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(54) **MONITORING APPLICATION FOR  
AUTOMATICALLY REQUESTING CONTENT**

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Nov. 17, 2008, now Pat. No. 7,783,753, which is a  
continuation of application No. 10/884,772, filed on  
Jul. 1, 2004, now Pat. No. 7,454,498, which is a  
continuation of application No. 09/419,701, filed on  
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USPC ..... **709/224**; 709/219; 709/227; 709/228;  
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None  
See application file for complete search history.

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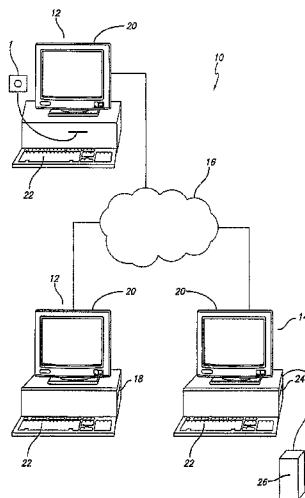
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*Primary Examiner* — Mohamed Ibrahim

(57) **ABSTRACT**

Embodiments of the instant invention are directed to a sys-  
tem, apparatus and method for monitoring a user's activities  
and displaying and presenting unsolicited content to users  
over a wide area network. Embodiments of the instant inven-  
tion include a monitoring system comprising an activity  
monitor and a content transfer and display means, wherein the  
activity monitor comprises an event identifier and a timer. The  
monitoring system monitors user activities, identifies trigger  
events, measures the elapsed time of inactivity of the user and  
initiates the presentation of unsolicited data, or content, to the  
user computer. In general, the monitoring system identifies  
trigger events and measures the elapsed time between trigger  
events. If the elapsed time between the trigger events exceeds  
a predefined time period the monitoring system causes unso-  
licited data to be presented on the user computer.

**20 Claims, 3 Drawing Sheets**



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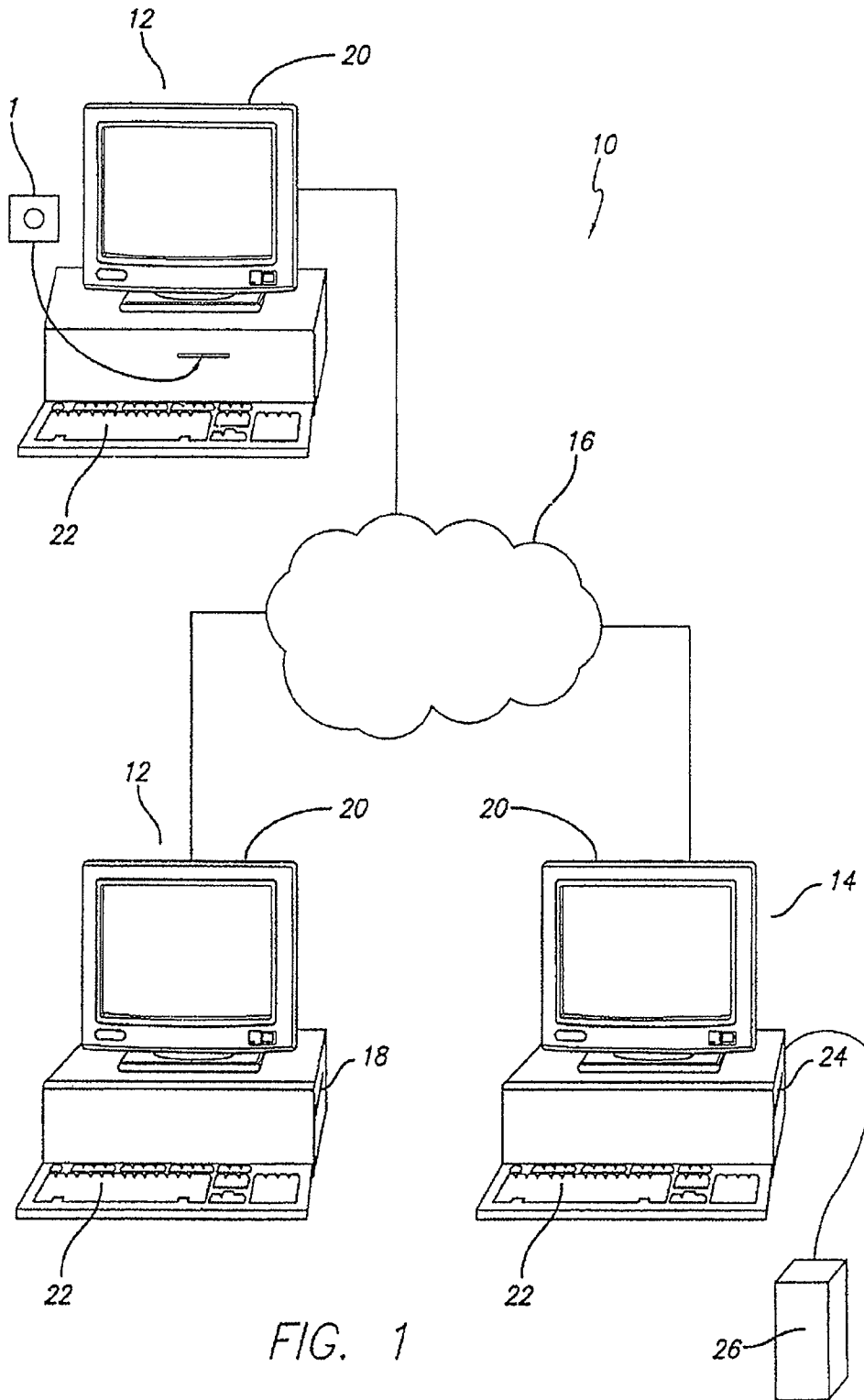


FIG. 1

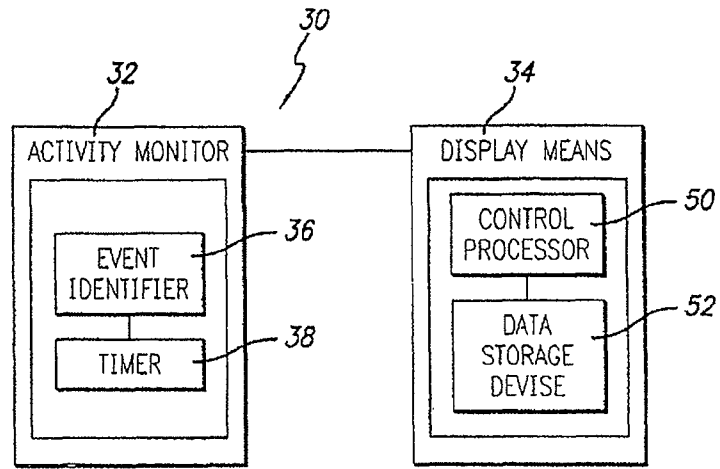


FIG. 2

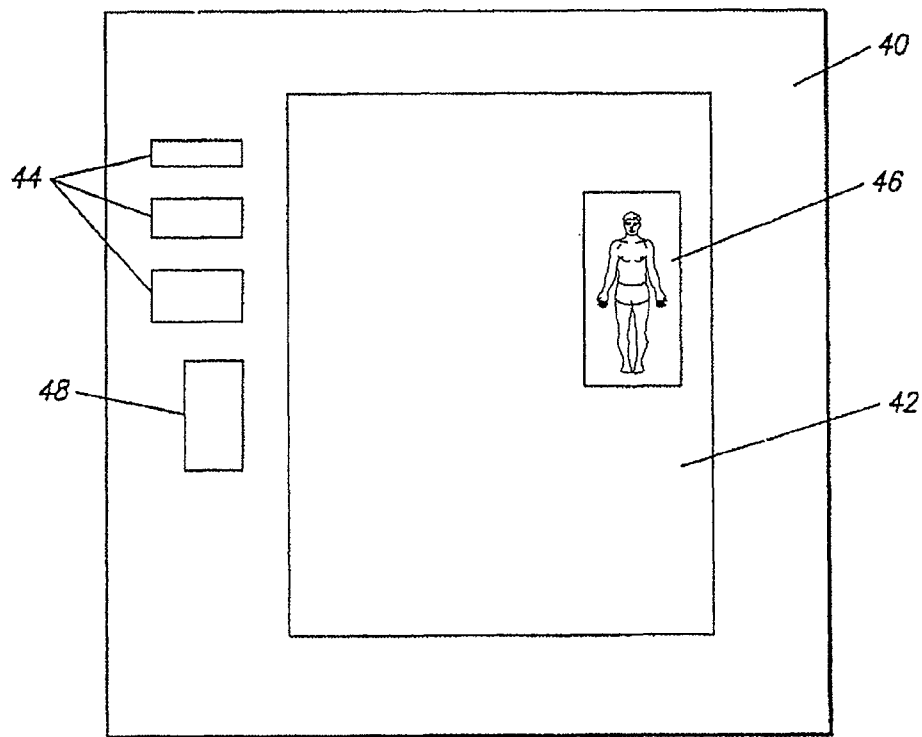


FIG. 3

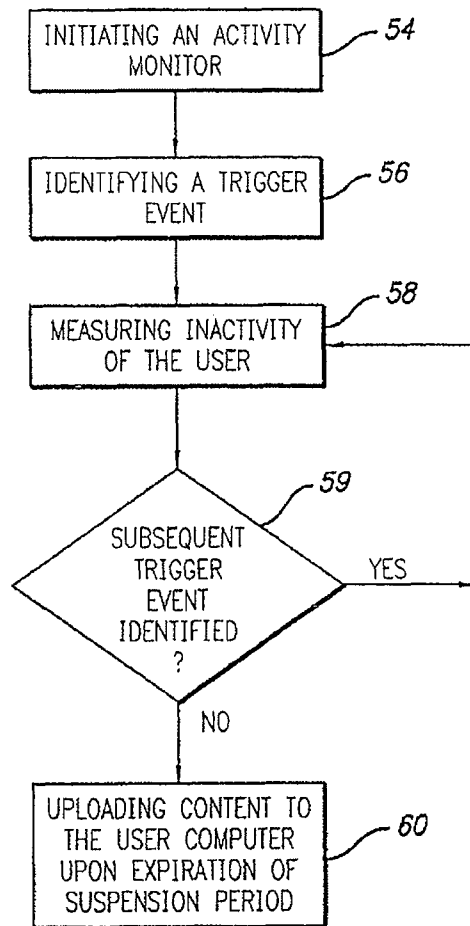


FIG. 4

## MONITORING APPLICATION FOR AUTOMATICALLY REQUESTING CONTENT

### RELATED APPLICATIONS

This application is a continuation of U.S. application Ser. No. 12/859,139 filed Aug. 18, 2010, now U.S. Pat. No. 8,015,285, which is a continuation of U.S. application Ser. No. 12/272,025 filed Nov. 17, 2008, now U.S. Pat. No. 7,783,753, which is a continuation of U.S. application Ser. No. 10/884,772 filed Jul. 1, 2004, now U.S. Pat. No. 7,454,498, which is a continuation of U.S. application Ser. No. 09/419,701 filed Oct. 14, 1999, now U.S. Pat. No. 6,763,379, which applications are fully incorporated herein by reference.

### FIELD OF THE INVENTION

This invention is directed to a system, apparatus and method for monitoring a user's activities, and displaying content to the users on a wide area network with minimal disruption in the user's activity. More specifically, embodiments of the invention direct and display content to users on inactive windows so as to reduce disruption of the user's activities.

### BACKGROUND OF THE INVENTION

Wide area networks, such as the World Wide Web ("WWW") or the Internet, have become increasingly popular modalities for the advertisement of products or to present unsolicited content to users. Indeed, much like broadcast medium, for example, radio and television, advertisers sponsor content in exchange for the right to present unsolicited content to users, such as, for example, an advertisement. Indeed, advertisers sponsor most of the content on the WWW. The sponsorship provided by the advertiser supports the host providers and facilitates free hosting for individual users.

In exchange for free content support, and therefore, free hosting of individual web sites, advertisers desire to display their advertisements as frequently as possible. Current advertising on the WWW is typically in the form of a small banner or a pop-up window. The banner advertisements are usually placed at the top or bottom of the page. The banner itself is usually insufficient in its advertising message to the consumer. As such, to review the banner advertisement, the user must click on the banner and load the advertisement.

The pop-up window is another form of advertisement. Pop-up advertisements open when a new browser window is opened, wherein the pop-up advertisement appears in front of the user's primary window. As with the banner advertisements, the user must click on the advertisement to view the advertisement.

As evinced above, current advertisement methods require some affirmative action on from the user. Further, current advertising methods are intrusive and interrupt the user's activities. Indeed, unlike broadcast medium, wherein the advertisements are placed in between the content of the main programming, advertisements on the WWW, which can be displayed at any time, are usually displayed over, or with, the content that the user is viewing, and require affirmative action by the user. As most users do not desire to be interrupted in their activities, most users avoid reviewing the advertisements. Indeed, some users avoid sites with highly intrusive advertisements.

A need in the industry exists for a modality of presenting unsolicited content to users wherein the user is not required to affirmatively respond to view the content. A further need

exists for a modality of displaying unsolicited content wherein the presentation of the content does not interrupt the user's activities, but rather occurs during a disruption in the user's review of desired content.

### SUMMARY OF THE INVENTION

Embodiments of the instant invention are directed to a system, apparatus and method for monitoring a user's activities and displaying and presenting unsolicited content to users, wherein the user is not required to affirmatively respond in order to review the content. Further, embodiments of the instant invention are directed to a method for presenting unsolicited content such that the presentation of the content does not disrupt the user's review of other content that the user has chosen to review.

Embodiments of the instant invention include a monitoring system **30** comprising an activity monitor **32** and a content transfer and display means **34**, wherein the activity monitor **30** comprises an event identifier **36** and a timer **38**. The monitoring system **30** monitors user activities, identifies trigger events, measures the elapsed time of inactivity of the user and initiates the presentation of unsolicited data, or content, to the user computer **12**. In general, the monitoring system **30** identifies trigger events and measures the elapsed time between trigger events. If the elapsed time between the trigger events exceeds a predefined time period the monitoring system **30** causes unsolicited data to be presented on the user computer **12**.

A feature of preferred embodiments of the invention is an activity monitor. An advantage to this feature is that the activity of the user can be monitored to determine whether the user has suspended his activities. A further advantage of this feature is that the user can be presented with unsolicited content during the period of suspended activities.

Another feature of preferred embodiments of this invention is that the unsolicited data is presented in its full format to the user. An advantage to this feature is that the user is not required to affirmatively access the data to review the data.

The above and other features and advantages of embodiments of this invention will be apparent from the following more detailed description when taken in conjunction with the accompanying drawings of illustrative embodiments.

### BRIEF DESCRIPTION OF THE DRAWINGS

The detailed description of embodiments of the invention will be made with reference to the accompanying drawings, wherein like numerals designate corresponding parts in the figures.

FIG. 1 is a network system environment in accordance with a preferred embodiment of the instant invention.

FIG. 2 is a schematic of a monitoring system in accordance with a preferred embodiment of the instant invention.

FIG. 3 is a representative browser window, wherein the browser window includes an open document and links for other documents, graphics and forms.

FIG. 4 is a block diagram of a preferred embodiment of displaying and presenting unsolicited content to a user computer.

### DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

Embodiments of the instant invention are directed to a system, apparatus and method for monitoring a user's activities and displaying and presenting unsolicited content to users

over a wide area network, wherein the presentation of the content is minimally disruptive of the user's activity and wherein the user is not required to affirmatively respond to view the content. Embodiments of the instant invention employ a network of computers and programs for presenting unsolicited content to users on the network.

#### Hardware Environment:

Preferred embodiments of the instant invention operate with a network comprising a plurality of networked computers, such as, for example, at least one user computer and at least one provider computer which are coupled together in a communications network, such as, for example, the Internet or WWW. FIG. 1 depicts a simplified representation of an example network system 10 that is operated in accordance with preferred embodiments of the invention.

The network system 10 includes at least one client or user computer 12 and at least one content provider or server computer 14 coupled for communication therebetween by the remainder of the network, generally represented at 16. In the illustrated embodiment, two client or user computers 12 and one content provider computer 14 are shown in the network system. It will be understood that further embodiments may employ any suitable number of user and provider computers. The network system 10 may comprise a closed or Intranet configuration, an open or public-access network configuration or combinations of such configurations, as is well known in the art. For example, the user and provider computers 12 and 14 may be included in smaller, interconnected networks which compose the overall network system 10. In an Internet embodiment, the network system 10 comprises a combination of a large number of interconnected internets and intranets. For purposes of simplifying the present disclosure, the various hardware components (for example, host servers, routers, connectors) and software necessary for communication between computers on the network system are not described herein in detail. Such hardware and software are well within the scope of one of ordinary skill in the art and are at least partially dependent upon the type of network system employed and the desired application of use.

The user computer 12 may comprise any suitable network device capable of communicating with other network devices in the network system. In preferred embodiments, the user computer comprises a programmable processor capable of operating in accordance with programs stored on one or more computer readable media 18 (for example, but not limited to floppy disc, hard disc, computer network, random access memory (RAM), CD Rom, or the like), a display device 20 for providing a user-perceivable display (for example, but not limited to visual displays, such as cathode ray tube CRT displays, light-emitting-diode LED or liquid-crystal-diode LCD displays, plasma displays or the like, audio displays or tactile displays), and a user input device 22 (for example, but not limited to, a keyboard, mouse, microphone, or the like). In one preferred embodiment, the user computer comprises a personal computer system having a CRT display, a keyboard and a mouse user-input device.

The user computer 12 is controlled by suitable software, including network communication and browser software to allow a user to request, receive and display information (or content) from or through a content provider computer 14 on the network system 10. In preferred embodiments, the user computer 12 employs a program, such as a browser, for displaying content received from a provider computer 14.

The content provider computer 14 may comprise any suitable network device capable of providing content (data representing text, hypertext, photographs, graphics video and/or audio) for communication over the network. In preferred

embodiments, the provider computer comprises a programmable processor capable of operating in accordance with programs stored on one or more computer readable media 24 (for example, but not limited to, floppy disks, hard disks, random access memory RAM, CD-ROM), to provide content for communication to a user computer 12. The provider computer 14 may comprise, for example, but not limited to, a personal computer, a mainframe computer, network computer, portable computer, personal data assistant (such as, a 3Com Palm Pilot), or the like. The provider computer 14 may include one or more internal data storage devices (not shown) for storing content for communication to a user computer 12. Alternatively, or in addition, the provider computer 14 may be coupled to an external data storage device, computer or other means, generally represented at 26, from which the provider computer 14 may obtain content for communication to a user computer 12. In one embodiment, the external device 26 may comprise a further network device coupled in the network 16. General Description of Preferred Embodiments

Embodiments of the instant invention utilize suspension time, or disruptions, in the user's review of content in a particular window or document. As is commonly understood, current computer operating systems are capable of performing multiple tasks simultaneously. For instance, users can open a browser, a word processor and their E-mail at the same time, thereby allowing the convenience of moving between these applications. Indeed, when users have completed reviewing the content in a particular application, for example, E-mail, many users simply move to another application without closing the application most recently reviewed. Thus, for example, a user might review a browser window on a web site and switch to review his E-mail. In this instance, review of the content on the browser window is temporarily, or permanently, suspended or interrupted due to the user's actions. Similarly, users may become distracted by other non-computer related activities and simply leave the browser window open while they engage in these other non-computer related activities. For instance, a user might answer the telephone or send a facsimile.

With reference to FIG. 2, embodiments of the instant invention are directed to a monitoring system 30 comprising an activity monitor 32 and a content transfer and display means 34, wherein the activity monitor 30 comprises an event identifier 36 and a timer 38. The monitoring system 30 monitors user activities, identifies trigger events, measures the elapsed time of inactivity of the user and initiates the presentation of unsolicited data, or content, to the user computer 12. In general, the monitoring system 30 identifies trigger events and measures the elapsed time between trigger events. If the elapsed time between the trigger events exceeds a predefined time period, or suspension period, the monitoring system 30 causes unsolicited data to be presented on the user computer 12. In one embodiment, the monitoring system 30 is written in JavaScript, although other programming languages, including, but not limited to, Java Active X is also suitable.

The activity monitor 32 is a software program that resides on the provider computer 14. To effectively operate however, the activity monitor 32 is copied to the user computer 12. As illustrated in FIG. 1, the user computer 12 can be coupled or networked to the provider computer 14 via the network 16. In preferred embodiments, the user requests content from the provider computer 14. The provider computer 14 responds to the user's request for content by transmitting, that is, downloading content data for one or more Hypertext Markup Language ("HTML") frames, corresponding to the user-requested content. In addition, the activity monitor 32 is also transmitted or downloaded, preferably with the content data.

Upon receipt of the content data and the activity monitor **32**, the user computer generates a display corresponding to the content data associated with the HTML frame. In addition, the activity monitor **32** is initiated on the user computer **12**. The monitoring software downloaded to the user computer includes executable code and commands that are designed to interact with the user's browser's software.

Upon the download of data to the user computer **12**, the activity monitor **32** is initiated, wherein all of the open applications, including, the browser window, documents, graphics and links are recognized by the activity monitor **32**. During the initiation of the monitoring software, the activity monitor **32** is effectively coupled to the open applications, including the content downloaded to the user computer **12** by the provider computer **14**.

With reference to FIG. 3, in preferred embodiments, the coupling of the activity monitor **32** occurs on a top down basis for the data. For instance, the activity monitor **32** is coupled to the window **40** initially loaded by the user. Then, the specific document **42** selected from the window **40** and all associated links **44**, graphics **46** and forms **48** of the document **42** are coupled to the activity monitor **32**. In this manner, the activity monitor **32** can monitor the activity of the user with respect to the browser window via the event identifier **34** and timer **36**.

Once the activity monitor **32** determines that the user has suspended his activity, as more fully described below, the content transfer and display means **34** downloads unsolicited data. The transfer and display of content across a set of networked computers is well known in the art. Thus, only a general description is provided herein. The content transfer and display means **34** comprises a processor (not shown) and a storage device, such as an internal storage device (not shown) or an external storage device **26** (see FIG. 1). The content transfer and display means **34** cooperates with the activity monitor **32** in the selection of the content and the time in which to download the content.

With reference to FIG. 4, an embodiment of a preferred method of presenting unsolicited data to the user computer **12** comprises initiating the activity monitor **54**, identifying a trigger event **56**, measuring inactivity of the user **58**, and uploading unsolicited content to the user computer **60**.

Once the activity monitor **32** is coupled to the top most form of data, for example, the window **40**, the monitor commences the process of identifying a trigger event **56**. In one embodiment, a trigger event is the upload of the window. Trigger events can be any events defined by the provider. In some embodiments, trigger events are events performed by a user that indicate activity by the user. For example, trigger events include, but are not limited to, filling in form elements; exiting the window, but not closing the window, commonly known as blur; clicking on the mouse; depressing a key on the keyboard; a mouse over; and resetting the window size. The trigger events can include, but are not limited to, any or all of the above listed events. As seen, the trigger events are typically events that demonstrate an activity by the user.

Once the activity monitor identifies a trigger event, the timer is cleared and reset. The timer is then initiated such that the timer begins to count, or measure elapsed time **58**. The timer measures the amount of elapsed time from the commencement of the timer and the next identified trigger event. If a subsequent trigger event is identified **59**, the timer is cleared, reset and recommenced. This process continues clearing and resetting the timer upon the detection of a trigger event until a predefined suspension time has expired, wherein the predefined suspension time is a measurement of the amount of time of inactivity of the user in the browser window.

Once the suspension time has elapsed, the browser window downloads unsolicited content **60** to the user computer. If the browser window has been maintained as the foremost window, that is, the user has not changed applications, but rather, the user has not interacted with the browser window for the duration of the suspension time, the browser window loads the unsolicited content on top of the browser window, such that the user is presented with the unsolicited data upon return to the computer activities. If instead, the browser window is no longer the foremost window because the user has changed applications, for example, is now viewing E-mail, the browser window downloads the unsolicited content into the hidden browser window such that the user is unaware of the changed content of the browser window until the user returns to the browser window. In some embodiments, the user has the option of returning to the previously viewed page by depressing a return button, although any other means of returning the user to a previously viewed window is suitable.

In another embodiment, the timer is cleared and reset whenever an application other than the browser window is the foremost window. In this instance, the predefined suspension time period is reduced as the browser window is now hidden and the downloading of content over the browser window would not interrupt the user's current activities.

In still another embodiment, unsolicited content is downloaded if the user types in a new address on the address bar, wherein the user is presented with unsolicited content prior to the display of the requested content. Similarly, unsolicited content is downloaded when the user pulls down the "Favorites" menu on the browser window. In both instances, the user is no longer viewing the current browser window, and thus, the downloading of unsolicited content is not interruptive of the content currently being viewed by the user.

In operation, a user connects with the network system **16** and ultimately couples to the provider computer **14**, wherein the user requests content. Upon the download of the content, the provider computer **14** further downloads an activity monitor **32**. The activity monitor **32** is initiated upon the download, and commences waiting for a predefined trigger event. In preferred embodiments, the first trigger event is the opening of the requested browser window.

Upon the detection of a trigger event, the timer **38** of the activity monitor **32** is cleared and reset. The timer **38** commences to measure the amount of time between trigger events. For example, the timer **38** measures the amount of time between the time the browser window is opened and a mouse over. If a trigger event occurs prior to the expiration of the suspension period, the timer is cleared, reset and restarted such that the timer **38** again begins measuring the time elapsed between trigger events. If instead, the suspension period elapses, the activity monitor **32** signals the content transfer and display means **34**, wherein the content transfer and display means **34** commences the downloading of unsolicited data over the browser window. When the user returns to the browser window, the user is presented with unsolicited data, such as, an advertisement. The user is presented with the option of reviewing the advertisement, returning to the browser window or exiting to a completely new window. However, the presentation of the advertisement is relatively unintrusive as the user's review of the browser window was not interrupted, but rather, the unsolicited content was downloaded when the user was engaged in activities other than reviewing the browser window.

Although the foregoing described the invention with embodiments having particular forms that have been illustrated and described, this is not intended to limit the invention. Rather, the foregoing is intended to cover all modifications



and alternative constructions falling within the spirit and scope of the invention as expressed in the appended claims.

What is claimed is:

1. A computing system, comprising:  
one or more processors;  
memory having program instructions stored therein,  
wherein the program instructions are executable by the one or more processors to:  
detect occurrence of a defined trigger event associated with displaying first data as web page content within a web browser of the computing system;  
initiate a request for second data in response to determining that an amount of time from the occurrence of the defined trigger event exceeds a defined threshold; and  
and  
cause display of the second data as web page content within the web browser, wherein the display of the second data partially occludes display of the first data on the electronic display of the computing system.
2. The computing system of claim 1, wherein the program instructions are further executable to:  
detect whether a window displaying the first data is an active window of the electronic display; and  
initiate a request for the second data in response to detecting that the window is no longer the active window.
3. The computing system of claim 2, wherein the program instructions are further executable to:  
cause the second data to be displayed within the window upon the window becoming the active window.
4. The computing system of claim 1, wherein ones of the program instructions correspond to an application embedded in the first data.
5. The computing system of claim 1, wherein the first data includes embedded code that is interpretable by the web browser to produce ones of the program instructions.
6. The computing system of claim 1, wherein the program instructions are further executable to select advertising content for display as the second data.
7. The computing system of claim 1, wherein the defined trigger event corresponds to receiving a command from a user input device.
8. A computing system, comprising:  
one or more processors;  
memory having program instructions stored therein,  
wherein the program instructions are executable by the one or more processors to:  
transmit first data and executable code to a client computing device, wherein the first data is renderable as web content within a web browser of the client computing device, and wherein the executable code is executable by the client computing device to detect a period during which no user input is received;  
receive a request for second data from the client computing device in response to detecting the period during which no user input is received; and  
transmit the second data to the client computing device responsive to the request, wherein the client computing device is configured to render the second data as

web content within a web browser such that display of the second data partially occludes display of the first data.

9. The computing system of claim 8, wherein the executable code is embedded within the first data.
10. The computing system of claim 9, wherein the executable code is further executable to cause the web browser to render the second data while a window of the web browser is not an active window of the electronic display.
11. The computing system of claim 8, wherein the executable code is further executable to:  
maintain a timer indicative of the period during which no user input is received; and  
based on the timer, initiate transmission of the request from the client computing device.
12. The computing system of claim 11, wherein the executable code is further executable to reset the timer in response to detecting a user input.
13. The computing system of claim 8, wherein the executable code is further executable to select advertising content, and wherein the second data corresponds to advertising content selected by the executable code.
14. A method, comprising:  
a client computer system displaying a first set of web page content within a web browser;  
the client computer system determining whether a trigger event has occurred within a given time interval;  
in response to determining that the trigger event has not occurred within the given time interval, the client computer system requesting a second set of web page content from a server system; and  
the client computer system displaying the second set of web page content within the web browser.
15. The method of claim 14, wherein the determining is performed by a monitoring program embedded in the first set of web page content.
16. The method of claim 15, wherein the monitoring program is embedded using a scripting language, wherein the scripting language is interpretable by the web browser to produce instructions executable by the client computer system.
17. The method of claim 15, wherein the monitoring program is executable to select advertising content, and wherein the second set of web page content includes advertising content selected by the monitoring program.
18. The method of claim 14, wherein displaying the second set of web page content partially occludes display of the first set of web page content.
19. The method of claim 14, further comprising:  
the client computer system detecting that a window of the web browser is not an active window on a display of the client computer system; and  
the client computer system requesting a third set of web page content in response to the detecting.
20. The method of claim 14, wherein the trigger event is receiving a user input while a window of the web browser is an active window on a display of the client computer system.

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