

to assemble a lookup URL in a manner described below. The lookup URL addresses a resolution server **205** that contains the target URL of the Internet content associated with the linkage code. The target URL received from the resolution server **205** redirects device **200** to the content server **206** containing the content associated with the linkage code.

[0035] The process by which linkage codes are mapped to content that is then downloaded is depicted in **FIGS. 3A and 3B**. A user begins the process by entering a linkage code in field **211** at step **300** in **FIG. 3A**. The linkage code is transmitted to the URL-assembly server **202** at step **301**. If a user is using the linkage code system for the first time, she would have to key in to the device **200** the name of the go-window in the traditional manner, by keying in the full name of the window, for example, www.paperclick.com. Once downloaded, however, the go-window can be bookmarked for easy subsequent retrieval.

[0036] The process by which a first-time user registers with the system is depicted in **FIG. 3C**. If the user is using a device that can transmit a unique device identifier, such as a PDA or cell phone using OpenWave's UP.Link proxy, she will be prompted at step **352** to register with the linkage code service. The user will be connected by the URL-assembly server **202** to the registration server **203**. The registration server **203** can prompt the user at step **353** to enter various items of personal information, such as her name, address, age, gender, preferred language, and preferred interests. This information is stored at step **354** in user database **214**. The user is assigned a UID so that she can be identified by the system. As part of this process, an entry can be made in the user database linking the UID to the unique device identifier. A given UID can even be linked multiple device identifiers.

[0037] Even if a client device does not support the transmission of a unique device identifier, it can still be identified to the system if the device's mini-browser supports standard authentication means, such as the storage of cookies. For this type of client, the registration server sends a cookie to the client's browser, which stores the cookie on the client device. Subsequent transmissions for the client to then URL-assembly server would then include the cookie.

[0038] The user data enables the linkage code system of the present invention to support the profiled routing feature of the client-based linkage system of the copending application. If, however, the device **200** does not support the transmission of a UID, the user of device **200** will remain anonymous to the linkage code system, and profiled routing is not available.

[0039] Continuing with **FIG. 3A**, once a linkage code has been received by the URL-assembly server **202**, it is broken up at step **302** into its constituent parts, namely, the RID and the IID. The RID is passed to the routing server **204** at step **303** to obtain a URL template containing the address of the resolution server **205** associated with the IID. The resolution server **205** can actually be a front for any manufacturer's or vendor's server that can map a product code to a URL. This introduces the possibility that a given manufacturer or vendor could have a server for fielding WML queries that is different from servers fielding HTML queries. Since queries coming from the proxy server **201** typically indicate in the HTML header that the device **200** supports a WML browser, the URL-assembly server **202** can optionally include a URL template selection parameter in the data stream sent to the

routing server so that a WML oriented template is returned by the routing server **204** to the URL-assembly server **202**. The template selection parameter can also be used to ensure that the WML content ultimately returned to the user is not encapsulated in a frameset, as framesets are not supported by WML.

[0040] If the device **200** has been previously registered with the system, its UID will be included in the transmission to the URL-assembly server **202**. In this situation, the URL-assembly server at step **304** passes the UID to the registration server which in turn uses the UID to retrieve user data for that user from the user database **214**, and returns that data to the URL-assembly server **202**.

[0041] The URL-assembly server **202** completes the URL-template at step **305**. The URL template returned by the routing server **204** has at least one field for the URL-assembly server **202** to fill in. A typical URL template will look something like: `http://resolve.paperclick.com:8080/all/cmd?CMD=GET&TYPE=^ TYPE^ &RID=^ RID^ &IID=^ IID^ &CODE=^ CODE^`, wherein the fields delimited by carets ("^") are to be filled in by the URL-assembly server. In the example shown, the fields to be filled in are the code type, the RID, the IID, and the full linkage code. If the linkage code is a UPC code equal to 051111128817, the RID would be 051111, the IID would be 12881, and the completed URL would be `http://resolve.paperclick.com:8080/all/cmd?CMD=GET&TYPE=UPC&RID=051111&IID=12881&CODE=051111128817`. There can also be fields for the UID, user data retrieved from the user database maintained by the registration server, and the template selection parameter. This list of fill-in codes is illustrative, and more fill-in fields can be supported and be within the scope of the invention.

[0042] The URL template also includes a field for a parameter indicative of the display device, i.e. what markup language the display device supports. This parameter could be the template selection parameter, or it could be a separate parameter. This enables the resolution server to list the addresses of multiple versions of a given page, a feature referred to a device-based routing. Thus, publishers can host web content on multiple formats accessible with different URLs, but use the same linkage code to access the content. Users are dynamically routed to the proper content based on the characteristics of the retrieving device.

[0043] The completed URL, referred to as a lookup-URL, is a reference to both a particular resolution server and an entry in that resolution server. The resolution server can be a front for any server, such as a vendor's server, that can map the IID to appropriate content on the Internet. The lookup-URL is returned at step **306** to the device **200**, or the proxy server **201** if device **200** is a WAP device, and redirects the device **200**, or the proxy server **201**, to the resolution server. Continuing onto **FIG. 3B**, the resolution server **205**, at step **307**, finds an appropriate target URL based on the information contained in the lookup-URL: the RID, the IID, and the user data if the user is registered. This ensures that the content customized to the user is subsequently returned. The resolution server includes lookup-tables and rules that ensure that a target URL to a content server **206** containing a web page in the correct display language is returned to the sender. The use of rules and tables to map the lookup-URL