

between 360 and 480 pixels tall and the pixel count is between 132 and 172 pixels-per-inch inclusive.

[0268] One conceptually simple extension to any of the above device embodiments involves adding one or more speakers and one or more microphones to any of the above embodiments, as part of enabling a user to use the device as a cell phone. (Of course, appropriate transceiver and software would be required too, as found in smart-phones today.) In one preferred embodiment, a near-to-ear speaker (like those found at the top of most cell phones) would be placed on or near one side of the device, and a small microphone (like those found in most cell phones) would be placed on or near the other side of the device, so the user could hold the speaker to their ear and talk into the microphone at the other end of the device. In another embodiment, the speaker would be placed on the back of the device near one side (left or right) while the microphone is placed in the back of the device near the other side (right or left), so the user could hold the speaker on the back of the phone to their ear while talking into the microphone. In another embodiment, the speaker and microphone would be embedded in a display cover (such as the cover 2001 illustrated in FIG. 20): They could either be embedded on the outside of the cover, for use when the cover is closed, or embedded on the inside of the cover, for use when the cover is open. In another embodiment, the phone would have a headset jack, allowing the user to plug-in one of the common cell phone headsets and use that instead of holding the device to their ear. In yet another embodiment, the device would include a local-area-network transceiver (probably in addition to a separate transceiver used to access the voice network or Internet) that could communicate to a wireless headset that has its own compatible local-area-network transceiver (which could be, for example, a Bluetooth transceiver, or another type). Still another embodiment of the device could include two or more of these mechanisms for conducting voice communications—for example, a speaker & microphone as well as a Bluetooth connection for talking to a Bluetooth headset. Any of these, in combination with the other novel device embodiment features described earlier, constitutes an embodiment covered by the present invention.

[0269] As noted earlier, a wireless service provider could create and offer a mobile Web service specifically targeting devices embodiments of the present invention. Any device embodiment of the present invention could be used. One preferred embodiment of such a mobile Web service involves distributing to subscribers hand-held devices where the devices would have local-area radios (such as WiFi radios) or wide-area-radios (such as 3G cell radios) or both types of radios, and the devices would have touch-sensitive displays that show between 480 and 800 pixels horizontally (inclusive) and between 320 and 600 pixels vertically (inclusive), and the devices would be able to run a Web browser application, and the devices would have one or more touch sensitive edge areas and/or a touch sensitive back on which a user can tap or slide fingers or hands to control one or more aspects of the device or the Web browser (such as scrolling Web pages as described earlier), and the service provider would charge each subscriber a monthly fee (and optionally charge an initial sign up fee or a charge for the device hardware, or both). Another embodiment would be the same, but would target devices that additionally include two or more touch-sensitive edges. Another embodiment would be the same, but would additionally have the device automati-

cally periodically fetch certain content from a remote server (such as certain Web pages or data within certain Web pages), so the user can see that content quickly without having to wait for it to download at the moment the user wants to look at it. Another embodiment of this service would be the same but would additionally provide a means for the user to control one or more aspect of the service from the device (such as which Web pages or other content should be automatically periodically downloaded, and how often).

[0270] As noted earlier, hand-held devices embodied by the present invention would make very good general-purpose remote controls. A preferred embodiment of such a remote-control system would consist of one or more of the devices embodied by the present invention communicating to a hub (which could be a PC or a standalone piece of electrical equipment) that communicates to one or more other electronics products (such as a TV, a TV recorder, a stereo, an alarm system, etc.). The communication between the hand-held device and the hub could be through the Internet, with the device accessing the Internet wirelessly through a wireless access point (such as a Wi-Fi hotspot, a bluetooth access point, or a cellular tower, for example) using standard mechanisms used by data-enabled phones or wireless PDAs, and with the hub communicating with the other electronics products through a local area network (either wireless or wired). In this way, a user could control those remote electronic products from any place they can access the Internet using their hand-held device. Note that for electronic products that have their own connection to the Internet, the hand-held device can communicate through the Internet to those electronic products rather than going through a hub: This represents an alternative embodiment of this remote control system. In both of those remote-control system embodiments, a notable preferred embodiment would be one in which each of the electronics products being controlled has a Web-based interface (e.g. web pages made of HTML, JavaScript, Java or other Web-based software) that is either stored in the device or stored in the hub, so almost any remote Web browser (including browsers in devices described in this description of the present invention) can easily access that control interface as needed rather than having to embed the control interface in the hand-held device (with appropriate password protection or other security mechanisms to keep unauthorized people from controlling the remote device).

[0271] One class of methods covered by the present invention is the method by which a device's software makes changes in its user interface in response to the user tapping on a touch sensitive area on the edges of the device. A specific preferred method is one where, when the user taps or double-taps on a given touch sensitive area on the device (such as item 1003 or item 1004 shown in FIGS. 16-A and 16-A), the device responds by making a Web browser URL text box (and optionally other items) appear or disappear from view on the display. Most Web browsers can show a URL text box at the top of the browser window, showing the URL of the current Web page and allowing the user to enter a new URL into the text box. And a notable preferred device embodiment is one that implements this method, so the user can easily make a URL text box (and possibly other items) appear or disappear by simply tapping or double tapping on the top edge. The device maker can choose whether the