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Shaffer et al.

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[54] **APPARATUS AND METHOD FOR AUTOMATED EVENT NOTIFICATION**

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[51] **Int. Cl.**^{7} **G06F 15/173**
[52] **U.S. Cl.** **709/224**; 709/206; 709/207
[58] **Field of Search** 709/224, 207, 709/206, 227, 223; 710/17, 18; 714/39, 47, 51; 379/93.24

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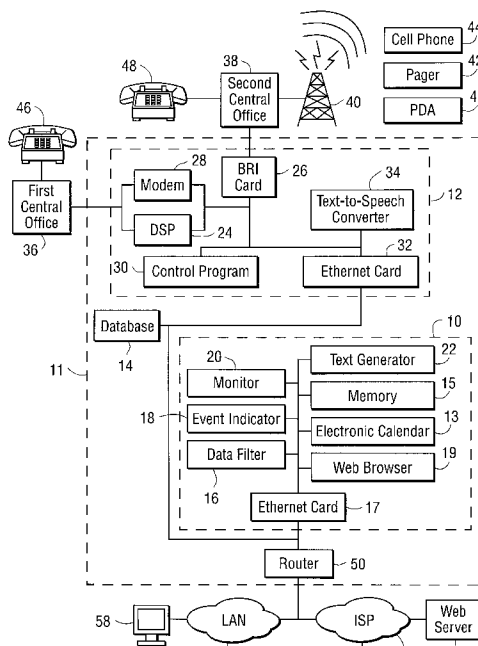|			
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Primary Examiner—Mehmet B. Geckil

[57] **ABSTRACT**

A method and system for automatically providing remote notification of a locally detected event includes receiving data and analyzing the content of the data using a data filter of a computer. The data filter is configured to detect an indication of a predetermined event within the data. If the event is detected, the data filter activates a local event indicator associated with the computer. An event indicator monitor determines whether a user response is initiated within a configurable time interval after activation of the event indicator. If the monitor determines that no user response is initiated within the configurable time interval, the monitor transmits an establish-connection message to a control program. The control program responds to the establish-connection message by accessing an event notification message from a database which indicates access numbers of the remote communication devices to which to transmit the event notification message. Communication links are established to the remote communication devices and the event notification message is transmitted to the devices. The data filter is capable of analyzing data included in web page updates transmitted to a web browser of the computer, e-mail messages, scheduling updates and requests transmitted to an electronic calendar of the computer, and scheduling reminders transmitted by the electronic calendar.
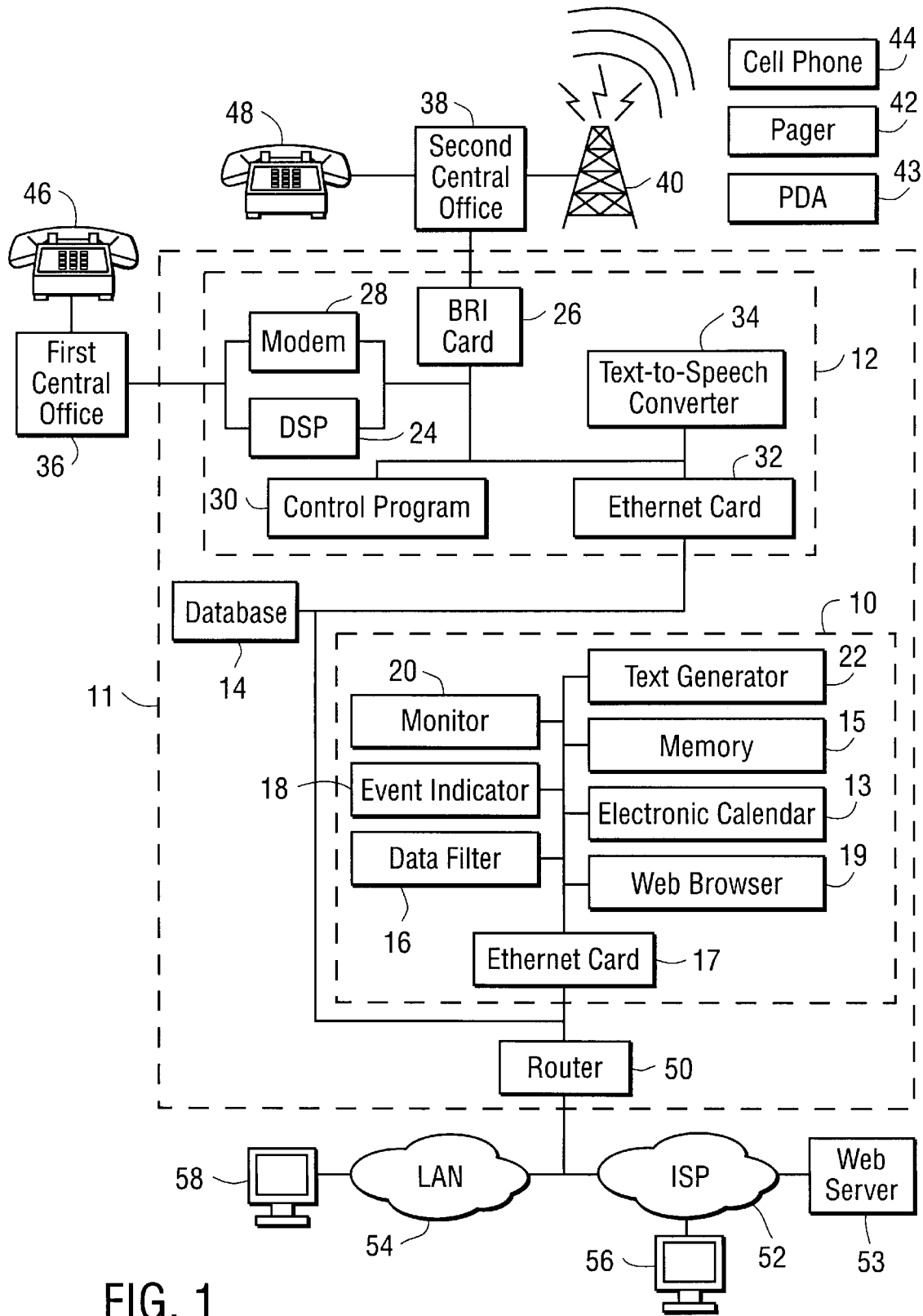
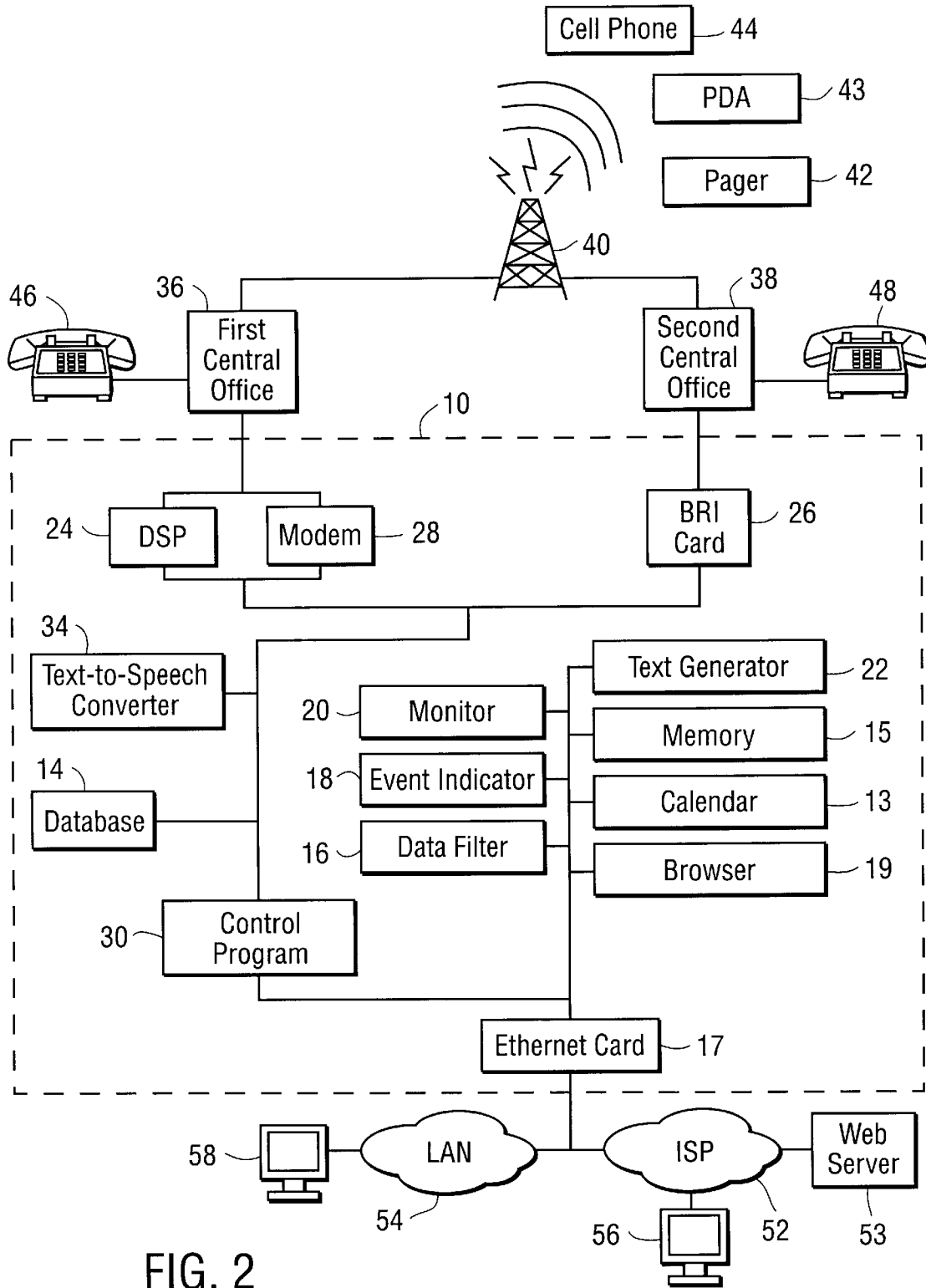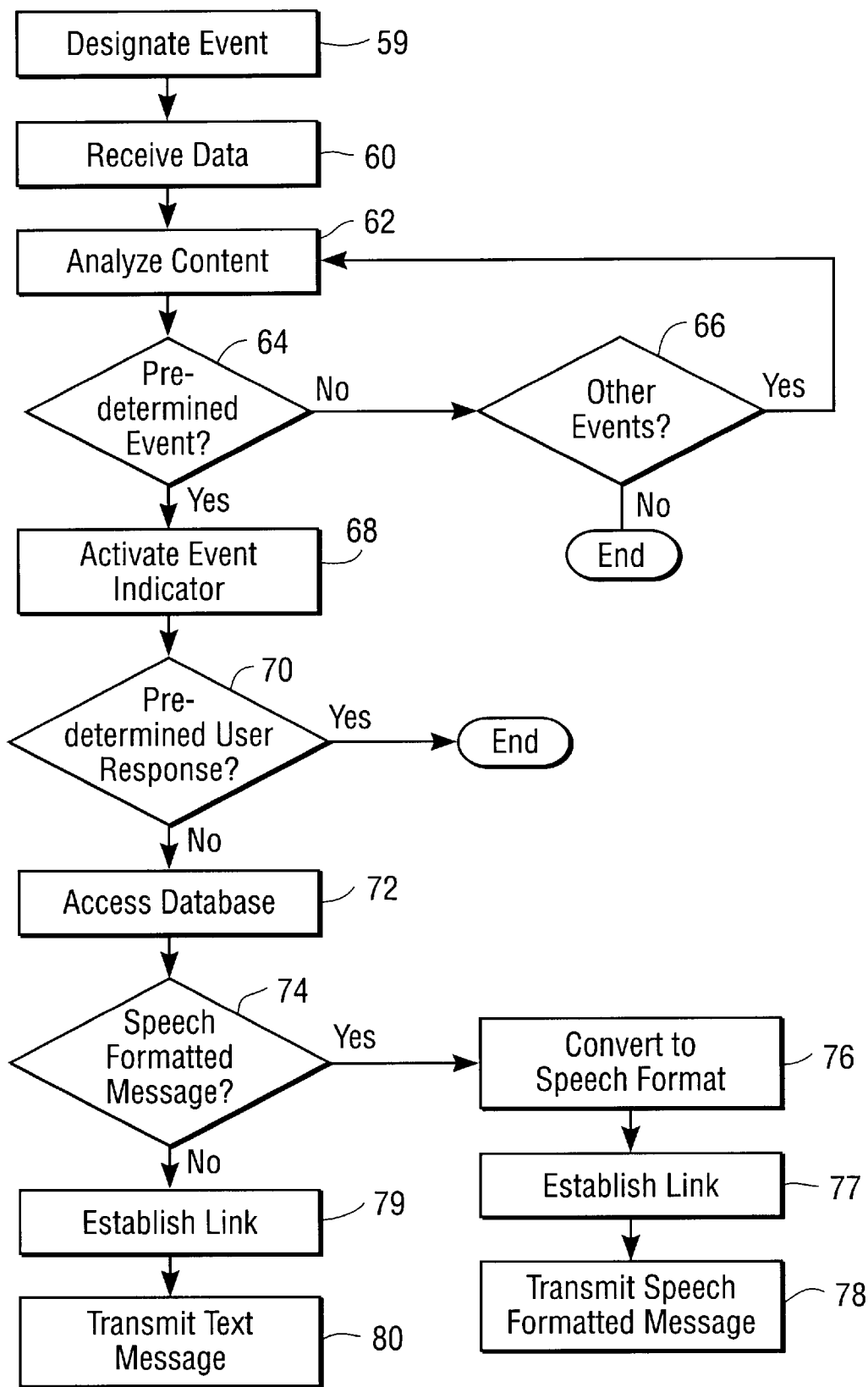**11 Claims, 3 Drawing Sheets**

FIG. 1

FIG. 2

FIG. 3

APPARATUS AND METHOD FOR AUTOMATED EVENT NOTIFICATION

BACKGROUND OF THE INVENTION

The invention relates generally to a system and method for event notification over a telecommunications network and, more particularly, the invention relates to automatic notification of a locally detected remote event over a telecommunications network.

DESCRIPTION OF THE RELATED ART

Computing devices, such as work stations and personal computers, have come to occupy a more central role as communication devices with the increasing inter-connectivity provided by networks such as the Internet and local area networks (LANs). E-mail enables users to transmit and receive text messages and to attach data files within these messages. Push technology associated with the World Wide Web of the Internet enables a user to subscribe to a service which automatically transmits to the user updates of particular web sites. For instance, a user might subscribe to a push service which provides regular updates of stock prices. Each time the stock prices are updated at a particular web site, or after a selected period of time, the user receives updated information.

A personal computer is also often used to support an electronic calendar. A user is able to enter meetings and appointments into computer memory, and the calendar software automatically provides reminders of upcoming scheduled events. A computer can also be equipped for voice-over-data network telephony, such as internet protocol (IP) telephony. Moreover, the IP-telephony enabled computer can be equipped with a messaging function, so that the computer allows a caller to leave a voice message if the user is unavailable to take a call.

Each of these communication technologies can be configured to alert a user that information has been received or that an attempt has been made to establish a communication link. When an e-mail message is received, the computer can be configured to beep to indicate receipt of the message. Alternatively, a visual indicator such as a flashing icon, can be made to appear on a screen of the computer to indicate that a message has been received. In the electronic calendar example, the electronic calendar can be configured to provide a local reminder of an upcoming event by activating an audio signal and displaying a visual reminder on the computer screen. However, if the user is away from the computer when the event occurs, the user will not receive notification of the event. This is especially troublesome if the event is urgent, for instance, a rescheduling message for a critical meeting.

U.S. Pat. No. 5,721,825 to Lawson et al. describes a system and method for global event notification in a distributed computer environment. A local event registry identifies local event consumers who should be notified when an event occurs. A global event registry identifies which remote servers should be notified of the event, so that event consumers supported by the remote servers can also be notified of the event. When the event occurs, a local server accesses both the local event registry to determine which local event consumers to notify and the global event registry to determine which remote servers require notification. Although the Lawson et al. invention is effective for its intended purpose of providing global event notification, the invention does not solve the problem of remote event notification of a

What is needed is a system and method for remote user notification of an event when the user is determined to be unavailable to locally receive notification.

SUMMARY OF THE INVENTION

A method and system for providing automatic event notification to a locally unavailable user of a telecommunications system include providing computers with a data filter for analyzing content of received data (i.e., messages) to determine if the data includes an indication of occurrence of a predetermined event. The data filter communicates with an event indicator associated with the computer to provide a visual alert upon detection of the predetermined event by the data filter. An event indicator monitor is connected to the event indicator to determine whether the user is locally available to receive an event notification. If a specified action is not taken by the user of the computer within a configurable time interval following an activation of the event indicator, the event indicator monitor generates an establish-connection message that is configured to access a system capability to transmit a notification to a remote communication device.

In one embodiment of the system, a server is connected on a data network to control remote notification capability of the system. The server includes a control program configured to trigger a notification sequence in response to receiving the establish-connection message from the event indicator monitor. The sequence is executed by the control program to establish a telecommunications link to a remotely located communication device. A transmitter associated with the server transmits an event notification to a specified remotely located communication device (e.g., a user-specified telephone or pager) via the telecommunications link. Preferably, the event notification includes an identification of the message content of interest to a notified user.

In a preferred embodiment, the messages received by the computer include web page updates received by a router associated with a web server on the World Wide Web of the Internet. For example, the computer may be subscribed to a push service provider which provides scheduled updates of stock prices. The data filter is configured to search the content of updates and to detect a predetermined event in the web page updates, such as a drop in stock X below a certain price, for example $50 per share. Upon receiving a web page update, the data filter determines whether the update includes data reflecting a drop in stock X below $50 per share. If the data filter detects this event, the data filter activates the event indicator associated with the computer, triggering a local notification alert (e.g., an icon appears on a computer screen). The event indicator monitor determines whether the user of the computer is locally available by monitoring whether a specified responsive action occurs within a configurable time interval after activation of the event indicator (e.g., depressing a specific key of a keyboard). If the indicator is not deactivated within the configurable time interval, the monitor transmits the appropriate establish-connection message to the server.

The server accesses the remote notification capability of the system in response to the establish-connection message. The server or computer includes the telephone number(s) for one or more user-specified remote communication devices. These devices might include a wireless pager, a wireless telephone, a wired telephone, and/or a personal digital

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