if it is found that the terminal advertisement message processing unit is not running.

Alternatively, a user-running-status-code may be constantly generated by a user-software-running-status-code generator which is combined with the terminal advertisement message processing unit inside the user-terminal. The user-running-status-code is monitored by the server, and the connection between the user-terminal and the server is terminated once it is found that the terminal advertisement message processing unit has been shut off.

The latter two designs would allow existing browsers to work together with the new software program of this invention.

The server is also running a billing/accounting processing unit which counts the statistics of authorized advertisement messages for each advertiser, including the messages' size, classes and the time accessed by users, for accounting and billing purposes.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a schematic diagram illustrating one embodiment of an internet/intranet system comprising a plurality of authorized/unauthorized user-terminals (clients) and servers of the present invention.

Figure 2 illustrates one embodiment of the authorized user-terminal with a novel method of displaying/outputting advertisement messages and generating different classes of messages.

Figure 3 illustrates one embodiment of the authorized server with a novel method of processing messages of all classes and transmitting the messages to the authorized user-terminals in different fashions according to the different message classes.

Figure 4 illustrates a logic flow chart of the software function of the terminal advertisement message processing unit in the authorized user-terminal to implement the functions of processing, displaying and outputting the advertisement messages.

Figure 5 illustrates one configuration of a message comprising a message-class-field according to this invention.

Figure 6 illustrates one configuration of the user-terminal displaying/outputting the advertisement message while the user is using an internet browser.

Figure 6 illustrates an alternative configuration of the user-terminal displaying/outputting the advertisement message while the user is using an internet browser.

Figure 7 illustrates one configuration of the user-terminal displaying/outputting the private message and the notice of the number of unauthorized messages while the user is using an internet browser.

Figure 7a illustrates an alternative configuration of the user-terminal displaying/outputting the private message and the notice of the number of unauthorized messages while the user is using an internet browser.

Figure 8 illustrates a logic flow chart of the software function of the server advertisement message processing unit in the authorized server to implement the functions of processing and outputting the advertisement messages to the authorized user-terminals.

DETAILED DESCRIPTION

Referring to Figure 1, an internet/intranet system in this invention comprises a plurality of authorized user-terminals (clients) 2, 2a, 2b, 2c, 2d, 2e, etc., a plurality of authorized servers 3, 3a, etc., unauthorized user-terminals (clients) 130, unauthorized servers 120 and the internet network 100. The internet network 100 is a conventional network running existing internet standards. The authorized user-terminals 2, 2a, 2b, 2c etc., denoted by user-terminal #1, user-terminal #2, ..., user-terminal #N_M, are connected to the authorized servers 3, 3a etc., denoted by server #1, server #2, ..., server #M. In practice, these interconnected authorized servers and user-terminals may be owned/managed by one internet service provider. Authorized user-terminals 2d, 2e etc., denoted by user-terminal #A1, user-terminal #A2, ..., user-terminal #An, may be connected to the unauthorized servers 120, and can still communicate with the authorized servers and the authorized user-terminals connected to the authorized servers.

The authorized user-terminals #1, #2, ..., #N_M may be personal computers (PCs) or WebTV or any other electronic devices which can communicate with the internet, and can generate, process and display/output authorized private messages and/or authorized advertisement messages, and can send the messages to each other through the authorized servers #1, #2, ..., #M.

Each of the authorized servers #1, #2, ..., #M can generate and process authorized advertisement messages and send the messages to the authorized user-terminals #1, #2, ..., #N_M through itself and other authorized servers.

The authorized user-terminals #A1, #A2, ..., #An, connected to the unauthorized servers only, can generate and send authorized advertisement messages to the authorized user-terminals #1, #2, ..., #N_M through the authorized servers and the internet. The authorized user-terminals #A1, #A2, ..., #An may or may not be able to generate and send authorized private messages to the authorized user-terminals #1, #2, ..., #N_M, according to different designs of the internet/intranet network.

The unauthorized user-terminals 130 and the unauthorized servers 120 can generate and send only unauthorized messages to the authorized user-terminals #1, #2, ..., #N_M.

The authorized advertisement messages can be any text, image, audio or video data, or can be executable data such as Java byte-code or other binary executable code.

The internet/intranet system also comprises a plurality of web-pages residing in the authorized user-terminals #1, ..., #N_M, the authorized servers #1, ..., #M, the unauthorized user-terminals 130 and the unauthorized servers 120.

Referring to Figure 2, the authorized user-terminal 2 (and 2a, ..., 2e etc.) comprises an advertisement message generator 205 for the business version and a private message generator 210 in the transmitting direction, and comprises, in the receiving direction, a message storage device 235, a message classification unit 230, a terminal advertisement message processing unit 4, a private message processing unit 245, an unauthorized message processing unit 255 and an output (audio/video) terminal 260. In addition, the authorized user-terminal 2 comprises web-pages 250.

In the transmitting direction, the advertisement message generator 205 generates and sends authorized advertisement messages. The private message generator 210 generates and sends authorized private messages (the private electronic mail). The advertisement message generator 205 may not be enclosed with a consumer-version of the authorized user-terminal whose major purpose is to access the internet and be able to surf on the internet, send/receive the electronic mail and be the target customers of the advertisement messages. If an authorized user-terminal is

connected to an unauthorized server, the user-terminal may not be a consumer-version since it is not easy to control the advertisement display/output on the authorized user-terminal in this case.

A selector 215 selects either the authorized advertisement message generated by the advertisement message generator 205 or the authorized private message generated by the private message generator 210, and transmits the selected message to the servers 3, 3a or 120 through a user-terminal communication tranceiver (transmitter/receiver) 225.

In the receiving direction, the authorized user-terminal 2 (or 2a, ..., 2c) receives the messages from the authorized server 3 (or 3a), stores the messages in a message storage device 235 such as a hard drive. A message classification unit 230 classifies the received messages into classes according to the data of a message class field in the received message. The received messages of all the three classes are scheduled at 240, processed at the authorized private message processing unit 245, the terminal advertisement message processing unit 4 and the unauthorized message processing unit 255 respectively and output to the output (audio/video) terminal 260.

Referring to Figure 3, the authorized server 3 (and 3a) comprises a message storage device 320, a message classification unit 325, a message schedule/control unit 335, a server advertisement message processing unit 8, a user-connection controller 310, a billing/accounting processing unit 330 and an advertisement message generator 350. In addition, the server 3 comprises web-pages 340.

The advertisement message generated by the advertisement message generator 350 is multiplexed into the transmitting and receiving paths of the authorized server through multiplexers 355 and 360.

The messages received by the server-network communication tranceiver 315 are stored in a message storage device 320, such as a hard drive, and are classified by the message classification unit 325 into classes according to the data of a message class field in the message. Then the message schedule/control units 335 and the server advertisement message processing unit 8 implement the following processing functions according to the class of the received message. If the received message is an authorized private message, then the authorized private message is sent to its destination user-terminal as long as the user-terminal is connected to the authorized server. If the received message is an authorized advertisement message, then the authorized advertisement message is processed by the server advertisement message processing unit 8 and is

sent to the destination user-terminal, as long as the user-terminal is connected to the authorized server. If the received message is an unauthorized message, then the received message is stored in the message storage and a notice of receiving an unauthorized message is sent to the user-terminal as long as the user-terminal is connected to the authorized server. The received messages are stored in the server for a predetermined amount of time and can be downloaded by the authorized user.

The billing/accounting processing unit 330 counts the statistics of the authorized advertisement messages for each advertiser, including the messages' size, classes and the time accessed by users, for accounting and billing purposes.

The authorized advertisement messages are processed and displayed/output to the output (audio/video) terminal 260 by using a novel method dramatically different than the conventional web-page advertisement style or the TV-news broadcasting advertisement style. The user-terminal 2 (and 2a, …, 2c) comprises a terminal advertisement message processing unit 4 (in Figure 2) which performs the processing/display/output of the authorized advertisement messages. The terminal advertisement message processing unit 4 has to be always running as long as the authorized user-terminal 2 is connected to the authorized server 3.

Figure 4 illustrates a logic flow chart of the software function of the terminal advertisement message processing unit 4. At the initial step 4-0 a constant delay-interval of *t* minutes, a constant of *s* seconds are set, and the terminal advertisement message processing unit 4 is activated. Then at step 4-1 the terminal advertisement message processing unit 4 tries to locate any newly-arrival or unprocessed advertisement messages. At step 4-2 it is checked whether a newly-arrival or unprocessed advertisement message has been located/identified. If a newly-arrival or unprocessed advertisement message is located and identified, then at step 4-3 the old advertisement message in the message storage device 235 is deleted and the new or unprocessed advertisement message is loaded into the terminal advertisement message processing unit 4 as the input data. If there is no newly-arrival or unprocessed advertisement messages in the user-terminal's storage device, then at step 4-4 the old advertisement message is kept as the input data to the terminal advertisement message processing unit 4. At step 4-5 the terminal advertisement message processing unit 4 is waked up and outputs the selected advertisement message to the output (audio/video) terminal for *s* seconds, and is then put to sleep. After a delay of *t* minutes,

the above process is repeated as long as the user-terminal 2 is connected to the authorized server 3.

An alternative way to implement the authorized-advertisement-message processing functions handled by the terminal advertisement message processing unit 4 is to use a server advertisement message processing unit 8 (in Figure 3). Figure 8 illustrates a logic flow chart of the software function of the server advertisement message processing unit 8. At the initial step 8-0 a constant delay-interval of *t* minutes, a constant of *s* seconds are set, and the server advertisement message processing unit 8 is activated. Then at step 8-1 the server advertisement message processing unit 8 tries to locate any newly-arrival or unprocessed advertisement messages. At step 8-2 it is checked whether a newly-arrival or unprocessed advertisement message has been located/identified. If a newly-arrival or unprocessed advertisement message is located and identified, then at step 8-3 the new or unprocessed advertisement message is loaded into the server advertisement message processing unit 8 as the input data. If there is no newly-arrival or unprocessed advertisement messages in the message storage device 320, then at step 8-4 the old advertisement message is kept as the input data to the server advertisement message processing unit 8. At step 8-5 the server advertisement message processing unit 8 is waked up and outputs the selected authorized advertisement message to the authorized user-terminal for *s* seconds, and is then put to sleep. After a delay of *t* minutes, the above process is repeated as long as the user-terminal 2 is connected to the authorized server 3.

The internet advertisement method disclosed in this invention is novel and dramatically different than the existing internet web-page advertisement. In the existing internet web-page advertisement, a user has to direct his browser to the advertisement web-page in order for him to see the advertisements on the advertisement web-page. If the user directs his browser to other web-pages, then advertisements on the advertisement web-page cannot be seen by the user. The advertisements are solely generated by the advertisement web-page which can be seen only if the browser is directed to the advertisement web-page. In contrast to the existing web-page advertisement, the novel internet advertisement system disclosed in this invention generates the advertisement messages at one (or more than one) server (or user-terminal), for example at the server #1, and can send the advertisement messages to any authorized user-terminals, for example the authorized user-terminals #1, ..., #N_M, no matter where the user-terminals' browsers are directed. If an internet service provider has a large number of customers (user-terminals), then the advertisement method disclosed in this invention will be very effective and much more

powerful than the existing web-page advertisement, and will be able to generate a large amount of advertisement revenue to make it possible to provide a low-subscription-fee or free internet access service.

Figure 5 illustrates one configuration of a message. The message comprises a message class field 5-2, a message body 5-1 and other message fields 5-3. The message class field 5-2 indicates if the message is one of the three classes of messages: an authorized private message, an authorized advertisement message or an unauthorized message. An authorized advertisement message may be classified as several audience classes such as a general audience class (G), a parent guided audience class (PG), a restricted audience class (R) and an X-rated audience class (X).

Figure 6 illustrates one configuration of displaying/outputting the authorized advertisement messages, which is shown on a computer screen 610. The authorized advertisement message is displayed in a separate window 620 when the user is surfing on the internet using an internet browser 630. While the internet browser can be used by the user and can be running all the time as the authorized user-terminal is connected to the authorized server, the authorized advertisement message window 620 displays momentarily and repeatedly once every *t* minutes for only *s* seconds.

A special case of Figure 6 is that the advertisement window 620 and the computer screen 610 are merged together such that the authorized advertisement message display takes over the whole computer screen 610.

Figure 6a illustrates another configuration of displaying/outputting the authorized advertisement messages, which is shown on the computer screen 610. The authorized advertisement message is displayed in the same window as the internet browser 630. As long as the internet browser is used by the user and running, the authorized advertisement message interrupts the internet surfing and is displayed/output in the browser window 630 momentarily and repeatedly once every *t* minutes for *s* seconds, and then the original browser content is restored.

The authorized private messages are displayed/output by using a private message processing unit 245 in a fashion similar to the conventional electronic mail. The difference between the terminal advertisement message processing unit 4 and the private message processing unit 245 is that the user can launch or shut off the private message processing unit 245 without affecting the connection between the authorized user-terminal 2 and the authorized server 3 while the terminal

advertisement message processing unit 4 has to be always running in order for the authorized user-terminal 2 to be connected to the server 3.

The unauthorized messages are not displayed/output to the authorized user-terminals #1, ..., #N_M unless the users choose to download the unauthorized messages. A short notice of the number of unauthorized messages is displayed together with the authorized private messages.

Figure 7 illustrates a configuration of displaying/outputting the private messages and unauthorized messages on the computer screen 610. The authorized private messages are displayed in a window 720 like a regular electronic mail, a notice of the number of unauthorized messages and the instruction to delete or download the unauthorized messages are displayed in a small area at the bottom of the window 720, which is separate from the internet browser window 630.

Figure 7a illustrates another configuration of displaying/outputting the private messages and unauthorized messages on the computer screen 610. The authorized private messages and the unauthorized messages are displayed in the same window as the internet browser 630. While the authorized private messages are displayed like the regular electronic mail, only a notice of the number of unauthorized messages and the instruction to delete or download the unauthorized messages are displayed in a small area at the bottom of the window 630.

To avoid the terminal advertisement processing unit 4 in Figure 2 being shut off by the user of the authorized user-terminal 2, the method is to link the terminal advertisement message processing unit 4 in the user-terminal to the user-terminal communication tranceiver 225 in such a way that shutting off the terminal advertisement message processing unit 2 also shuts off the user-terminal communication tranceiver 225, disconnects the authorized user-terminal 2 from the authorized server 3, and disables the internet browser 265.

One way to link the terminal advertisement message processing unit 4 to the user-terminal communication tranceiver 225 is to combine the terminal advertisement message processing unit 4 and the user-terminal communication tranceiver 225 together into a single software program.

Another way to link the terminal advertisement message processing unit 4 to the user-terminal communication tranceiver 225 is to keep the terminal advertisement message processing unit 4 and the user-terminal communication tranceiver 225 as two separate software programs, and a detection-control computer program 270 detects whether the terminal advertisement message

processing unit 4 is running, and shuts off the user-terminal communication tranceiver 225 if it is found that the terminal advertisement message processing unit 4 is not running.

The third way to avoid the terminal advertisement message processing unit 4 in Figure 2 being shut off by the user of the authorized user-terminal 2 is to use a user-software-running-status-code generator 200 in Figure 2 which is combined with the terminal advertisement message processing unit 4 inside the user-terminal 2 and generates a user-running-status-code constantly. The user-running-status-code is monitored by 305 and a user-software-running-tatus-code detector 365 in the server 3, and the connection between the user-terminal 2 and the server 3 is terminated once it is found that the terminal advertisement message processing unit 4 has been shut off. The second and the third designs shown above would allow existing browsers to work together with the terminal advertisement message processing unit 4 in this invention.

The display/output length and time-interval of the advertisement messages can be controlled by the authorized servers sending display/output-length and time-interval commands to the terminal advertisement message processing unit 4. The terminal advertisement message processing unit 4 can also be put to sleep or waked up by the authorized servers sending sleep/wake-up commands to the advertisement message processing unit 4.

The operation of one embodiment of the invented internet/intranet system is as follows. When a user of an authorized user-terminal (client) is connected to an authorized server and surfing on the internet using his internet browser, an advertisement message interrupts his normal surfing and is output to his browser window/audio-video terminal (or a separate window on the same user-terminal) for a few seconds (for example 2 seconds), and then disappears automatically. Then the content of his browser is restored. This process repeats after several minutes delay (for example 8 minutes). The content of the advertisement messages is sent and controlled by authorized user-terminals and authorized servers. The display/output length and interval are controlled by authorized servers. Since the internet service providers can generate a large amount of advertisement revenue, the user will pay little subscription fee or get free subscription to the internet access service and would be willing to accept the advertisement messages.

While considerable emphasis has been herein on the preferred embodiment illustrated and described hereinabove, it will be appreciated that other embodiments of the invention can be made and that changes can be made in the preferred embodiment without departing from the principals of the present invention. Accordingly, it is to be distinctly understood that the

foregoing descriptive matter is to be interpreted merely as illustrative of the invention and not as a limitation.

What is claimed is:

1. An internet system comprising:

a plurality of authorized user-terminals;

a plurality of authorized servers;

a plurality of unauthorized user-terminals;

a plurality of unauthorized servers;

a plurality of web-pages residing in said authorized user-terminals, said authorized servers, said unauthorized user-terminals and said unauthorized servers;

an internet network which connects said authorized user-terminals, said authorized servers, said unauthorized user-terminals and said unauthorized servers;

wherein at least one of said authorized servers and said authorized user-terminals generates authorized advertisement messages, and each of said authorized user-terminals comprises:

(a) an output terminal,

(b) an internet browser,

(c) a user-terminal communication tranceiver receiving said authorized advertisement messages which are output to said output terminal repeatedly and momentarily while said internet browser is running and is used to surf on one of said web-pages.

2. The internet system as defined in claim 1 wherein:

each of said authorized user-terminals further comprises a terminal advertisement message processing unit comprising a computer software function implementing a process comprising the steps of:

2-0) picking one of said authorized advertisement messages as an output message, loading said output message into said terminal advertisement message processing unit, and activating said terminal advertisement message processing unit,

2-1) outputting said output message to said output terminal for a predetermined number of seconds,

2-2) putting said terminal advertisement message processing unit to sleep for a predetermined number of minutes,

2-3) waking up said terminal advertisement message processing unit,

2-4) locating and identifying an unprocessed advertisement message from said authorized advertisement messages,

2-5) checking whether said unprocessed advertisement message has been identified,

2-6) loading said unprocessed advertisement message into said terminal advertisement message processing unit as said output message if said unprocessed advertisement message is identified,

2-7) keeping said output message unchanged if said unprocessed advertisement message is not identified,

2-8) going back to step 2-1.

3. The internet system as defined in claim 1 wherein:

at least one of said authorized user-terminals and said authorized servers comprises an advertisement message generator which generates said authorized advertisement messages.

4. The internet system as defined in claim 1 wherein:

each of said authorized servers receives said authorized advertisement messages from said internet network and transmits said authorized advertisement messages to said authorized user-terminals connected to said authorized server.

5. The internet system as defined in claim 1 wherein:

at least one of said authorized servers receives said authorized advertisement messages from said authorized user-terminals connected to said authorized server and transmits said authorized advertisement messages to said internet network.

6. The internet system as defined in claim 1 wherein:

at least one of said authorized user-terminals further comprises a private message generator which generates authorized private messages;

each of said unauthorized user-terminals generates unauthorized messages.

7. The internet system as defined in claim 6 wherein:

each of said authorized servers comprises a message storage device which stores said authorized advertisement messages, said authorized private messages, and said unauthorized messages.

8. The internet system as defined in claim 1 wherein:

each of said authorized servers comprises a server advertisement message processing unit comprising a computer software function implementing a process comprising the steps of:

8-0) picking one of said authorized advertisement messages as an output message, loading said output message into said server advertisement message processing unit, and activating said server advertisement message processing unit,

8-1) outputting said output message to said output terminal for a predetermined number of seconds,

8-2) putting said server advertisement message processing unit to sleep for a predetermined number of minutes,

8-3) waking up said server advertisement message processing unit,

8-4) locating and identifying an unprocessed advertisement message from said authorized advertisement messages,

8-5) checking whether said unprocessed advertisement message has been identified,

8-6) loading said unprocessed advertisement message into said server advertisement message processing unit as said output message if said unprocessed advertisement message is identified,

8-7) keeping said output message unchanged if said unprocessed advertisement message is not identified,

8-8) going back to step 8-1.

9. The internet system as defined in claim 1 wherein:

said authorized advertisement messages are displayed in a window of said output terminal which is different than said internet browser.

10. The internet system as defined in claim 1 wherein:

said output terminal comprises a computer screen which is completely occupied by displaying said authorized advertisement messages.

11. The internet system as defined in claim 1 wherein:

said authorized advertisement messages are displayed in a window which is the same as said internet browser.

12. The internet system as defined in claim 6 wherein:

each of said authorized servers transmits a notice of the number of said unauthorized messages to said authorized user-terminals connected to said authorized server and blocks the content of said unauthorized messages;

each of said authorized user-terminals outputs said notice of the number of said unauthorized messages to said output terminal and does not automatically output the content of said unauthorized messages to said output terminal.

13. The internet system as defined in claim 6 wherein:

said authorized private messages and said unauthorized messages can be downloaded and deleted from said servers by said authorized user-terminals.

14. The internet system as defined in claim 1 wherein:

each of said authorized user-terminals further comprises a terminal advertisement message processing unit which is combined together with said user-terminal communication tranceiver such that disabling said terminal advertisement message processing unit also disconnects said user-terminal communication tranceiver from said authorized server.

15. The internet system as defined in claim 1 wherein:

each of said authorized user-terminals further comprises a terminal advertisement message processing unit and a detection-control computer program which detects whether said terminal advertisement message processing unit is running and disconnects said user-terminal communication tranceiver from said authorized server if it is found that said terminal advertisement message processing unit is not running.

16. The internet system as defined in claim 1 wherein:

each of said authorized user-terminals further comprises a terminal advertisement message processing unit and a user-software-running-status-code generator which is combined with said terminal advertisement message processing unit and generates a user-running-status-code constantly indicating whether said terminal advertisement message processing unit is running;

each of said authorized servers comprises:

a user-running-status-code detector which monitors said user-running-status-code,

a user-connection controller which disconnects said authorized user-terminal from said authorized server if said user-running-status-code is not detected for a predetermined amount of time.

17. The internet system as defined in claim 1 wherein:

each of said authorized servers comprises a billing-accounting processing unit for counting statistics of said authorized advertisement messages;

said statistics comprise the size of said authorized advertisement messages and the length of display-time of said authorized advertisement messages.

18. The internet system as defined in claim 2 wherein:

said predetermined number of seconds is controlled by said authorized servers sending an advertisement length command to said authorized user-terminals;

said predetermined number of minutes is controlled by said authorized servers sending an advertisement interval command to said authorized user-terminals.

19. The internet system as defined in claim 1 wherein:

each of said authorized user-terminals further comprises a terminal advertisement message processing unit which can be put to sleep by said authorized servers sending a sleep command;

said terminal advertisement message processing unit can be waked up by said authorized servers sending a wake-up command.

20. The internet system as defined in claim 1 wherein:

said advertisement messages are classified according to the content of said advertisement messages into audience classes.

21. The internet system as defined in claim 20 wherein:

said audience classes comprise a general audience class, a parent-guided audience class, a restricted audience class and an X-rated audience class;

22. The internet system as defined in claim 20 wherein:

each of said advertisement messages comprises a class field indicating that said advertisement messages are one of said audience classes.

23. The internet system as defined in claim 1 wherein:

said advertisement messages comprise at least one of text data, image data, audio data, and video data.

24. The internet system as defined in claim 1 wherein:

said advertisement messages comprise binary executable data.

25. The internet system as defined in claim 1 wherein:

said advertisement messages comprise byte-code executable data.

26. The internet system as defined in claim 1 wherein:

said output terminal comprise a video terminal.

27. The internet system as defined in claim 1 wherein:

said output terminal comprise an audio terminal.

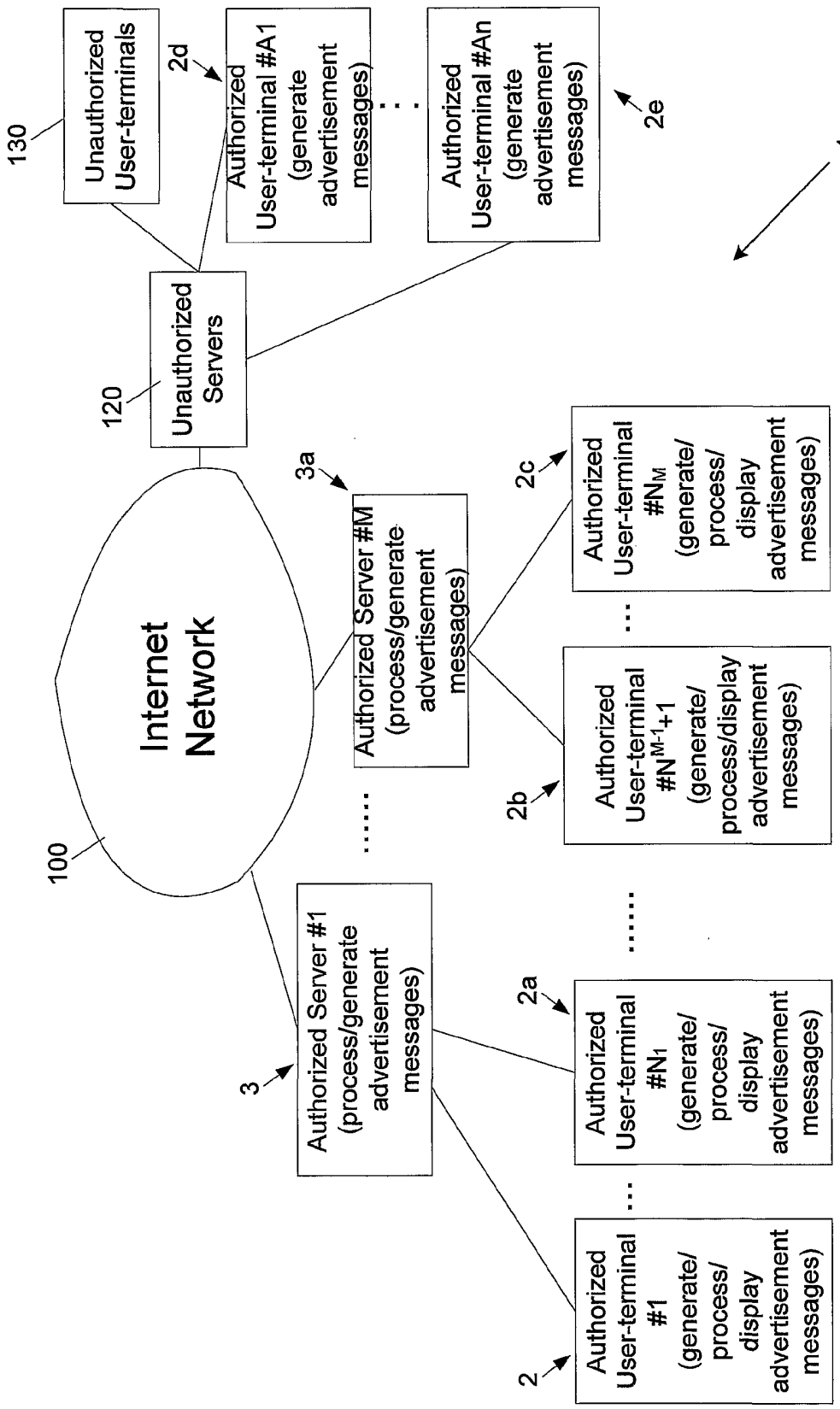

Unauthorized User-terminals
130
2d
Authorized User-terminal #A1 (generate advertisement messages)
Authorized User-terminal #An (generate advertisement messages)
2e
1
Unauthorized Servers
120
Internet Network
100
3a
Authorized Server #M (process/generate advertisement messages)
2c
Authorized User-terminal #N_M (generate/ process/ display advertisement messages)
2b
Authorized User-terminal #N^M-1+1 (generate/ process/display advertisement messages)
3
Authorized Server #1 (process/generate advertisement messages)
2a
Authorized User-terminal #N1 (generate/ process/ display advertisement messages)
2
Authorized User-terminal #1 (generate/ process/ display advertisement messages)

Figure 1

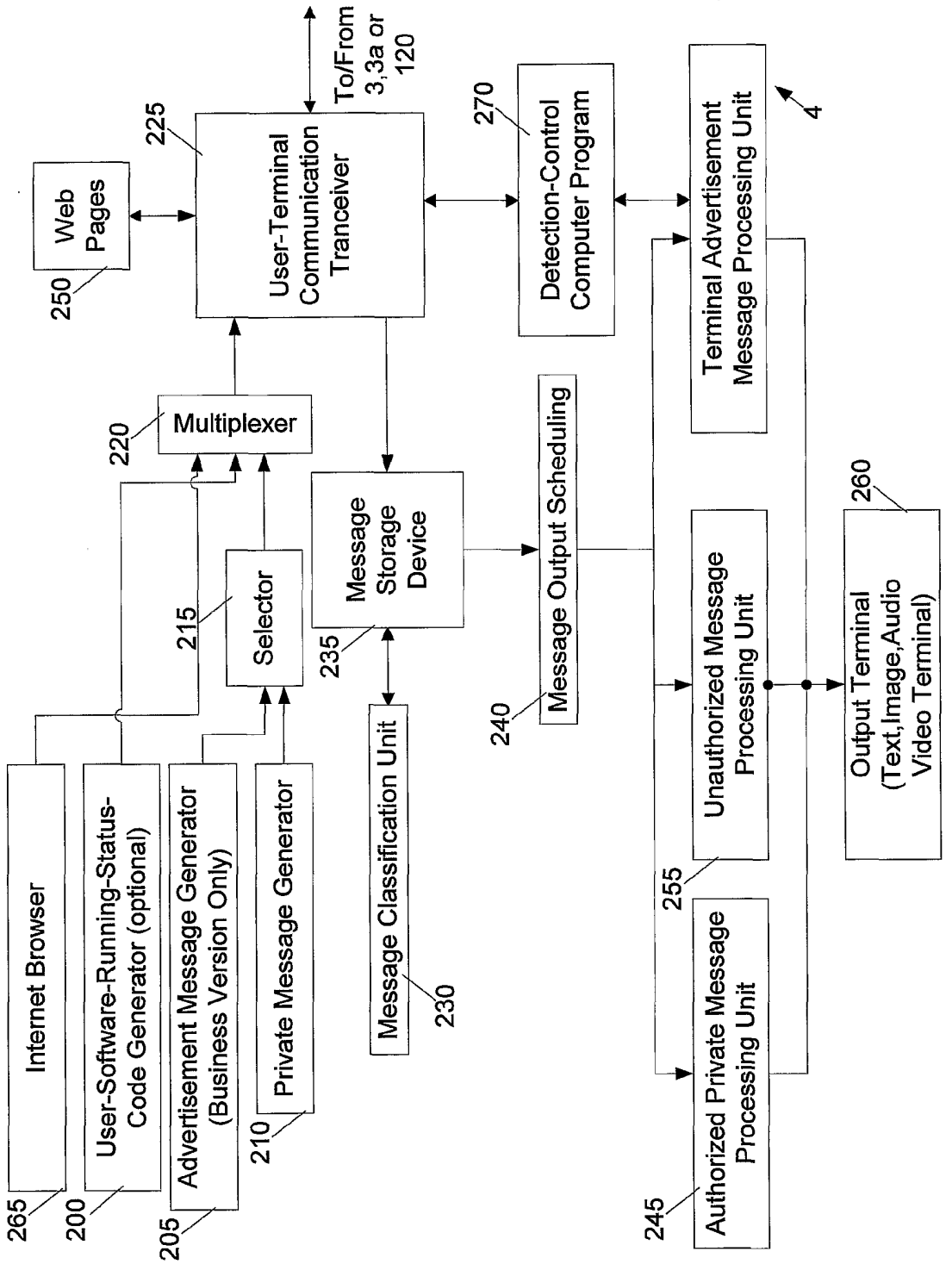

Internet Browser
265
User-Software-Running-Status-Code Generator (optional)
200
Advertisement Message Generator (Business Version Only)
205
Private Message Generator
210
Selector
215
Multiplexer
220
Web Pages
250
User-Terminal Communication Tranceiver
225
To/From 3,3a or 120
Message Classification Unit
230
Message Storage Device
235
Message Output Scheduling
240
Detection-Control Computer Program
270
Terminal Advertisement Message Processing Unit
4
Unauthorized Message Processing Unit
255
Authorized Private Message Processing Unit
245
Output Terminal (Text,Image,Audio Video Terminal)
260

Figure 2

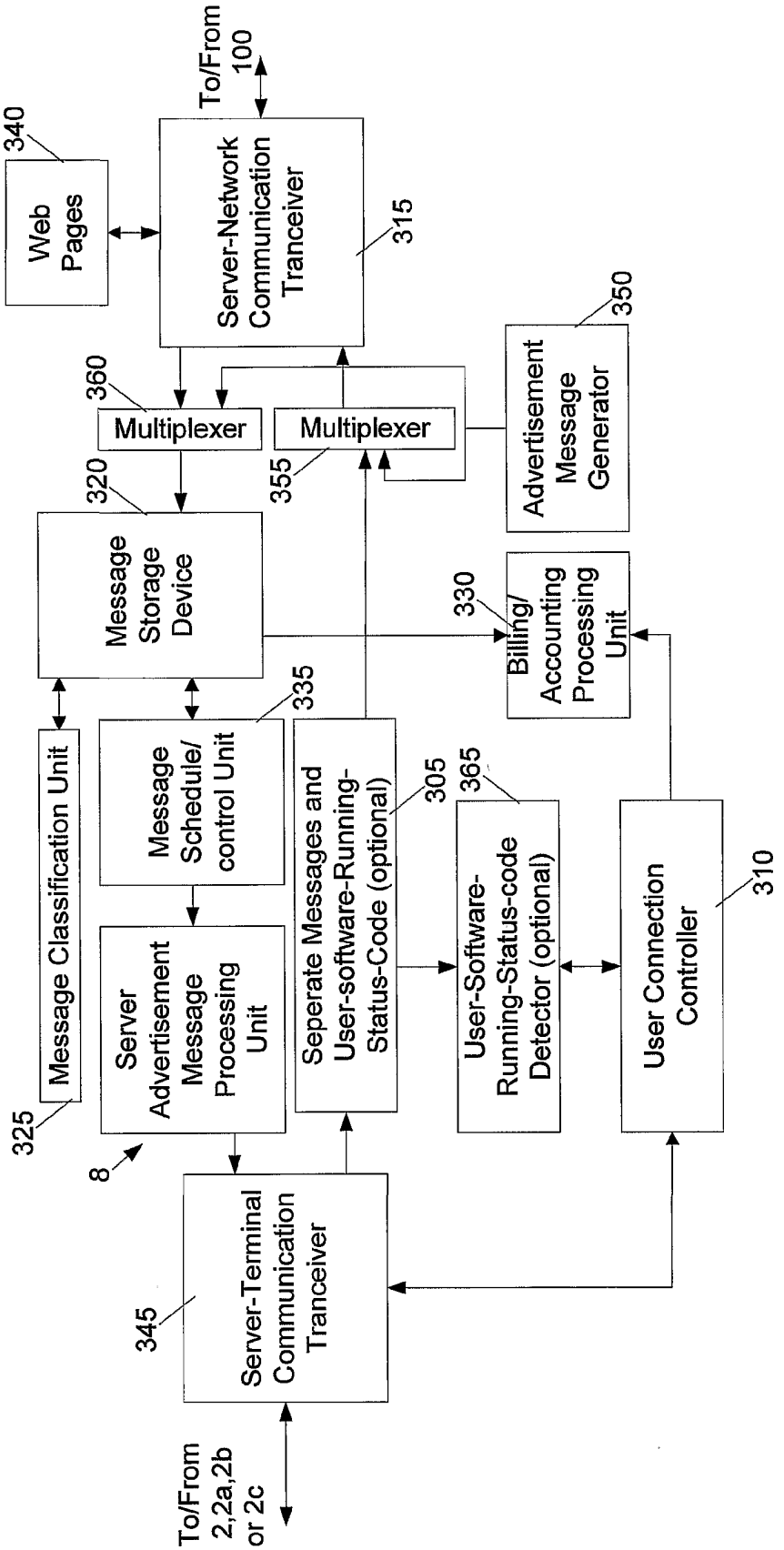

To/From 100
340
Web Pages
Server-Network Communication Tranceiver
315
360
Multiplexer
Multiplexer
355
320
Message Storage Device
Advertisement Message Generator
350
330
Billing/ Accounting Processing Unit
335
Message Schedule/ control Unit
Message Classification Unit
325
Server Advertisement Message Processing Unit
8
Seperate Messages and User-software-Running-Status-Code (optional)
305
365
User-Software-Running-Status-code Detector (optional)
User Connection Controller
310
345
Server-Terminal Communication Tranceiver
To/From 2,2a,2b or 2c

Figure 3

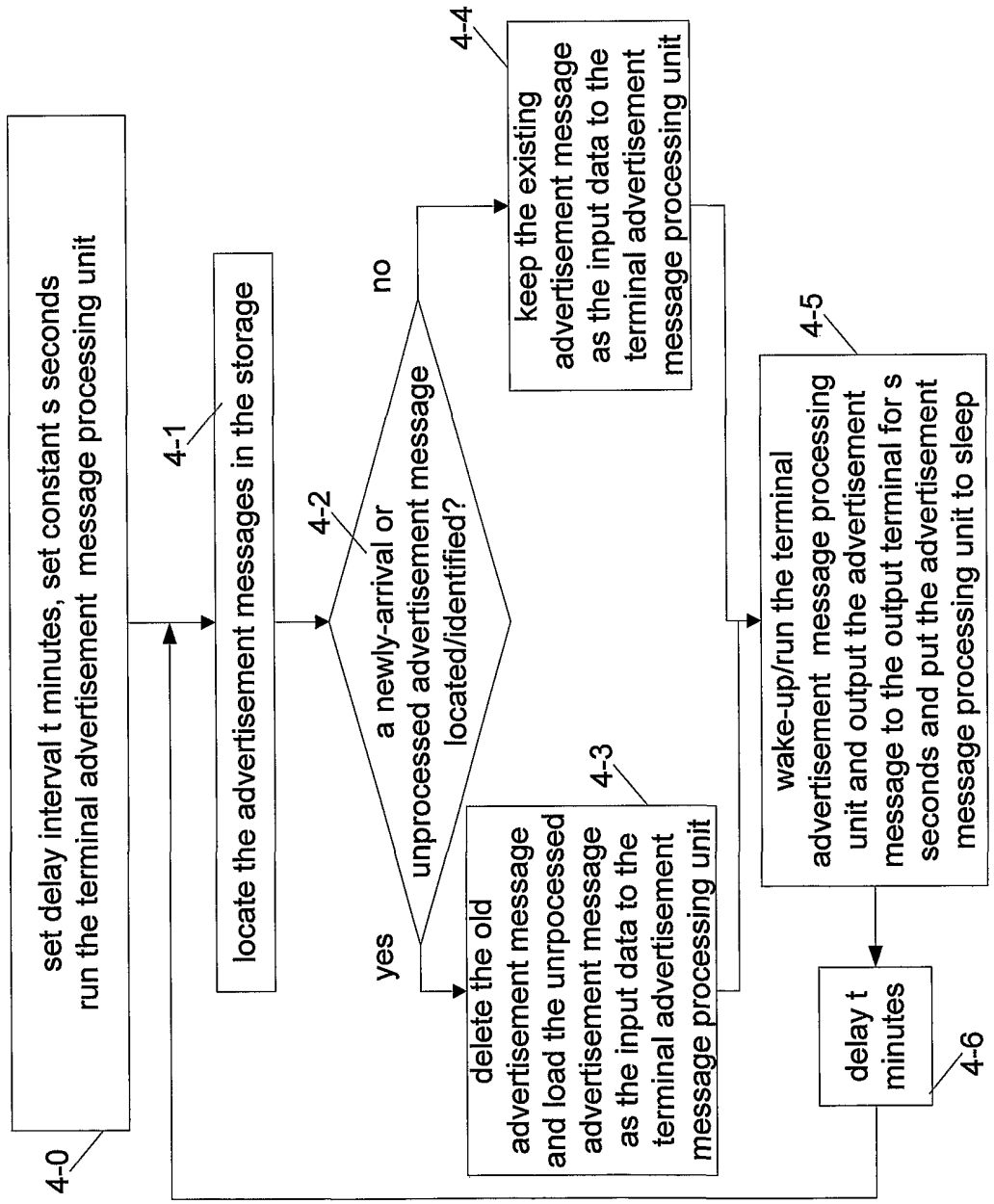

set delay interval t minutes, set constant s seconds
run the terminal advertisement message processing unit
4-0
locate the advertisement messages in the storage
4-1
a newly-arrival or unprocessed advertisement message located/identified?
4-2
yes
no
delete the old advertisement message and load the unrpocessed advertisement message as the input data to the terminal advertisement message processing unit
4-3
keep the existing advertisement message as the input data to the terminal advertisement message processing unit
4-4
wake-up/run the terminal advertisement message processing unit and output the advertisement message to the output terminal for s seconds and put the advertisement message processing unit to sleep
4-5
delay t minutes
4-6

Figure 4

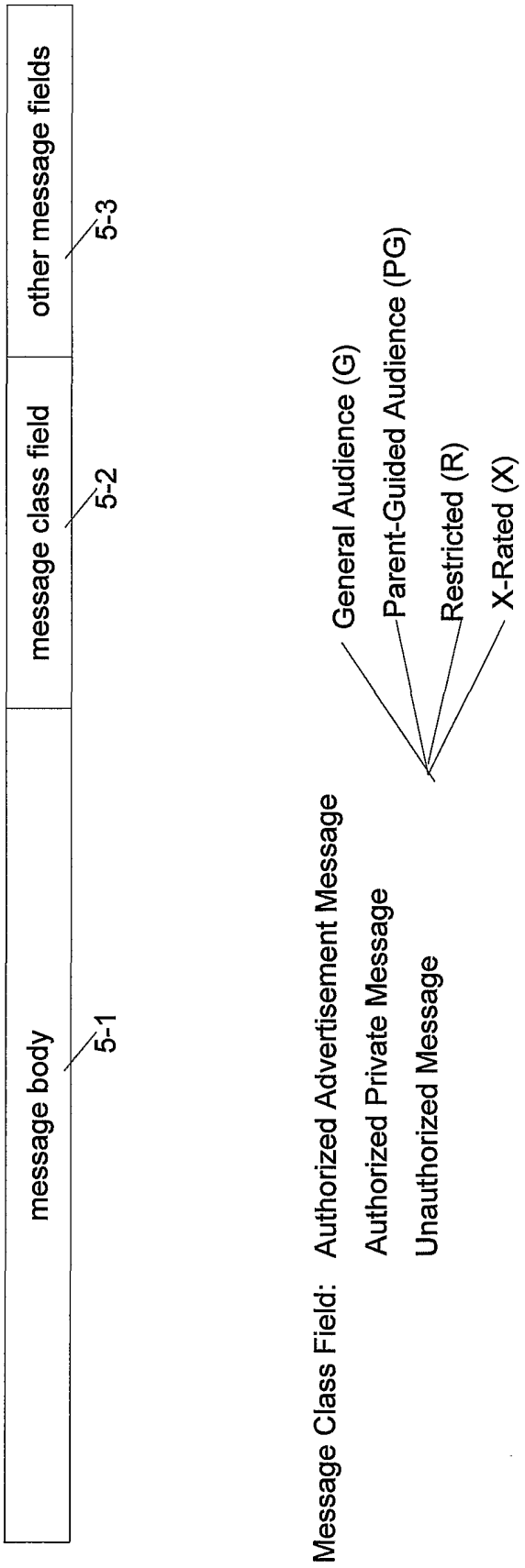

message body
message class field
other message fields
5-1
5-2
5-3
Message Class Field:
Authorized Advertisement Message
Authorized Private Message
Unauthorized Message
General Audience (G)
Parent-Guided Audience (PG)
Restricted (R)
X-Rated (X)

Figure 5

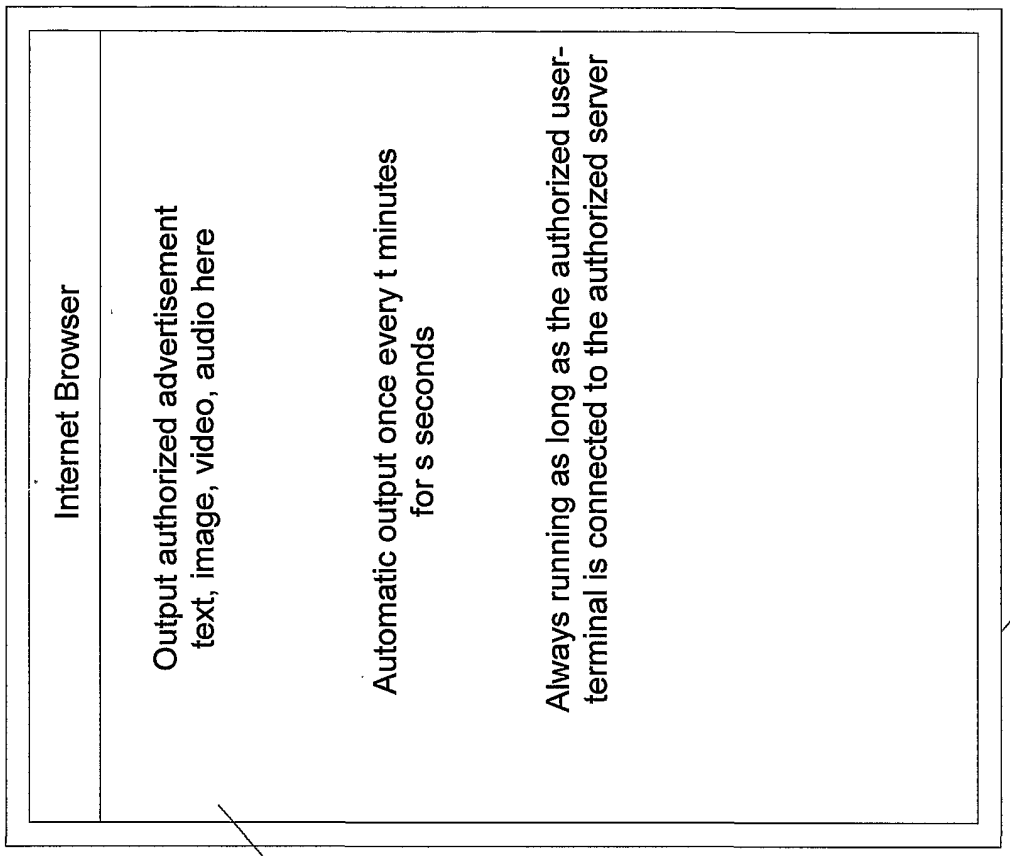


Figure 6a

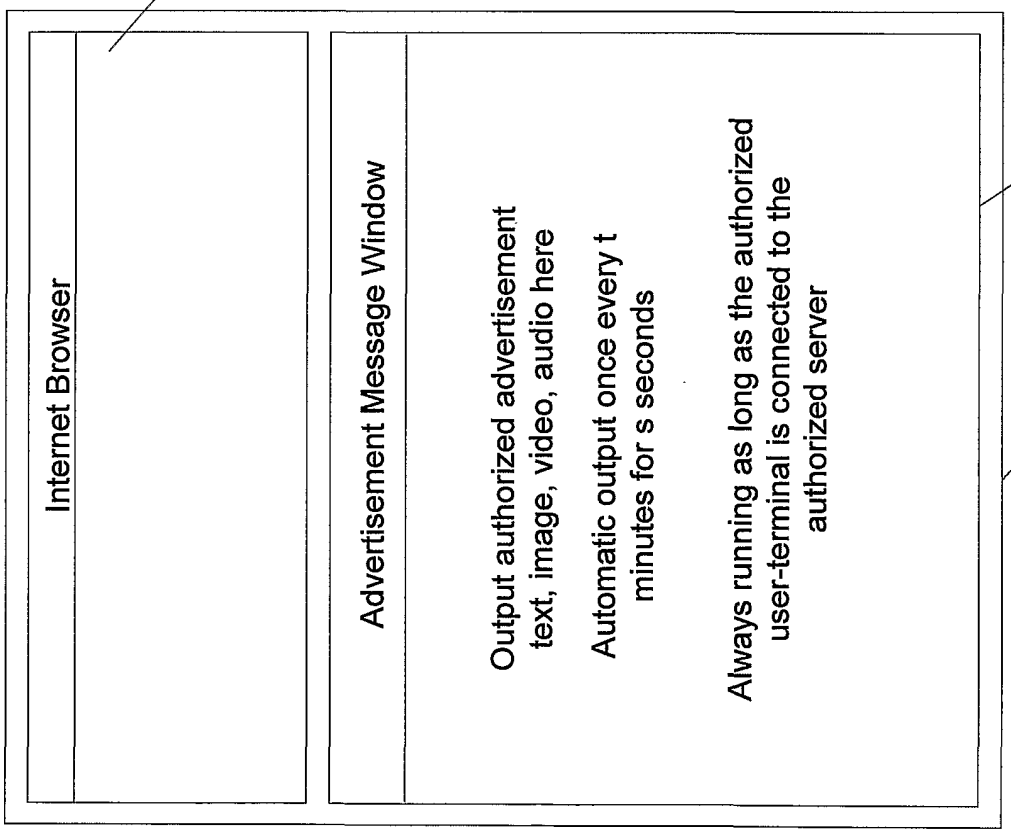


Figure 6

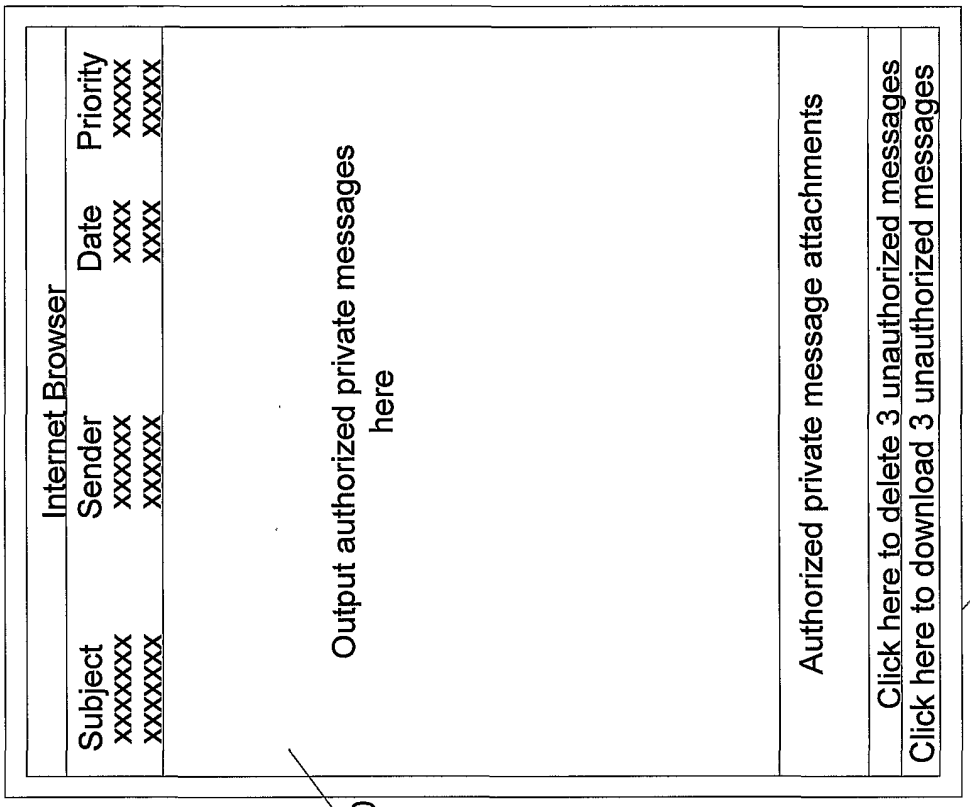


Figure 7a

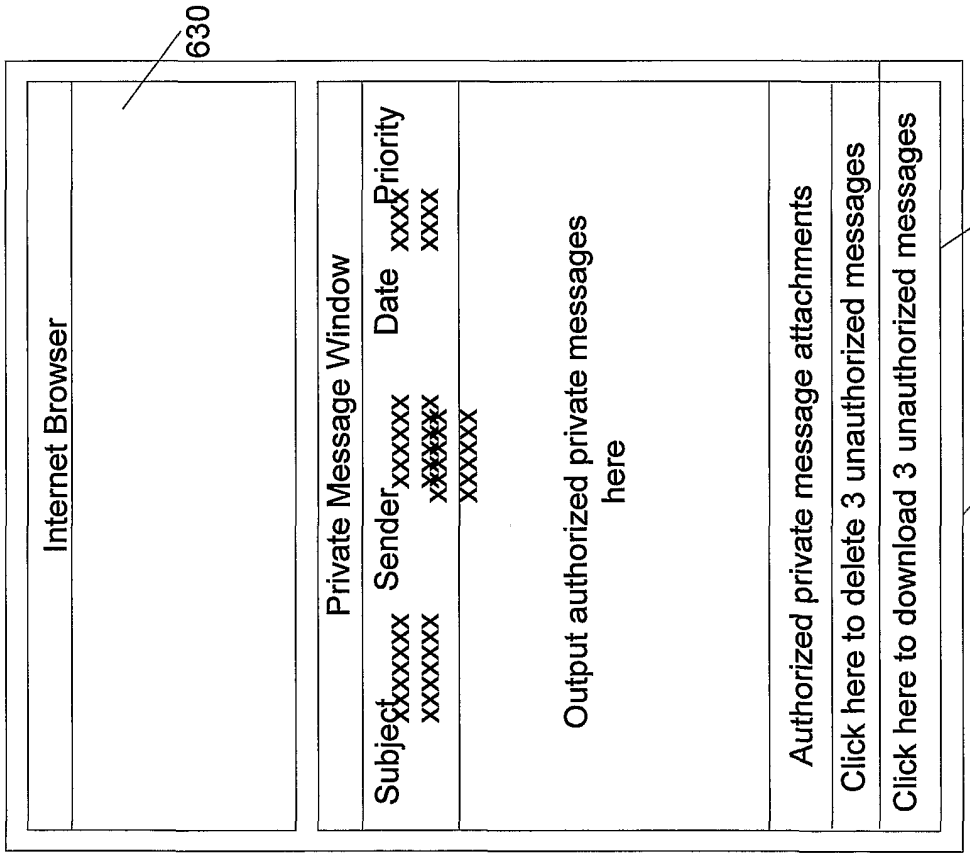


Figure 7

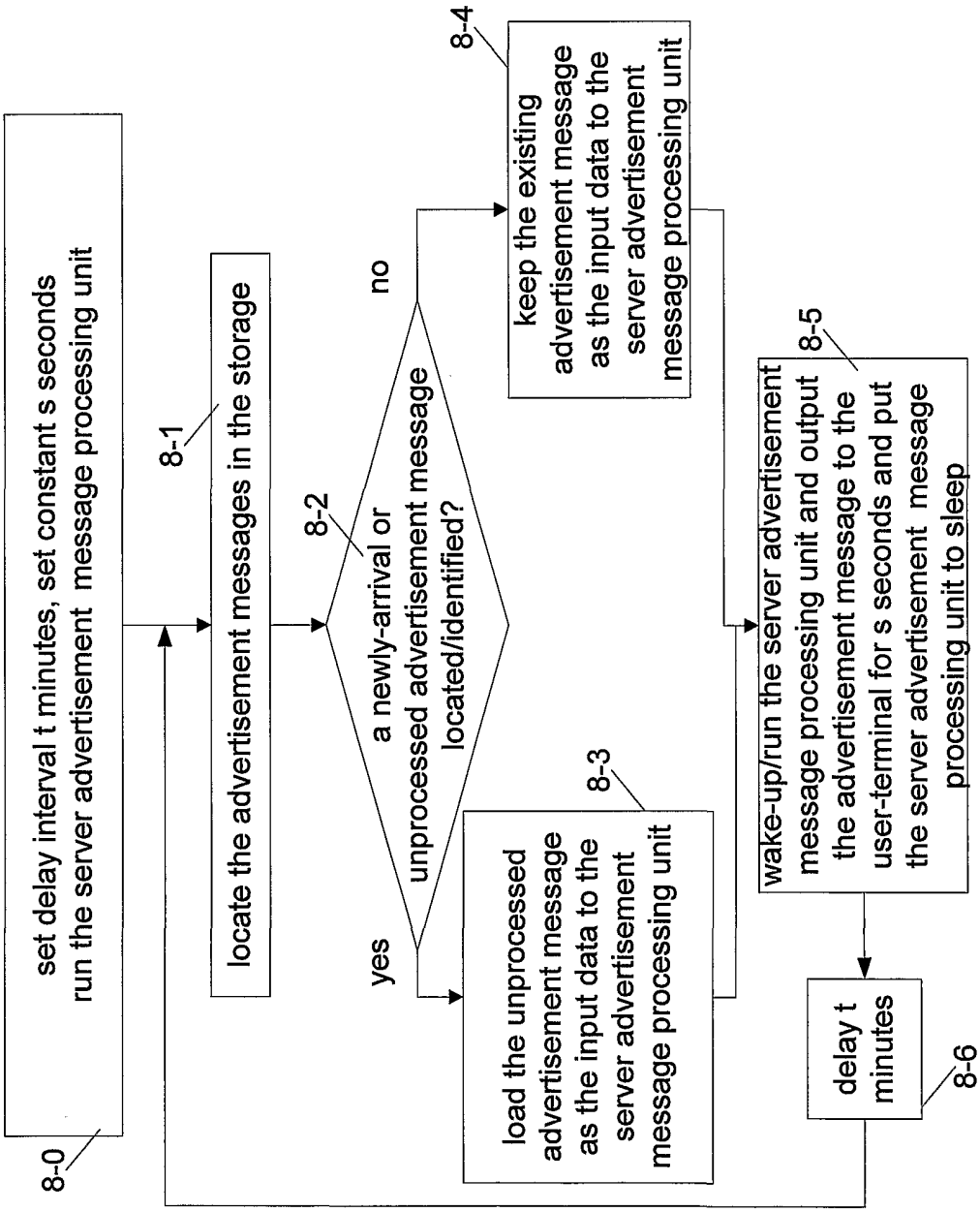

set delay interval t minutes, set constant s seconds run the server advertisement message processing unit
8-0
locate the advertisement messages in the storage
8-1
a newly-arrival or unprocessed advertisement message located/identified?
8-2
yes
no
load the unprocessed advertisement message as the input data to the server advertisement message processing unit
8-3
keep the existing advertisement message as the input data to the server advertisement message processing unit
8-4
wake-up/run the server advertisement message processing unit and output the advertisement message to the user-terminal for s seconds and put the server advertisement message processing unit to sleep
8-5
delay t minutes
8-6

Figure 8

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/11481

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G06F 13/00
US CL : 709/206, 219, 224

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 709/206, 217, 219, 223, 224, 225, 229, 313, 318, 328, 329

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EAST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6,014,698 A (GRIFFITHS) 11 January 2000, cols 1-4.	1-27
Y	US 6,009,410 A (LEMOLE et al) 28 December 1999, cols 1-2.	1-27
A	US 5,948,061 A (MERRIMAN et al) 07 September 1999, ALL	1-27
Y	US 5,933,811 A (ANGLES et al) 03 August 1999, cols 1-4.	1-27
Y	US 5,913,040 A (RAKAVY et al) 15 June 1999, cols 1-3.	1-27
A	US 5,823,879 A (GOLDBERG et al) 20 October 1998, ALL	1-27

[X] Further documents are listed in the continuation of Box C. [ ] See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search	Date of mailing of the international search report
16 JUNE 2000	11 JUL 2000
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer VIET VU FOR Eugenia Zagar Telephone No. (703) 305-9600

Form PCT/ISA/210 (second sheet) (July 1998) ★

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/11481

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,740,549 A (REILLY et al) 14 April 1998, cols 1-3.	1-27