

METHOD AND SYSTEM FOR SIMPLIFIED ACCESS TO INTERNET CONTENT ON A WIRELESS DEVICE

CROSS REFERENCE TO RELATED U.S. APPLICATIONS

[0001] This application claims priority from: (1) Hunter, "METHOD AND SYSTEM FOR SIMPLIFIED ACCESS TO INTERNET CONTENT ON A WIRELESS DEVICE", U.S. Provisional Application No. 60/193,737, filed Mar. 31, 2000, the contents of which are incorporated herein by reference; (2) Hunter, et al., "SYSTEM FOR USING WIRELESS WEB DEVICES TO STORE WEB LINK CODES ON A LIST SERVER FOR SUBSEQUENT RETRIEVAL", U.S. Provisional Application No. 60/193,755, filed Mar. 31, 2000, the contents of which are incorporated herein by reference; and (3) Hunter, "DEVICE-BASED ROUTING FOR WEB CONTENT RETRIEVAL", U.S. Provisional Application No. 60/193,836, filed Mar. 31, 2000, the contents of which are incorporated herein by reference.

FIELD OF THE INVENTION

[0002] This invention relates to a method and system for simplified access of Internet content such as web pages through a wireless device such as a cellular telephone by entry of a linkage code that is associated with such Internet content.

BACKGROUND OF THE INVENTION

[0003] Recently, a new generation of cell phones has been introduced that include provisions for Internet connectivity and "micro-browsers." Using this class of device, the cell phone user can directly access content on the World Wide Web, receive email, be notified of changes in "subscribed information" such as sports scores or stock prices, etc.

[0004] The constraints imposed on a "micro-browser" in a cell phone environment pose a unique problem for both the information provider as well as the user retrieving the information. The development of the Wireless Application Protocol ("WAP") specification was specifically designed to address a number of fundamental differences between classic Internet and Web-based services and services on a wireless data network. These issues included the differences in needs and expectations as well as differences imposed by the device. That is, wireless devices will generally have less powerful CPU's, less memory and smaller displays than conventional computers. Wireless devices may have very different input devices. Wireless devices other than cell phones may be used that have very different capabilities. All of these issues have been addressed in the WAP specification and architecture. In particular, the WAP system is in no way restricted to cell phones—integration into other devices with wireless connectivity (e.g. Palm Pilots) was clearly anticipated. Thus, although this application will generally refer specifically to cell phones, anything described in that context would also apply to any other comparable wireless device, such as a Personal Digital Assistant ("PDA").

[0005] FIG. 1 outlines the basic WAP architecture. Wireless devices are not directly "on the Internet" in the same sense as traditional computers. The fact that devices roam around, as well as the sheer number of devices expected to be deployed, discourage a solution in which each wireless

device has its own IP address and communicates directly. In addition, the standard Internet protocols require a fair amount of overhead, which poses a problem on a channel with limited bandwidth. As a result, a new set of wireless protocols was developed. These include the Wireless Session Protocol ("WSP") and the Wireless Datagram Protocol ("WDP") which parallel the function of the TCP/IP and UDP Internet protocols. Wireless Telephone Application ("WTA") Servers "speak" these protocols natively, and can be directly accessed by wireless devices.

[0006] While for certain applications the requirement of a new class of server is acceptable, restricting wireless devices to this class of server would not adequately leverage the huge embedded base of Internet equipment. As such, the architecture includes WAP proxies, which serve as a bridge between the wireless network and the standard Internet. When a digital device attempts to access a resource via a standard URL, this request is passed to the WAP Proxy using wireless protocols. The WAP Proxy reformats this request into a standard HTTP 1.1 query, retrieves the content from the standard Web Server, and then passes the result back to the wireless device using the wireless protocol. Using this system, wireless devices can access any server on the Internet.

[0007] A web site that natively "understood" wireless devices would generally return content in the new Wireless Markup Language (WML), or possibly in the older Handheld Device Markup Language (HDML). Recognizing that achieving deployment of a second, parallel coding standard for documents might slow the penetration of the WAP technology, the WAP Architecture also includes provisions for filters that could translate standard HTML into WML automatically. These filters can be integrated into the WAP Proxy itself, or can exist between the web server and the WAP Proxy. This would, at least in theory, allow a wireless user to access any existing content on the web, even if the web site was not specifically designed for access by devices of this class.

[0008] A system and method for utilizing a link code or linkage code to cause a client computer to automatically access a web resource is disclosed in copending U.S. patent application Ser. No. 09/543,178, filed on Apr. 5, 2000 and incorporated by reference herein. In the system described therein, the link code is a bar code that is scanned by a bar code scanner and input into a client software program that uses the decoded link code to request a URL template from an external server computer. The server takes the link code, returns the URL template, and the link client program assembles the URL using other data at the client. The URL is passed to a web browser, which then retrieves the web resource. This process may also be performed by manually entering a text string associated with the code, such as by entering a UPC number found at the bottom of a typical UPC barcode. This is a powerful way of utilizing a general purpose computer to automatically access a web resource without having to type in a lengthy URL.

[0009] It is noted that the system described above relies on the use of a client program running on the client computing device for obtaining, assembling, and then providing the URL to the web browser program. In general purpose personal computers, loading and running of such a client program is of course a typical and easily-done process. It