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Briggs et al.

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(45) **Date of Patent: Jul. 18, 2006**

(54) **METHOD AND APPARATUS FOR SELECTIVELY SHARING AND PASSIVELY TRACKING COMMUNICATION DEVICE EXPERIENCES**

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(73) Assignee: **Fatbubble, Inc**, San Francisco, CA (US)

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G06F 15/173 (2006.01)

(52) **U.S. Cl.** **709/224**; 709/203; 709/205; 709/207; 707/3

(58) **Field of Classification Search** 709/203–207, 709/217–219, 224; 707/1, 3, 10; 706/45
See application file for complete search history.

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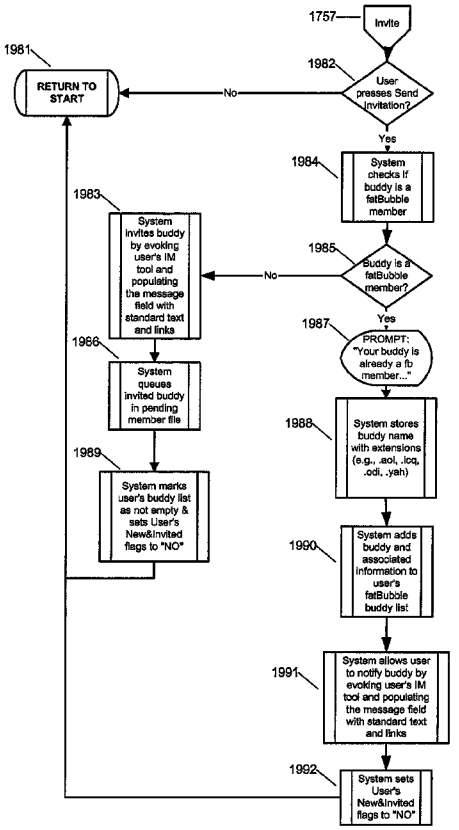
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Primary Examiner—Wen-Tai Lin
(74) *Attorney, Agent, or Firm*—Ernest J. Beffel, Jr.; Haynes Beffel & Wolfeld LLP

(57) **ABSTRACT**

The present invention includes methods and devices for passively tracking and selectively sharing user experiences with communication devices, including computers, web-enabled telephones, and PDAs. User rating or comments on their experiences can be captured. Particular aspects of the present invention are described in the claims, specification and drawings.

32 Claims, 19 Drawing Sheets



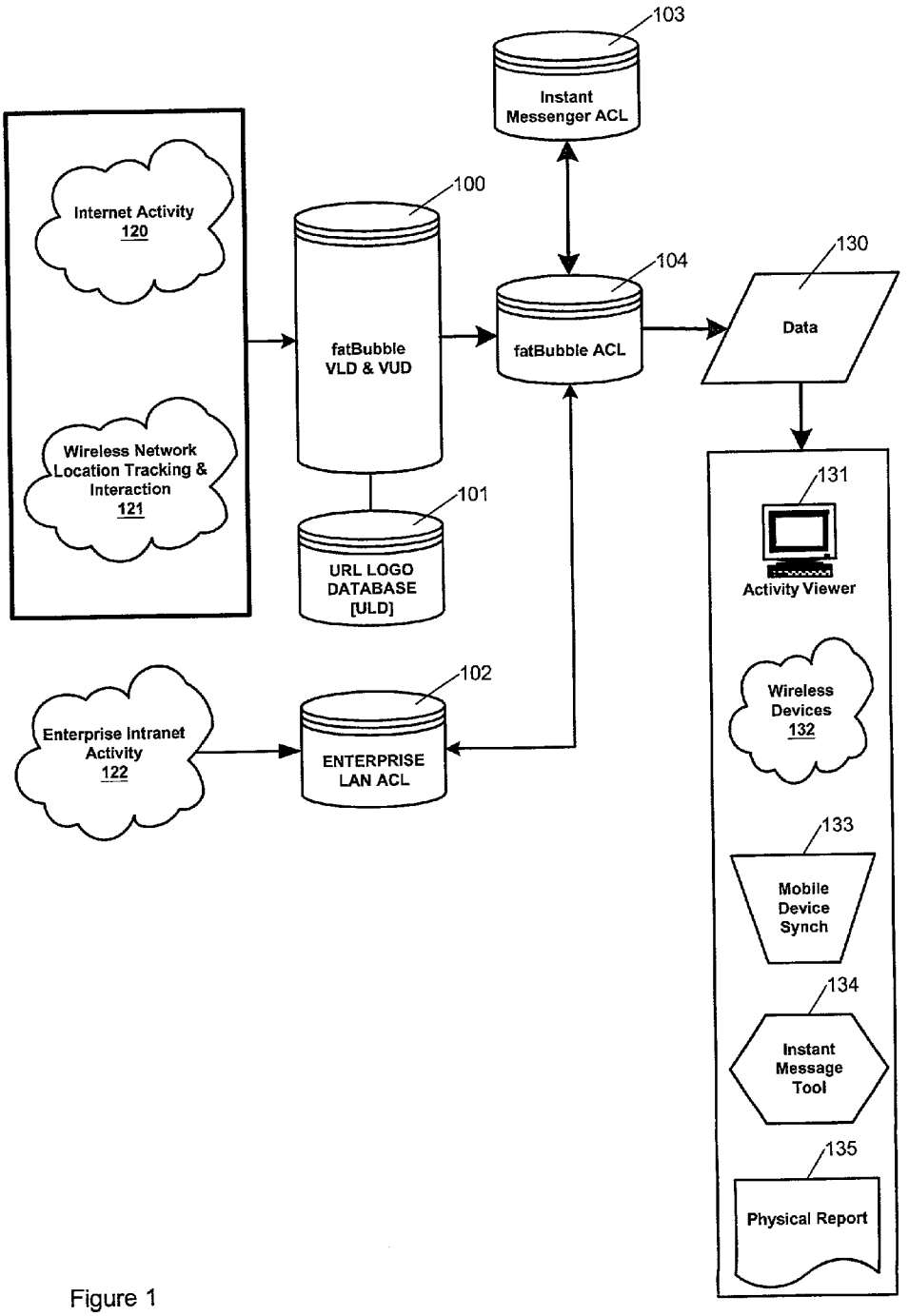

103
Instant Messenger ACL
Internet Activity 120
100
fatBubble VLD & VUD
104
fatBubble ACL
130
Data
Wireless Network Location Tracking & Interaction 121
101
URL LOGO DATABASE [ULD]
131
Activity Viewer
Enterprise Intranet Activity 122
102
ENTERPRISE LAN ACL
Wireless Devices 132
133
Mobile Device Synch
134
Instant Message Tool
135
Physical Report

Figure 1

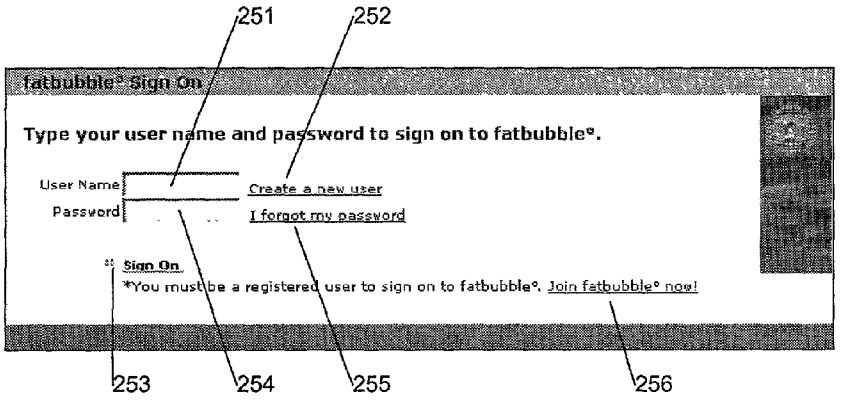
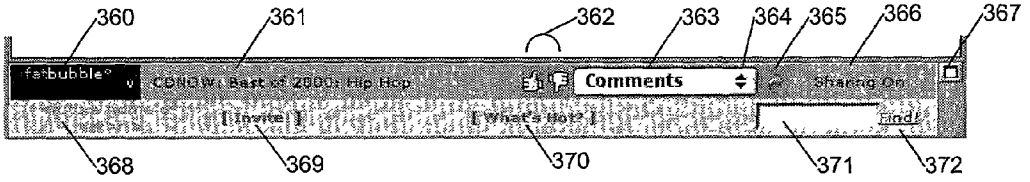


Figure 2

Figure 3



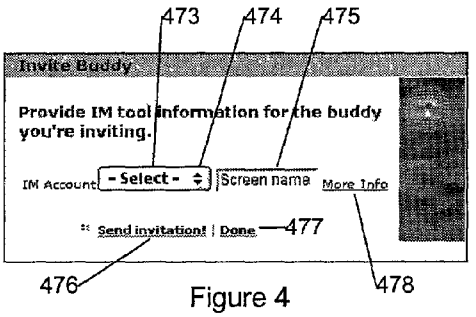


Figure 4

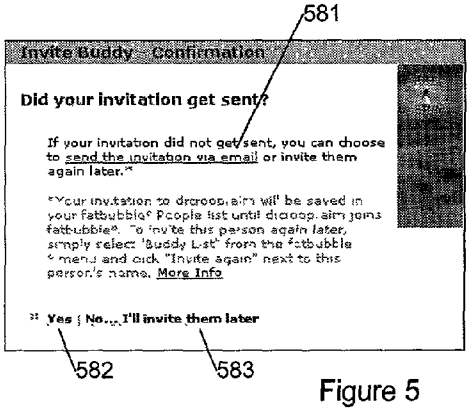


Figure 5

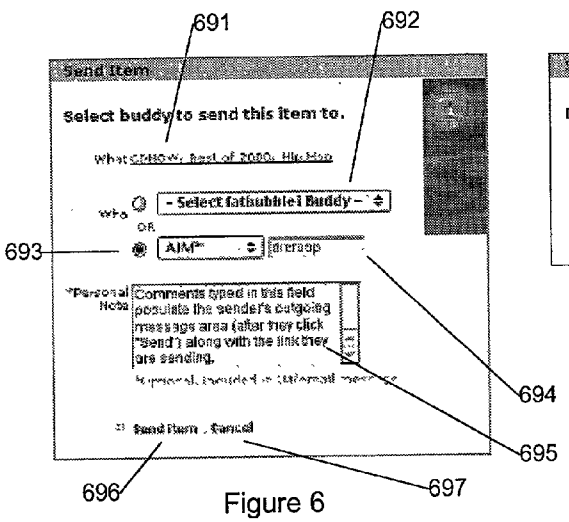


Figure 6

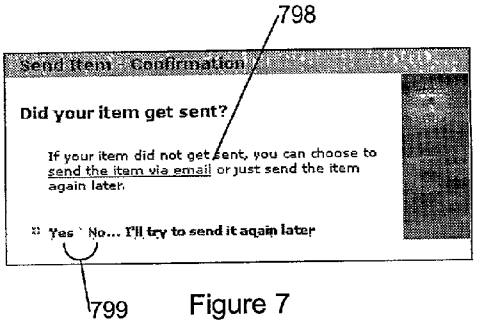


Figure 7

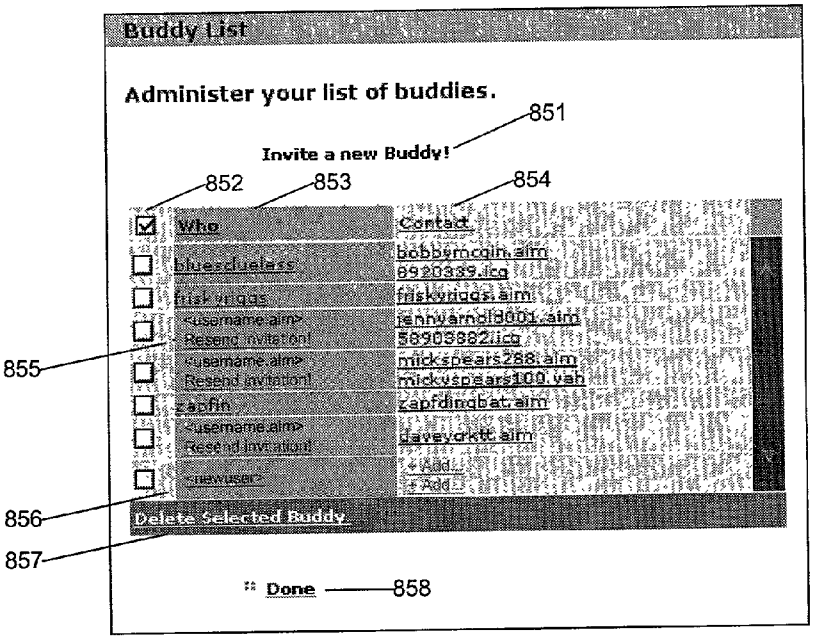


Figure 8A

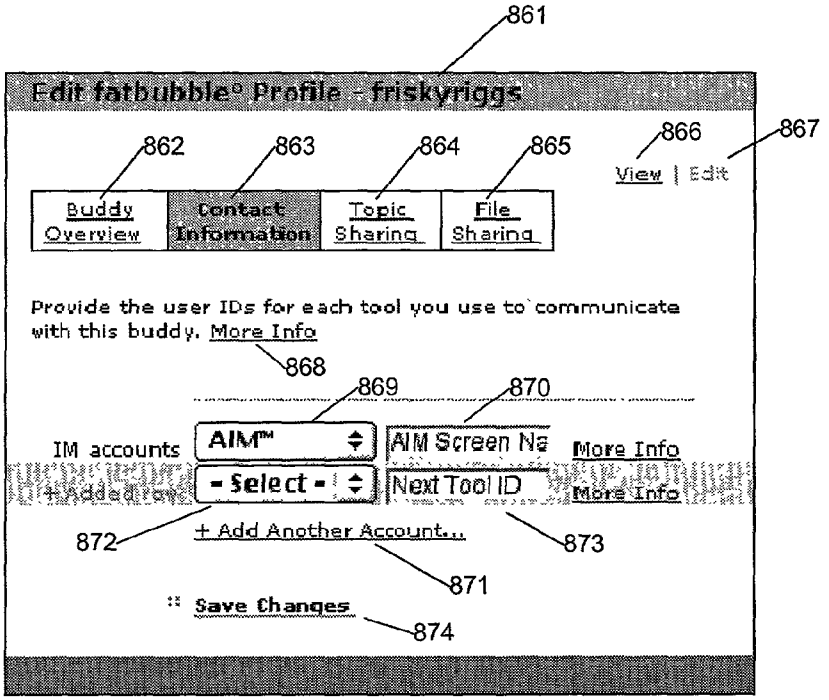


Figure 8B

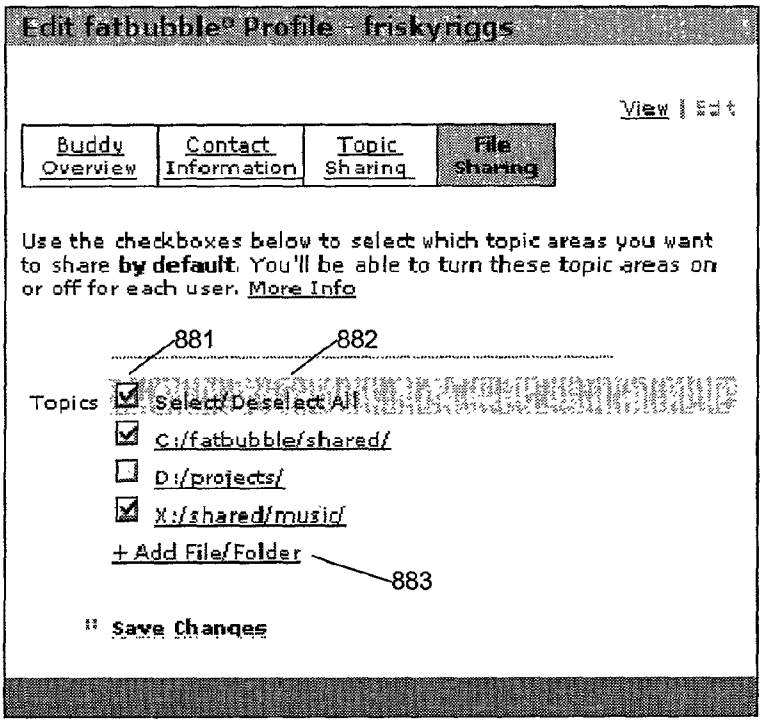


Figure 8C

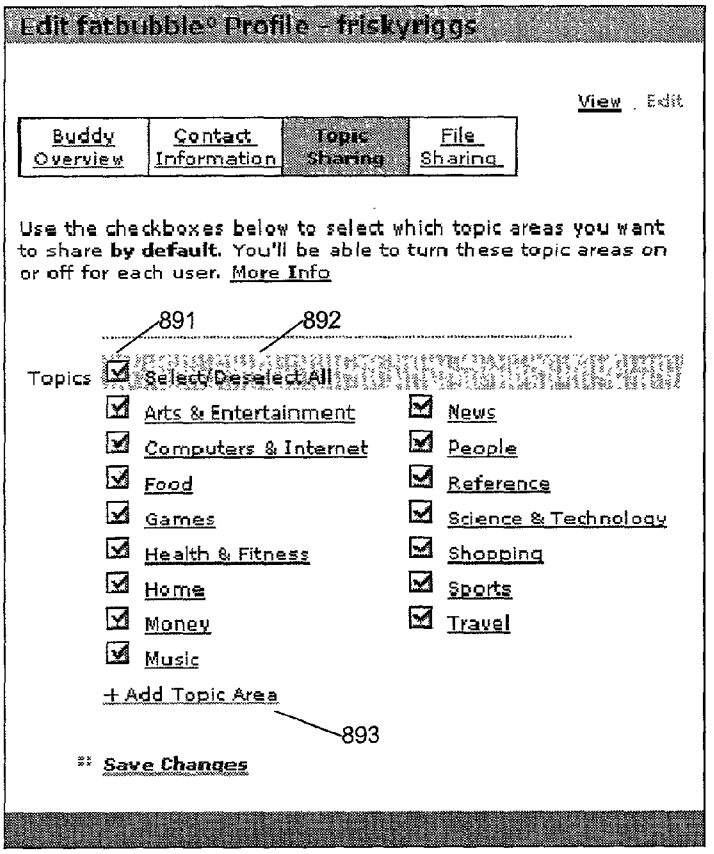


Figure 8D

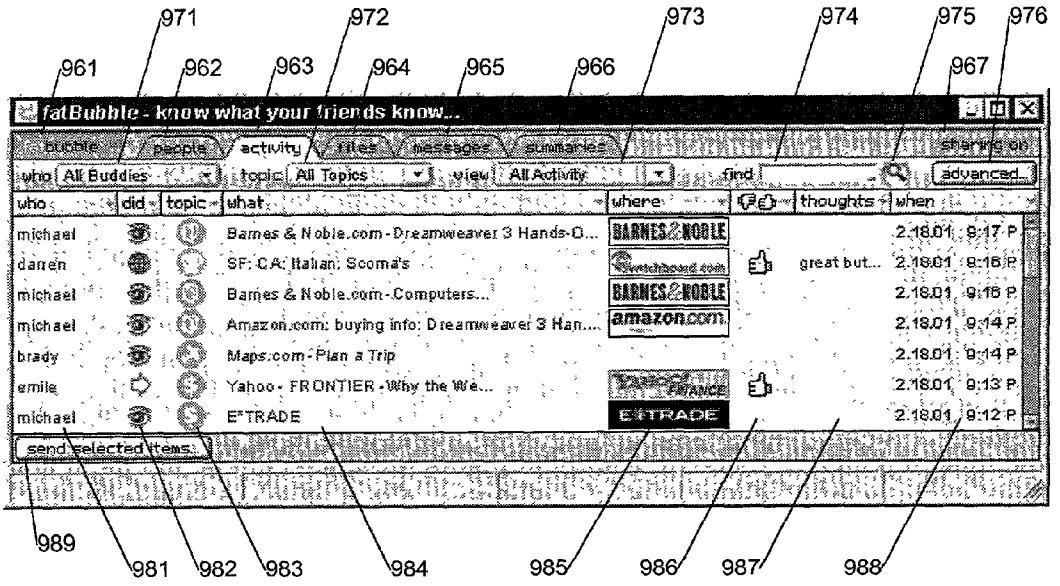


Figure 9

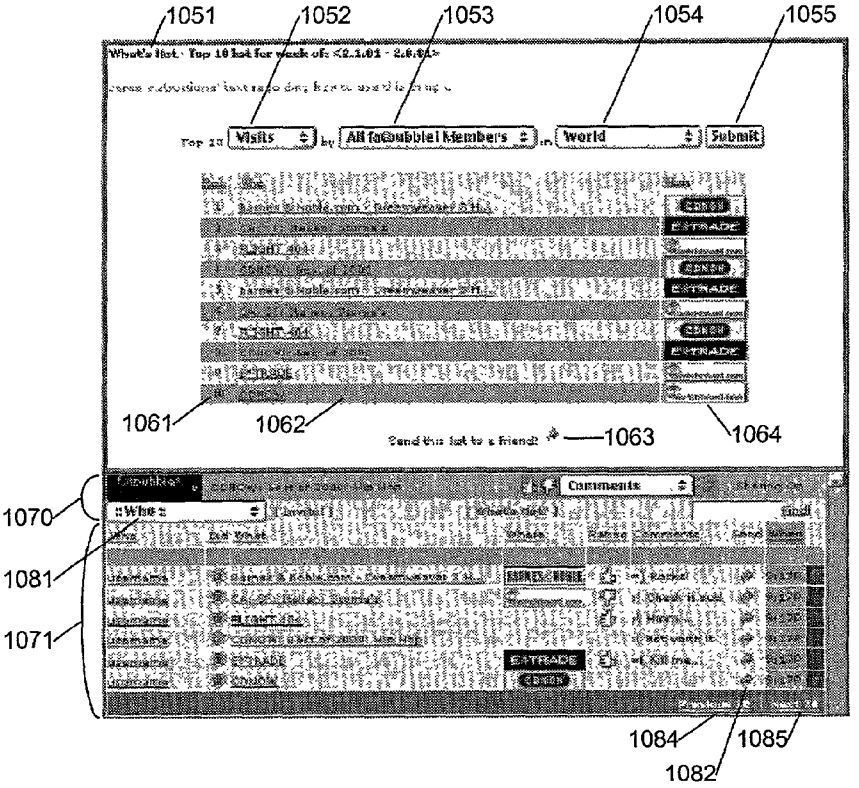


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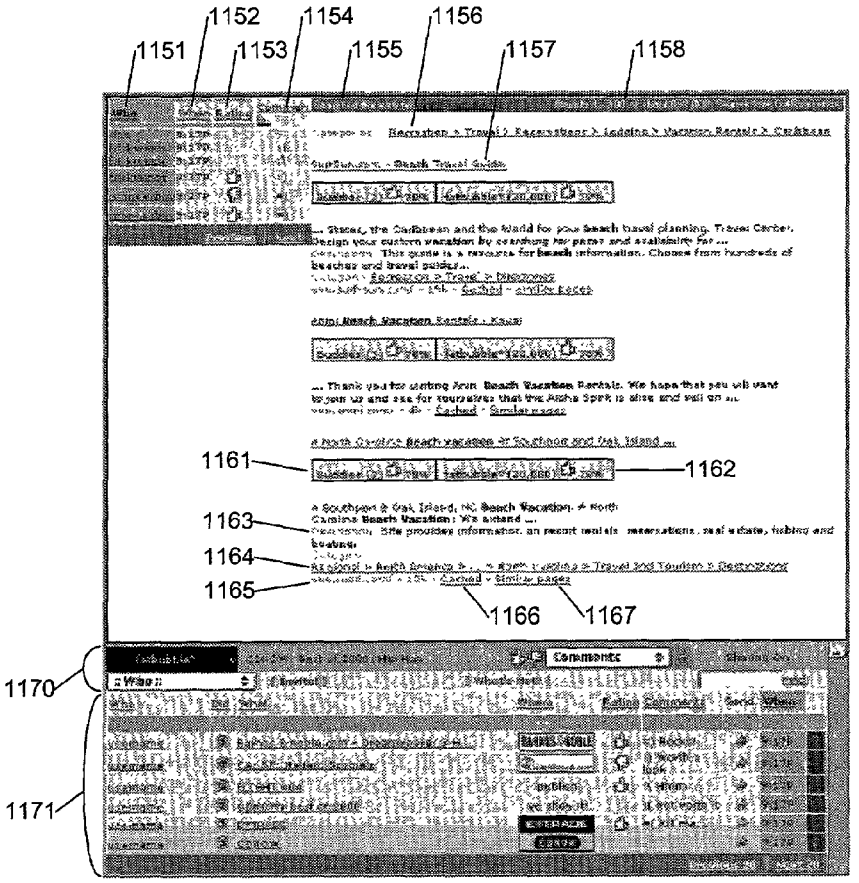


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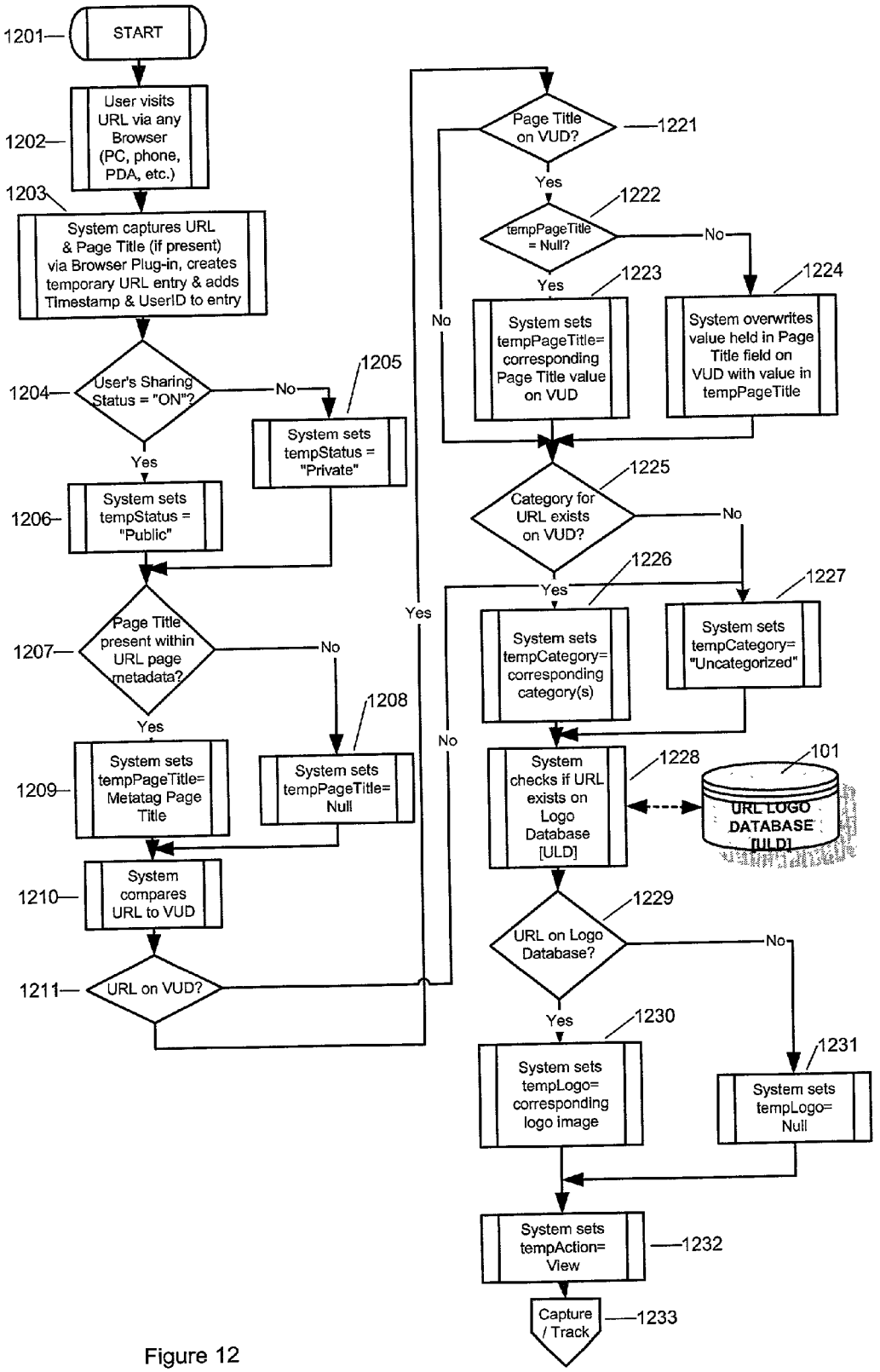

1201
START
1202
User visits URL via any Browser (PC, phone, PDA, etc.)
1203
System captures URL & Page Title (if present) via Browser Plug-in, creates temporary URL entry & adds Timestamp & UserID to entry
1204
User's Sharing Status = "ON"?
No
1205
System sets tempStatus = "Private"
Yes
1206
System sets tempStatus = "Public"
1207
Page Title present within URL page metadata?
No
1208
System sets tempPageTitle= Null
Yes
1209
System sets tempPageTitle= Metatag Page Title
1210
System compares URL to VUD
1211
URL on VUD?
Yes
No
1221
Page Title on VUD?
Yes
1222
tempPageTitle = Null?
No
1223
System sets tempPageTitle= corresponding Page Title value on VUD
1224
System overwrites value held in Page Title field on VUD with value in tempPageTitle
1225
Category for URL exists on VUD?
No
1226
Yes
System sets tempCategory= corresponding category(s)
1227
System sets tempCategory= "Uncategorized"
1228
System checks if URL exists on Logo Database [ULD]
101
URL LOGO DATABASE [ULD]
1229
URL on Logo Database?
No
Yes
1230
System sets tempLogo= corresponding logo image
1231
System sets tempLogo= Null
1232
System sets tempAction= View
1233
Capture / Track

Figure 12

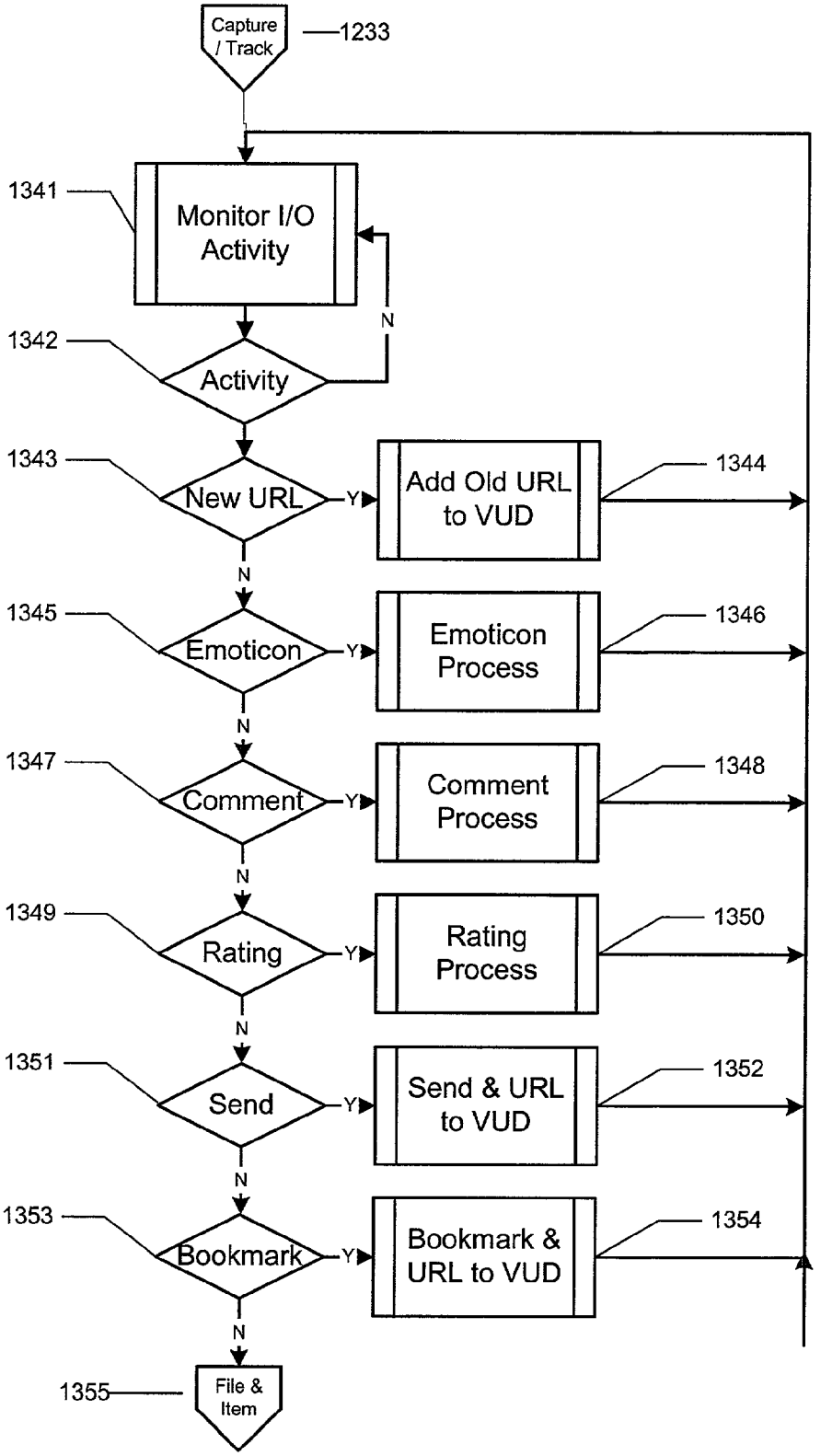

Capture / Track
1233
1341
Monitor I/O Activity
N
1342
Activity
1343
New URL
Y
Add Old URL to VUD
1344
N
1345
Emoticon
Y
Emoticon Process
1346
N
1347
Comment
Y
Comment Process
1348
N
1349
Rating
Y
Rating Process
1350
N
1351
Send
Y
Send & URL to VUD
1352
N
1353
Bookmark
Y
Bookmark & URL to VUD
1354
N
1355
File & Item

Figure 13

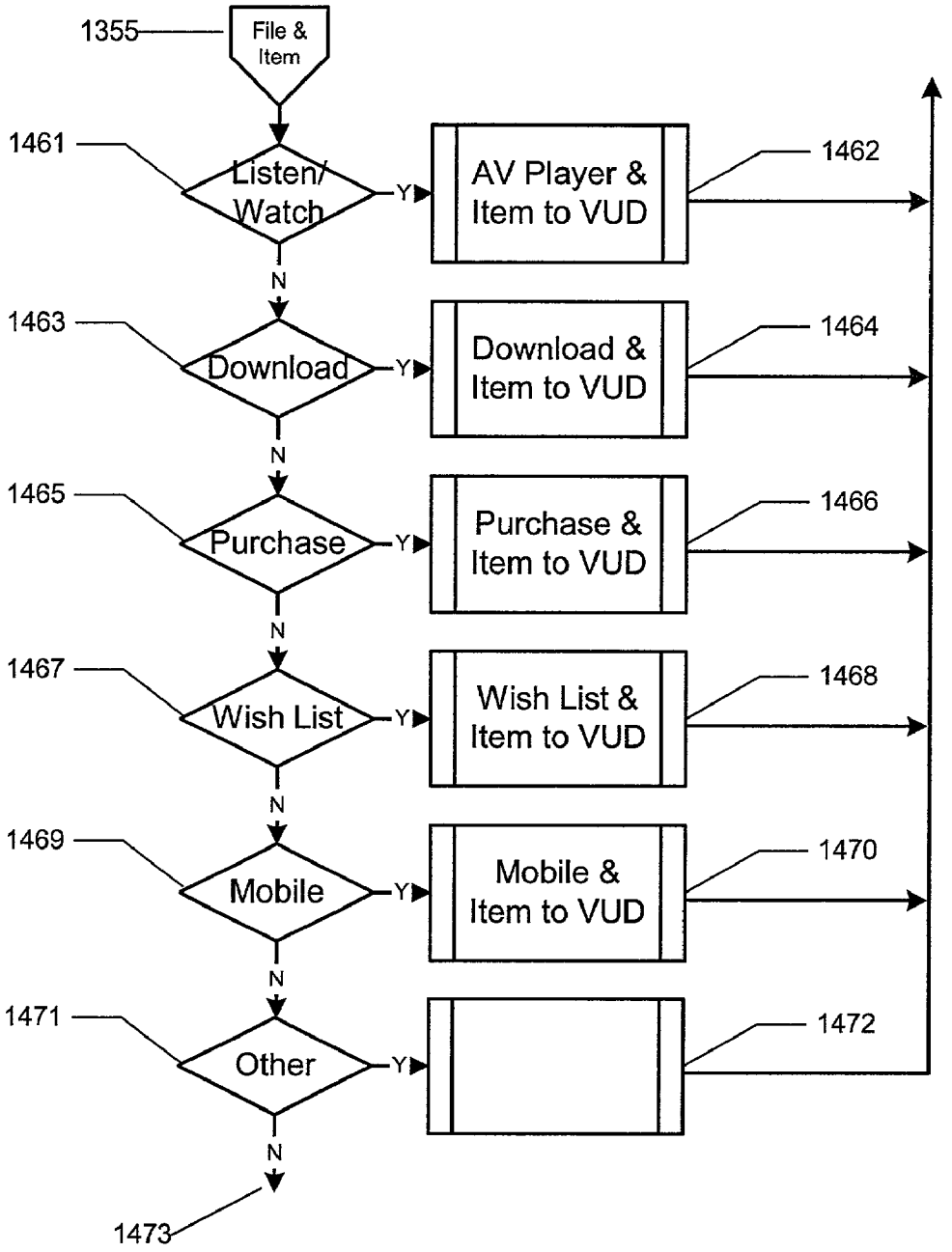

1355
File & Item
1461
Listen/ Watch
Y
AV Player & Item to VUD
1462
N
1463
Download
Y
Download & Item to VUD
1464
N
1465
Purchase
Y
Purchase & Item to VUD
1466
N
1467
Wish List
Y
Wish List & Item to VUD
1468
N
1469
Mobile
Y
Mobile & Item to VUD
1470
N
1471
Other
Y
1472
N
1473

Figure 14

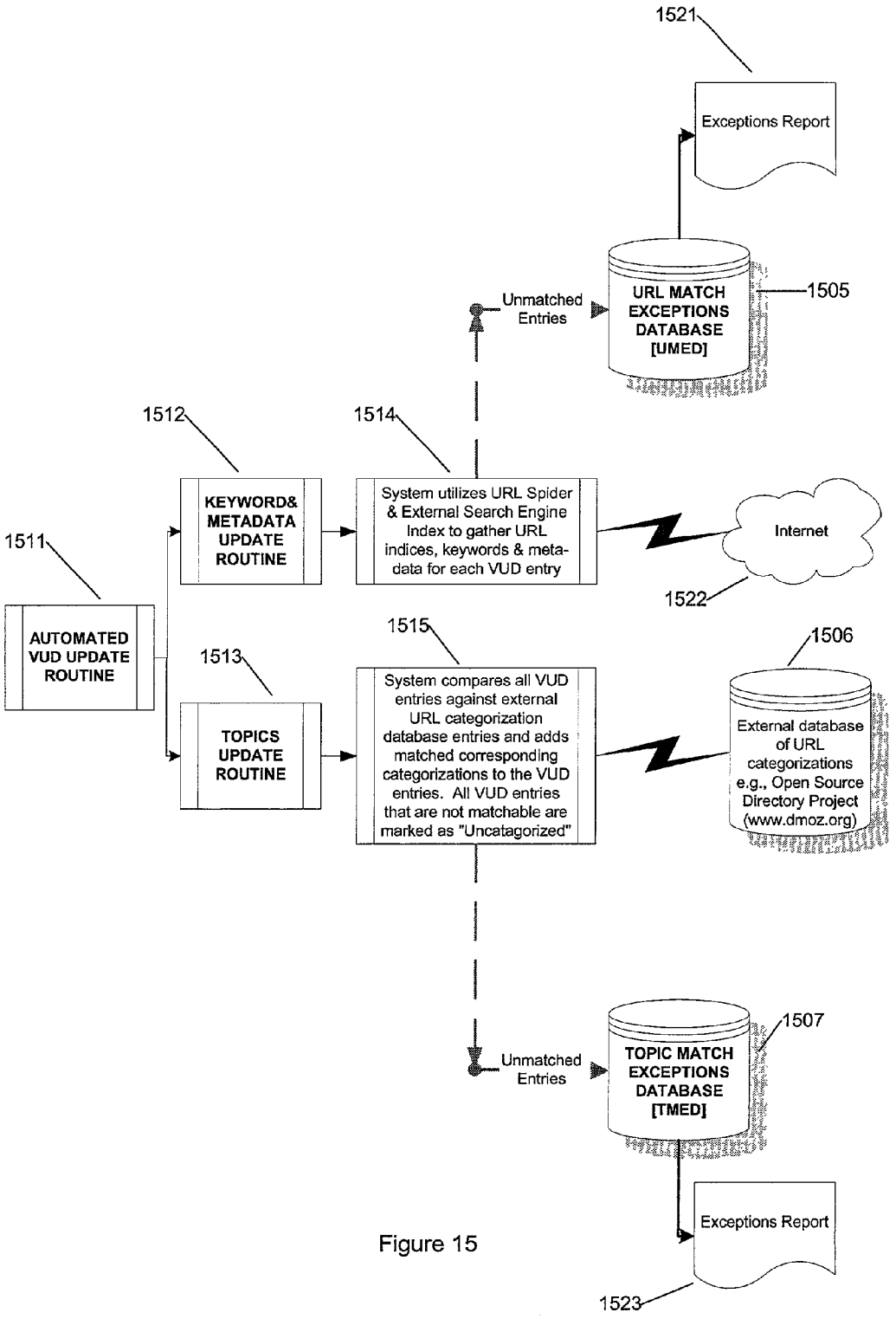

1521
Exceptions Report
URL MATCH EXCEPTIONS DATABASE [UMED]
1505
Unmatched Entries
1512
1514
KEYWORD& METADATA UPDATE ROUTINE
System utilizes URL Spider & External Search Engine Index to gather URL indices, keywords & meta-data for each VUD entry
Internet
1522
1511
AUTOMATED VUD UPDATE ROUTINE
1513
TOPICS UPDATE ROUTINE
1515
System compares all VUD entries against external URL categorization database entries and adds matched corresponding categorizations to the VUD entries. All VUD entries that are not matchable are marked as "Uncatagorized"
1506
External database of URL categorizations e.g., Open Source Directory Project (www.dmoz.org)
1507
Unmatched Entries
TOPIC MATCH EXCEPTIONS DATABASE [TMED]
Exceptions Report
1523

Figure 15

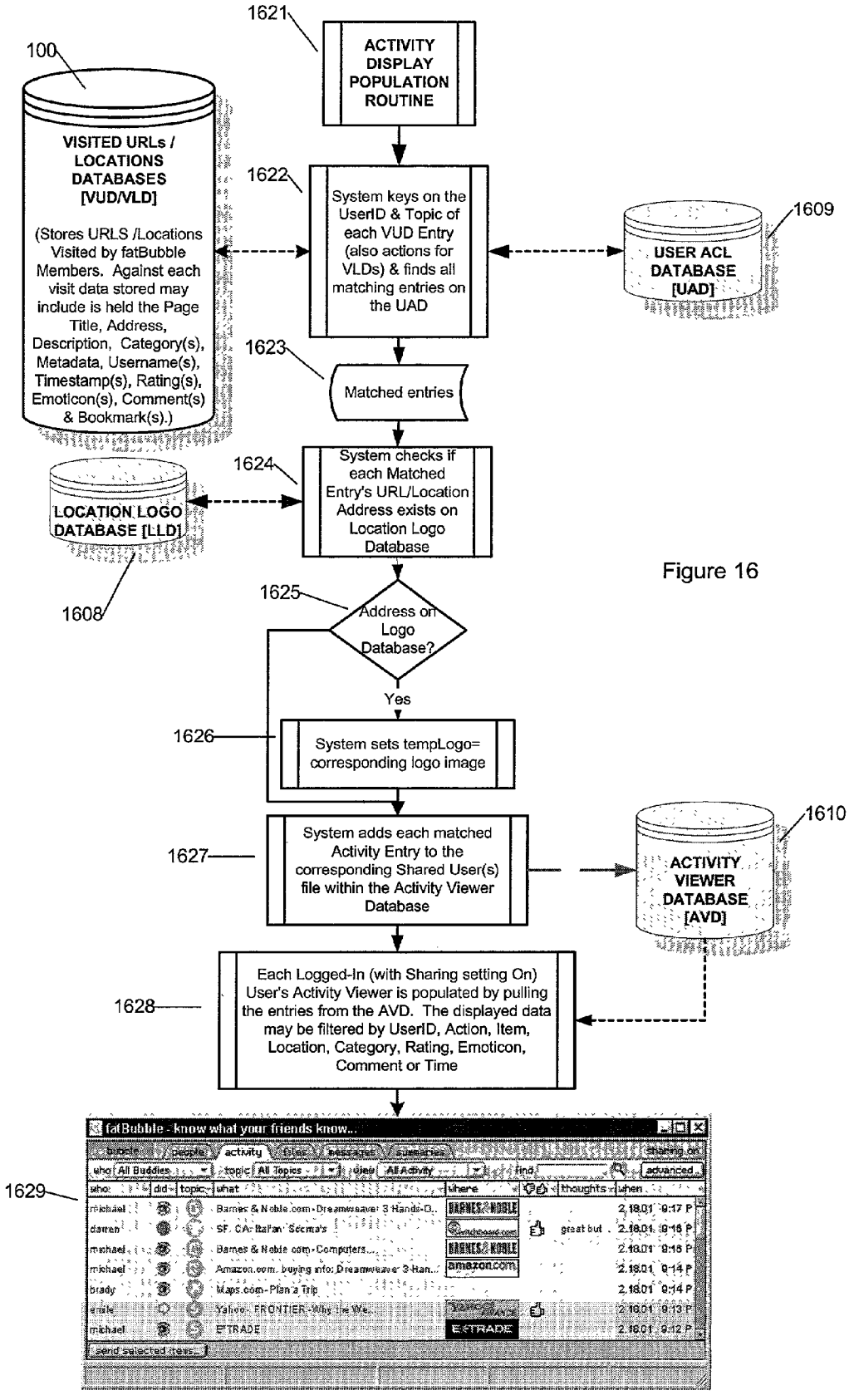

1621
ACTIVITY DISPLAY POPULATION ROUTINE
100
VISITED URLs / LOCATIONS DATABASES [VUD/VLD]
(Stores URLS /Locations Visited by fatBubble Members. Against each visit data stored may include is held the Page Title, Address, Description, Category(s), Metadata, Username(s), Timestamp(s), Rating(s), Emoticon(s), Comment(s) & Bookmark(s).)
1622
System keys on the UserID & Topic of each VUD Entry (also actions for VLDs) & finds all matching entries on the UAD
1609
USER ACL DATABASE [UAD]
1623
Matched entries
1624
System checks if each Matched Entry's URL/Location Address exists on Location Logo Database
LOCATION LOGO DATABASE [LLD]
1608
1625
Address on Logo Database?
Yes
1626
System sets tempLogo= corresponding logo image
1627
System adds each matched Activity Entry to the corresponding Shared User(s) file within the Activity Viewer Database
1610
ACTIVITY VIEWER DATABASE [AVD]
1628
Each Logged-In (with Sharing setting On) User's Activity Viewer is populated by pulling the entries from the AVD. The displayed data may be filtered by UserID, Action, Item, Location, Category, Rating, Emoticon, Comment or Time
1629
fatBubble - know what your friends know...

Figure 16

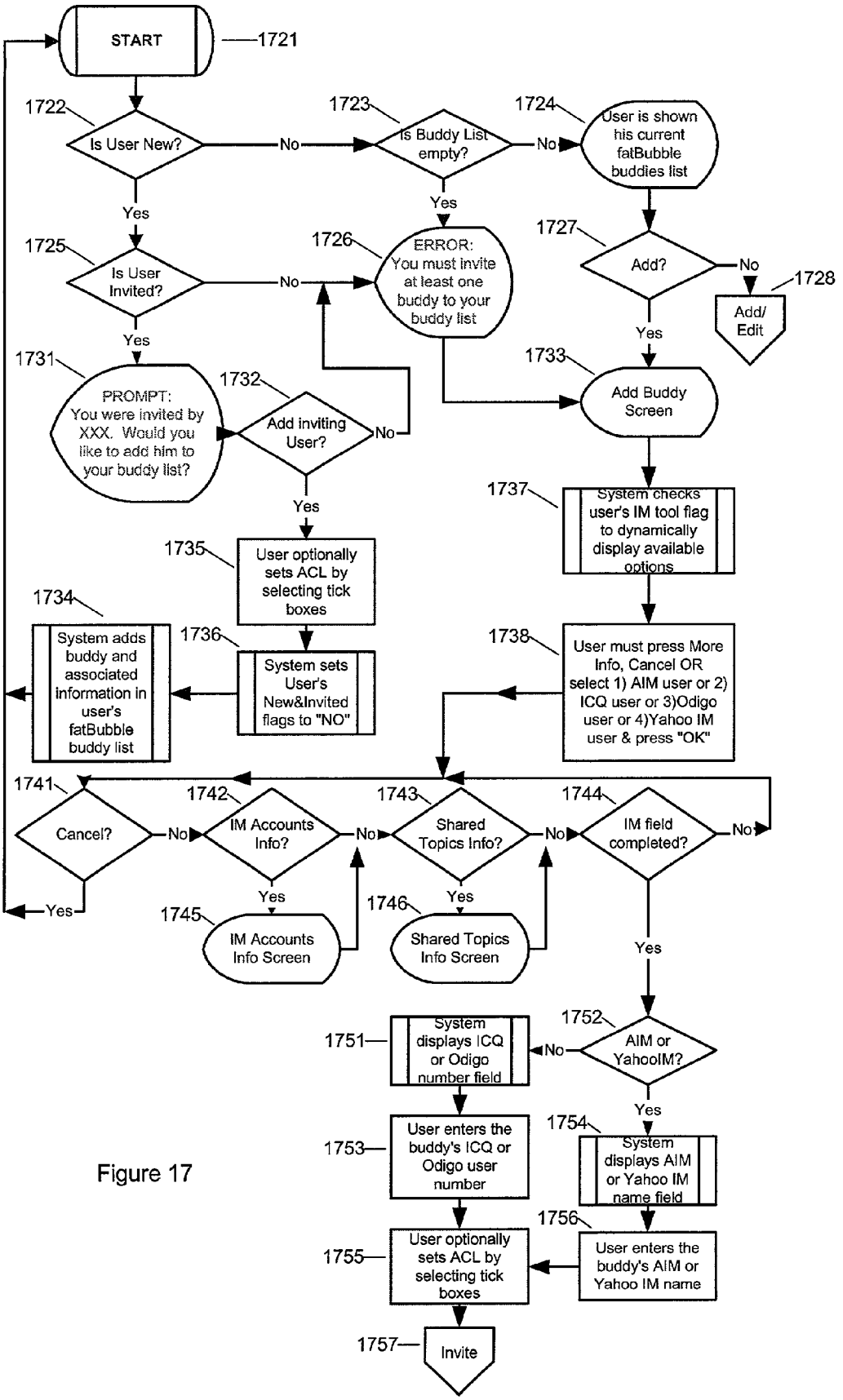

START
1721
1722
Is User New?
No
1723
Is Buddy List empty?
No
1724
User is shown his current fatBubble buddies list
Yes
Yes
1725
Is User Invited?
No
1726
ERROR: You must invite at least one buddy to your buddy list
1727
Add?
No
1728
Add/ Edit
Yes
Yes
1731
PROMPT: You were invited by XXX. Would you like to add him to your buddy list?
1732
Add inviting User?
No
1733
Add Buddy Screen
Yes
1737
System checks user's IM tool flag to dynamically display available options
1735
User optionally sets ACL by selecting tick boxes
1734
System adds buddy and associated information in user's fatBubble buddy list
1736
System sets User's New&Invited flags to "NO"
1738
User must press More Info, Cancel OR select 1) AIM user or 2) ICQ user or 3)Odigo user or 4)Yahoo IM user & press "OK"
1741
Cancel?
No
1742
IM Accounts Info?
No
1743
Shared Topics Info?
No
1744
IM field completed?
No
Yes
Yes
Yes
1745
IM Accounts Info Screen
1746
Shared Topics Info Screen
Yes
1752
AIM or YahooIM?
No
1751
System displays ICQ or Odigo number field
Yes
1754
System displays AIM or Yahoo IM name field
1753
User enters the buddy's ICQ or Odigo user number
1756
User enters the buddy's AIM or Yahoo IM name
1755
User optionally sets ACL by selecting tick boxes
1757
Invite

Figure 17

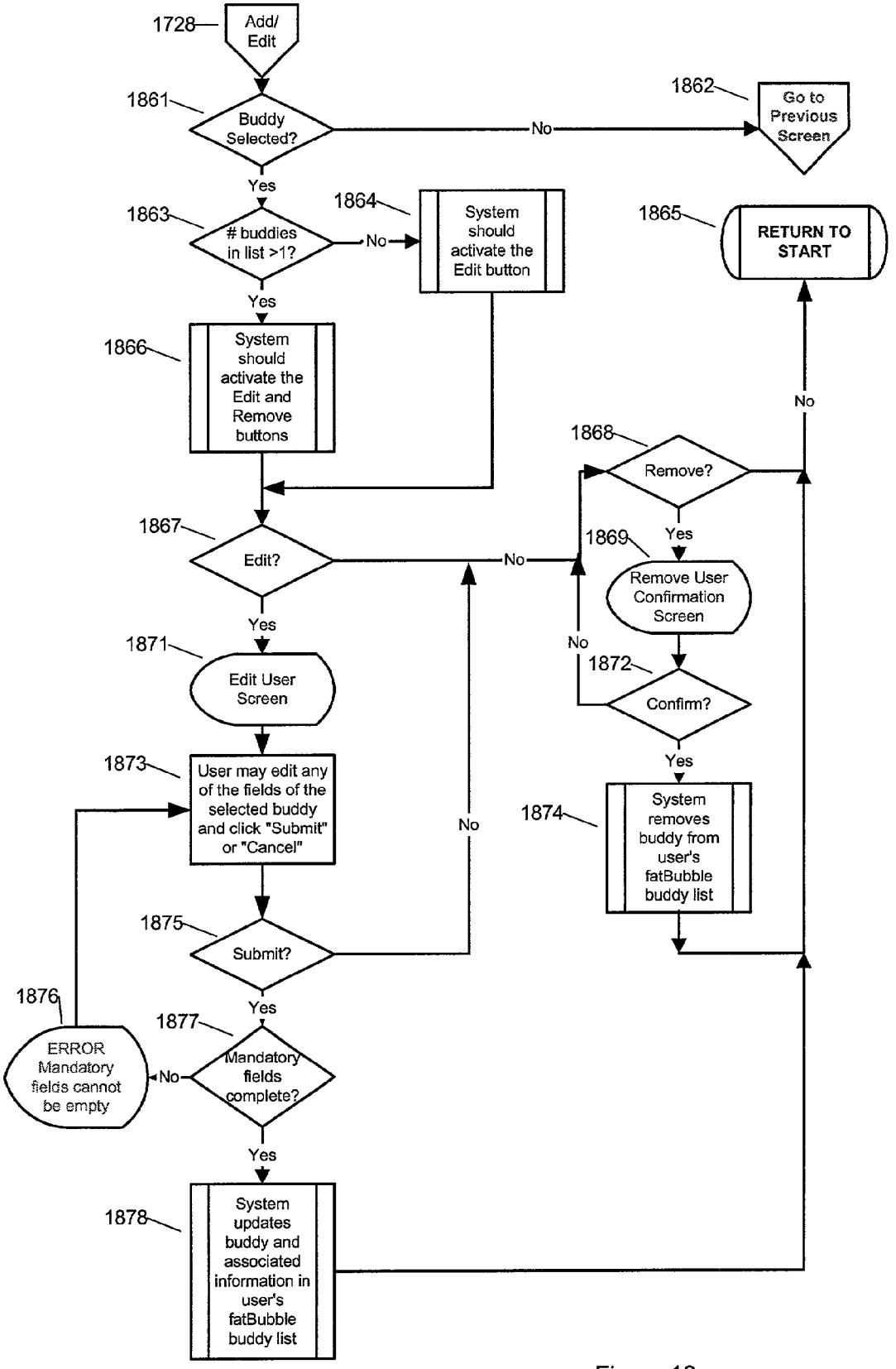

1728
Add/ Edit
1861
Buddy Selected?
No
1862
Go to Previous Screen
Yes
1863
buddies in list >1?
No
1864
System should activate the Edit button
1865
RETURN TO START
Yes
1866
System should activate the Edit and Remove buttons
No
1868
Remove?
1867
Edit?
No
Yes
1869
Remove User Confirmation Screen
Yes
No
1871
Edit User Screen
1872
Confirm?
Yes
1873
User may edit any of the fields of the selected buddy and click "Submit" or "Cancel"
1874
System removes buddy from user's fatBubble buddy list
No
1875
Submit?
Yes
1876
ERROR Mandatory fields cannot be empty
1877
Mandatory fields complete?
No
Yes
1878
System updates buddy and associated information in user's fatBubble buddy list

Figure 18

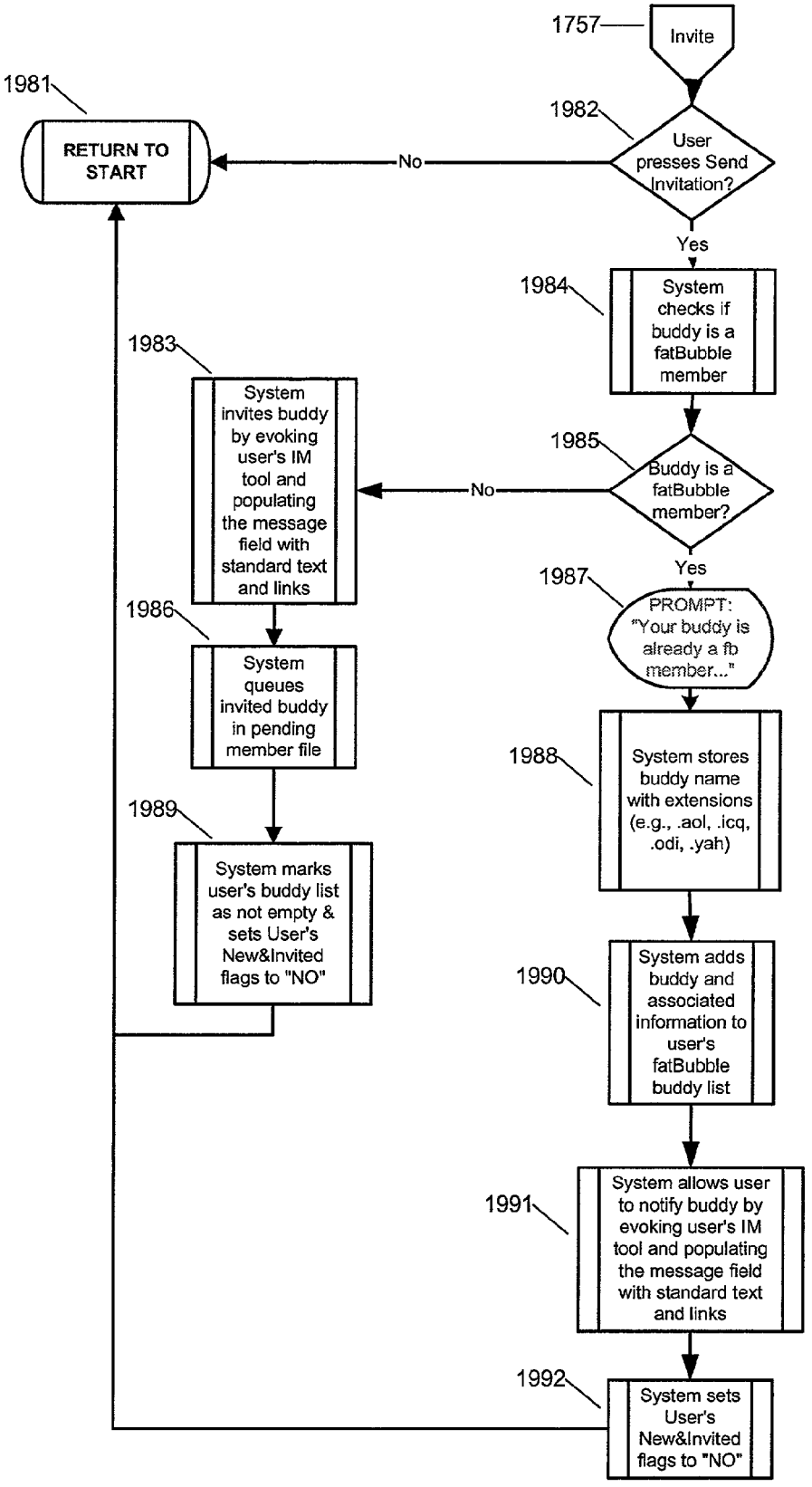

1757
Invite
1981
1982
RETURN TO START
No
User presses Send Invitation?
Yes
1984
System checks if buddy is a fatBubble member
1983
System invites buddy by evoking user's IM tool and populating the message field with standard text and links
1985
No
Buddy is a fatBubble member?
Yes
1987
PROMPT: "Your buddy is already a fb member..."
1986
System queues invited buddy in pending member file
1988
System stores buddy name with extensions (e.g., .aol, .icq, .odi, .yah)
1989
System marks user's buddy list as not empty & sets User's New&Invited flags to "NO"
1990
System adds buddy and associated information to user's fatBubble buddy list
1991
System allows user to notify buddy by evoking user's IM tool and populating the message field with standard text and links
1992
System sets User's New&Invited flags to "NO"

Figure 19

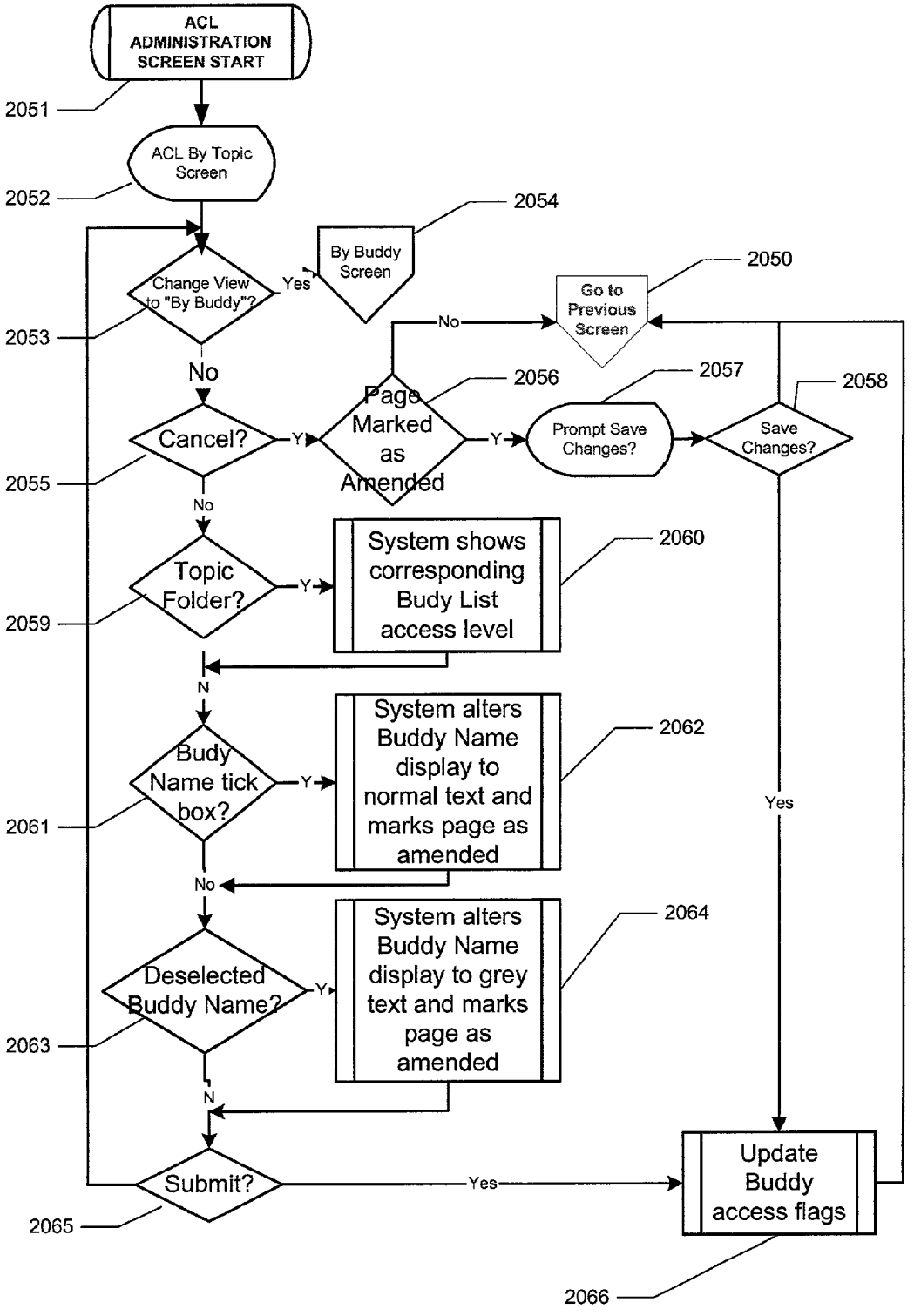

ACL ADMINISTRATION SCREEN START
2051
ACL By Topic Screen
2052
Change View to "By Buddy"?
2053
Yes
By Buddy Screen
2054
No
Go to Previous Screen
2050
No
Cancel?
2055
Y
Page Marked as Amended
2056
Y
Prompt Save Changes?
2057
Save Changes?
2058
No
Topic Folder?
2059
Y
System shows corresponding Budy List access level
2060
N
Budy Name tick box?
2061
Y
System alters Buddy Name display to normal text and marks page as amended
2062
No
Deselected Buddy Name?
2063
Y
System alters Buddy Name display to grey text and marks page as amended
2064
N
Submit?
2065
Yes
Update Buddy access flags
2066
Yes

Figure 20

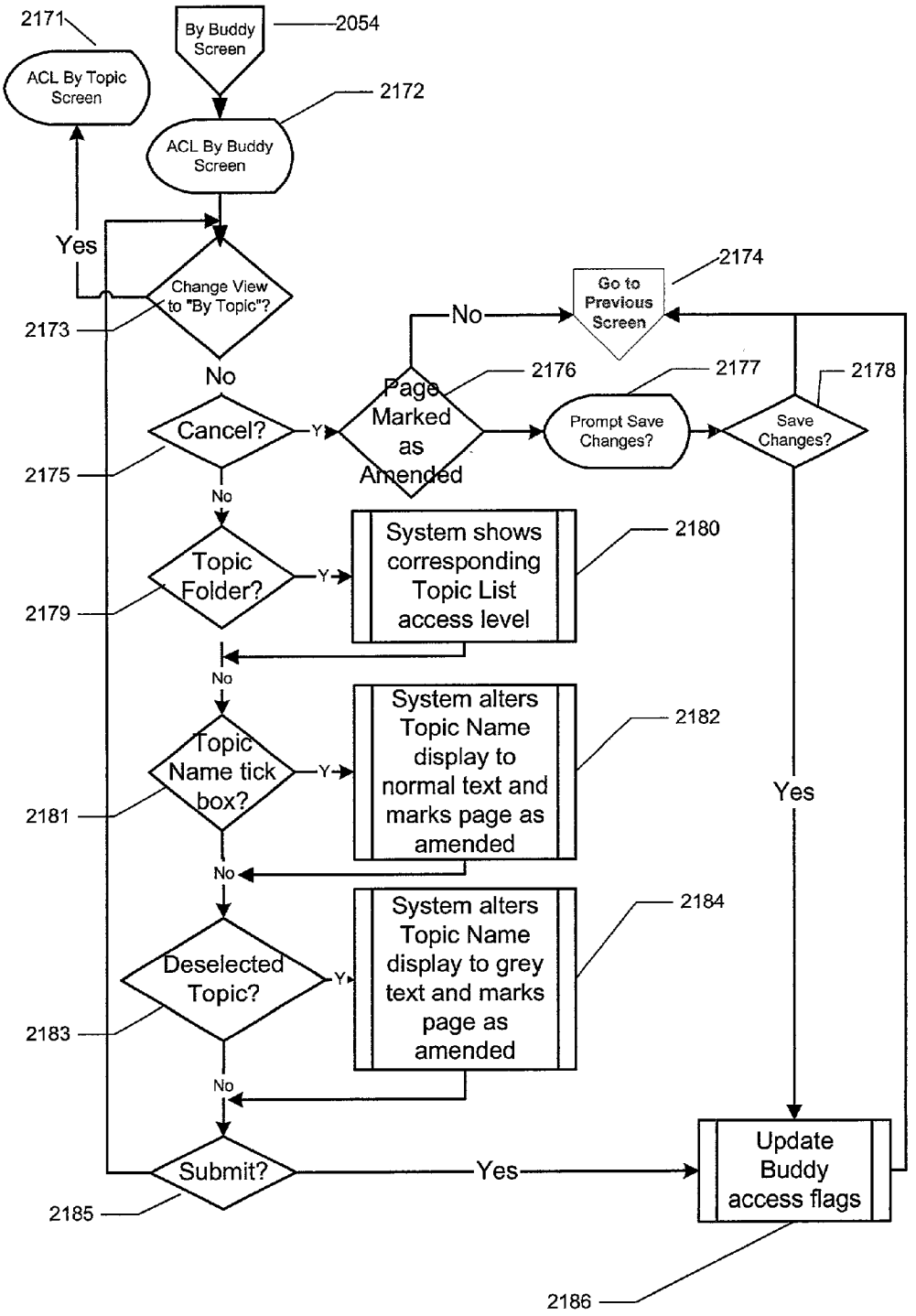

2171
ACL By Topic Screen
By Buddy Screen
2054
2172
ACL By Buddy Screen
Yes
Change View to "By Topic"?
2173
No
Go to Previous Screen
2174
No
Page Marked as Amended
2176
Prompt Save Changes?
2177
Save Changes?
2178
Cancel?
Y
2175
No
Topic Folder?
Y
2179
System shows corresponding Topic List access level
2180
No
Topic Name tick box?
Y
2181
System alters Topic Name display to normal text and marks page as amended
2182
Yes
No
Deselected Topic?
Y
2183
System alters Topic Name display to grey text and marks page as amended
2184
No
Submit?
Yes
2185
Update Buddy access flags
2186

Figure 21

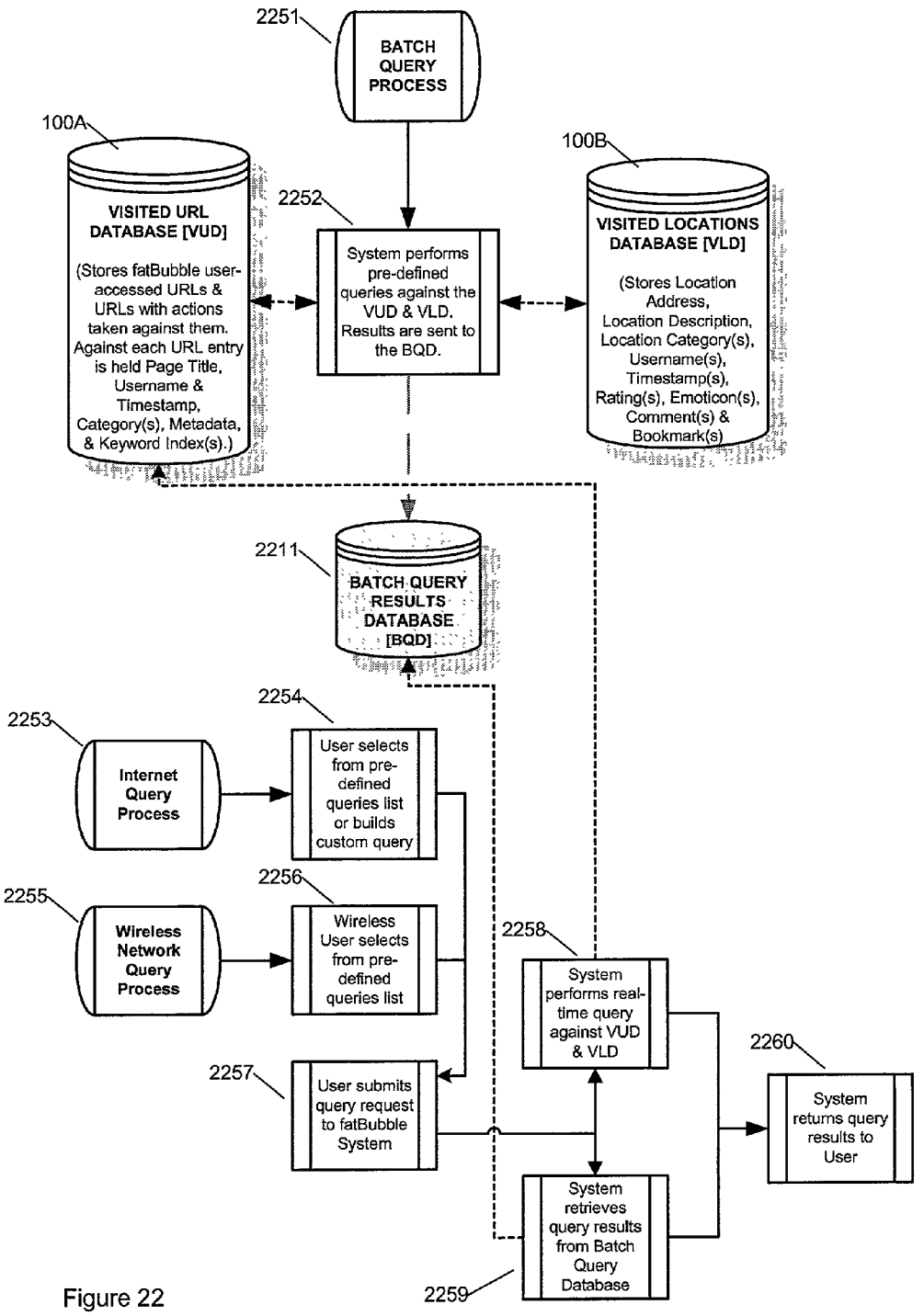

2251
BATCH QUERY PROCESS
100A
VISITED URL DATABASE [VUD]
(Stores fatBubble user-accessed URLs & URLs with actions taken against them. Against each URL entry is held Page Title, Username & Timestamp, Category(s), Metadata, & Keyword Index(s).)
2252
System performs pre-defined queries against the VUD & VLD. Results are sent to the BQD.
100B
VISITED LOCATIONS DATABASE [VLD]
(Stores Location Address, Location Description, Location Category(s), Username(s), Timestamp(s), Rating(s), Emoticon(s), Comment(s) & Bookmark(s)
2211
BATCH QUERY RESULTS DATABASE [BQD]
2253
Internet Query Process
2254
User selects from pre-defined queries list or builds custom query
2255
Wireless Network Query Process
2256
Wireless User selects from pre-defined queries list
2257
User submits query request to fatBubble System
2258
System performs real-time query against VUD & VLD
2259
System retrieves query results from Batch Query Database
2260
System returns query results to User

Figure 22

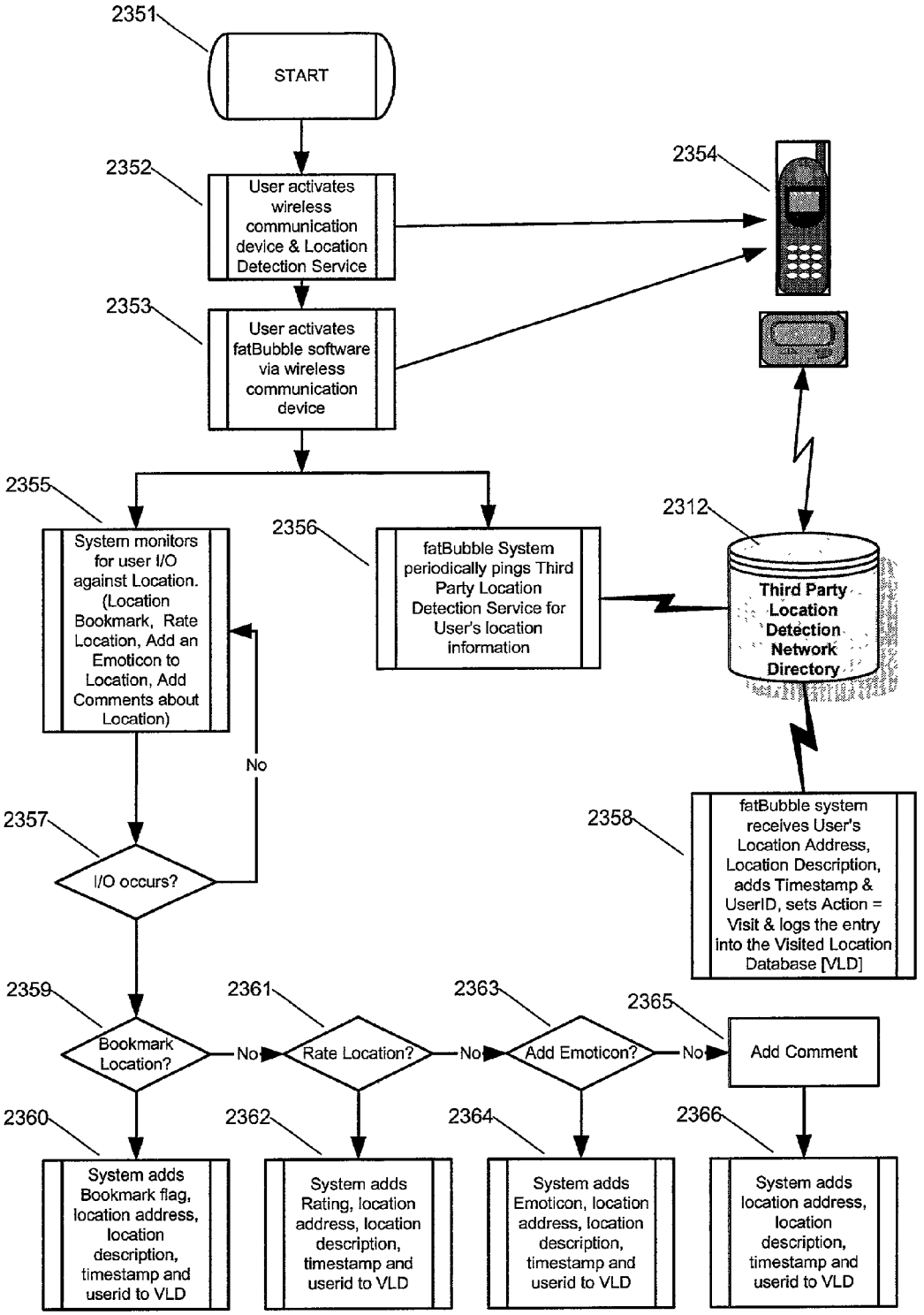

2351
START
2352
User activates wireless communication device & Location Detection Service
2354
2353
User activates fatBubble software via wireless communication device
2355
System monitors for user I/O against Location. (Location Bookmark, Rate Location, Add an Emoticon to Location, Add Comments about Location)
2356
fatBubble System periodically pings Third Party Location Detection Service for User's location information
2312
Third Party Location Detection Network Directory
No
2357
I/O occurs?
2358
fatBubble system receives User's Location Address, Location Description, adds Timestamp & UserID, sets Action = Visit & logs the entry into the Visited Location Database [VLD]
2359
Bookmark Location?
No
2361
Rate Location?
No
2363
Add Emoticon?
No
2365
Add Comment
2360
System adds Bookmark flag, location address, location description, timestamp and userid to VLD
2362
System adds Rating, location address, location description, timestamp and userid to VLD
2364
System adds Emoticon, location address, location description, timestamp and userid to VLD
2366
System adds location address, location description, timestamp and userid to VLD

Figure 23

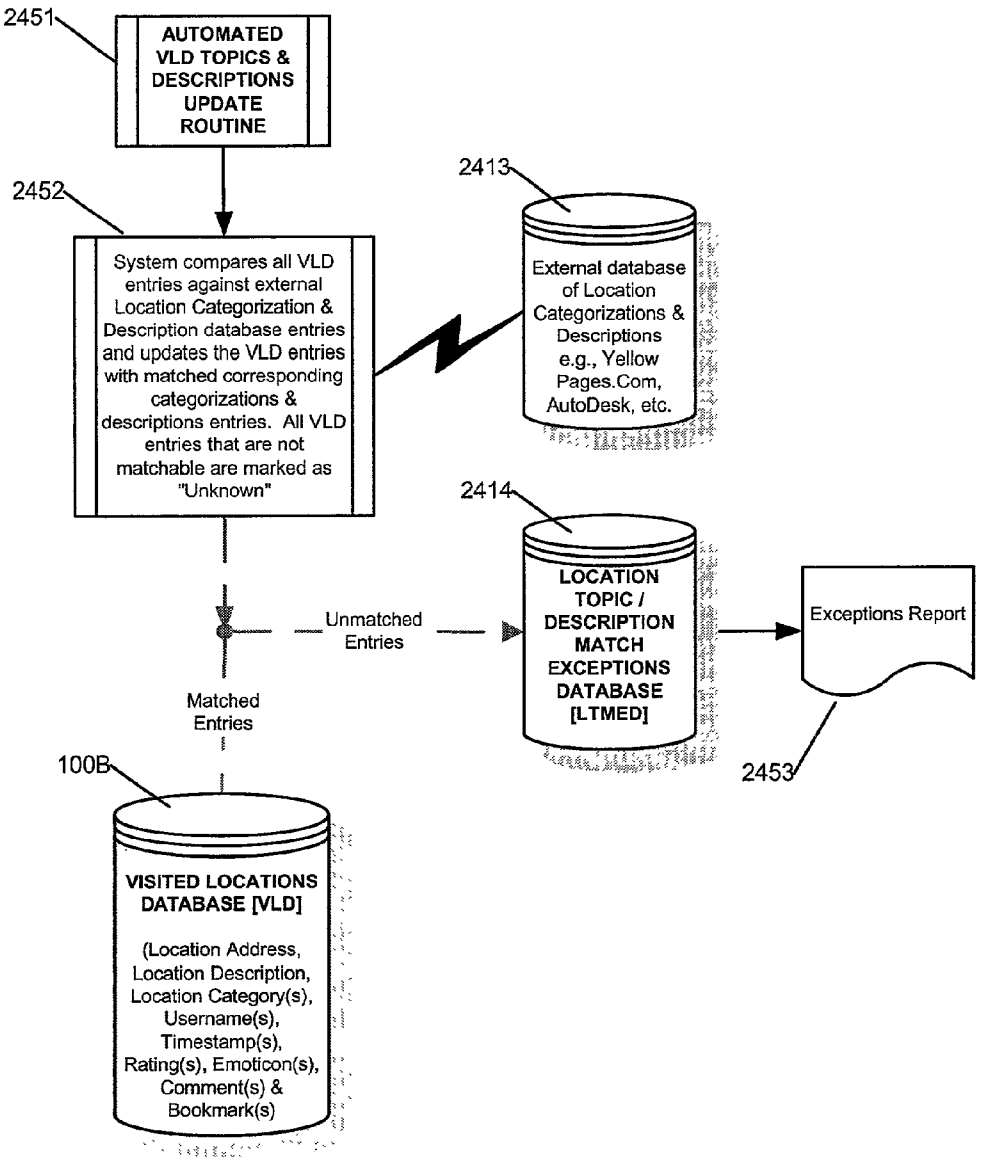

2451
AUTOMATED VLD TOPICS & DESCRIPTIONS UPDATE ROUTINE
2452
System compares all VLD entries against external Location Categorization & Description database entries and updates the VLD entries with matched corresponding categorizations & descriptions entries. All VLD entries that are not matchable are marked as "Unknown"
2413
External database of Location Categorizations & Descriptions e.g., Yellow Pages.Com, AutoDesk, etc.
2414
LOCATION TOPIC / DESCRIPTION MATCH EXCEPTIONS DATABASE [LTMED]
Exceptions Report
2453
Unmatched Entries
Matched Entries
100B
VISITED LOCATIONS DATABASE [VLD]
(Location Address, Location Description, Location Category(s), Username(s), Timestamp(s), Rating(s), Emoticon(s), Comment(s) & Bookmark(s)

Figure 24

METHOD AND APPARATUS FOR SELECTIVELY SHARING AND PASSIVELY TRACKING COMMUNICATION DEVICE EXPERIENCES

BACKGROUND OF THE INVENTION

The Internet has opened up new channels of communication and vectors of influence over decision-making. Web sites, peer-to-peer technologies, e-mail and instant messengers are new communication technologies, which have major impacts.

Advertisers and marketers have shown great interest in the influence of these new technologies. However, it is difficult to observe the channels of communication or vectors of influence using traditional market research methods.

Users of the new communication technologies have been particularly quick to embrace instant messengers. Users desire new ways of sharing with friends the experiences they have and discoveries they make using the new communication technologies.

Therefore, there is an opportunity to introduce a new technology, a method and device which provide a new way of sharing experiences, potentially allowing advertisers and marketers to study channels of communication and vectors of influence at the same time.

SUMMARY OF THE INVENTION

The present invention includes methods and devices for sharing communication device usage experiences, including computer usage experiences. Particular aspects of the present invention are described in the claims, specification and drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a block diagram of interrelated components of systems practicing aspects of the present invention.

FIG. **2** is a user interface for logging in or creating a new account.

FIG. **3** is a user interface for providing access to system features.

FIGS. **4** and **5** are user interfaces for inviting a "buddy" to join in practicing aspects of the present invention.

FIGS. **6** and **7** are user interfaces for sending a buddy an item.

FIGS. **8**A–**8**D are aspects of a user interface for administration of a buddy list.

FIG. **9** is a user interface for viewing activity of buddies. The interface illustrated applies as well to viewing of other item or location related data.

FIG. **10** is a user interface for viewing a so-called hits list, combined with a user interface for viewing activity. The interface illustrated applies as well to viewing of other item or location related data.

FIG. **11** is a user interface for viewing details regarding particular items. This user interface is combined, like FIG. **10**, with a user interface for viewing activity.

FIGS. **12**–**14** is flowcharts illustrating the capture of URL related data from a user. The actions illustrated by these flowcharts apply as well to capture of other item or location related data.

FIG. **15** is a flowchart of automated updating of a visited URL database ("VUD"), with exception processing. The actions illustrated by these flowcharts apply as well to updating of databases reflecting captures of other item or location related data.

FIG. **16** is a flow chart of an activity viewer. The actions illustrated by these flowcharts apply as well to viewing of other item or location related data.

FIGS. **17**–**19** are flow charts of buddy list and access control list ("ACL") administration.

FIGS. **20**–**21** is flow charts of access control list interface actions.

FIG. **22** is a flow chart of the batch and custom query processes.

FIG. **23** extends aspects of the present invention to wireless devices, such as cellular telephones and pagers.

FIG. **24** is a flow chart of populating the visited location database ("VLD").

DETAILED DESCRIPTION

The following detailed description is made with reference to the figures. Preferred embodiments are described to illustrate the present invention, not to limit its scope, which is defined by the claims. Those of ordinary skill in the art will recognize a variety of equivalent variations on the description that follows.

A common theme among aspects of the present invention is collecting data regarding a user's computer usage experience and sharing that data. So-called "buddies" identified on buddy lists of instant messaging products can share selected aspects of their computer usage experiences. Administrative tools and processes can be provided to set up selective collection and sharing of data. Collection tools and processes operate on a variety of computer usage activities and user responses to their computer usage experiences. Processing tools and methods filter, integrate and correlate the collected data. Display tools and processes make portions of the data accessible on a pre-defined basis, such as according to defined rights of buddies. Aggregation tools and processes assemble statistics about user experiences across different bases, such as buddy lists, categories of users, and all service participants.

DATA COMPILED

Aspects of the present invention include building and making accessible various databases and combinations of databases. The databases specifically described below are illustrated in one or another of the figures; reference numbers are provided for ease of reference. One database is a visited URL database ("VUD") **100**A. A VUD stores URLs visited by users, or by participants. More generally, a user could visit a web site, listen to or watch content, rate a site or content, assign an emoticon or quick comment to a site or content, send or bookmark a site or content or download data; a VUD entry could result. A rating may be thumbs up or thumbs down or its equivalent, a scaled alpha or numeric rating or its equivalent. An emoticon is an icon conveying a reaction, such as: ":)", ":(", ":\", "=)", "=(", etc. Quick comments may be user defined and later accessible through a menue, ush as a pull-down menu. In addition to URLs, the database stores additional information such as page title, address, description, categories applicable to the URL, metadata, names of users accessing the URL, timestamps of visits, ratings of the URL, emoticons evaluating the URL, comments on and bookmarks to the URL, or keywords for retrieval. The page title, address, description and metadata may be ascertained from visiting the URL itself. With

assistance of the URL's author, metadata may include suggested categorization. Alternatively, categorization may be provided by an existing content analysis provider, such as Yahoo or the Open Source Directory Project at www.dmoz.org **1506**. A further alternative is that content could be categorized by a service provider or other sponsor, either for web content or for intranet, extranet or other network content.

Another database used to practice aspects of the present invention is the visited location database ("VLD") **100**B. A VLD stores similar information for locations visited by users or participants carrying portable devices. For instance, a Bluetooth equipped cell phone or pager could interact with a location that a user entered. Walking in the door of a popular restaurant, nightclub or other location could trigger an interaction between a Bluetooth device and a Bluetooth access point sponsored at the location. The Bluetooth device could learn the location visited and report that location immediately or later when the device returned to the proximity of a home access point or the device docked with a home access point. Alternatively, the Bluetooth device could disclose its identity to a Bluetooth access point at a particular location and the access point could report the visit. The user of the Bluetooth device could have the same options for providing additional information regarding the location, as for URLs. The VLD also could store geographic information regarding the location, such as geo-coded data. Several equivalent methods of associating a portable device with a location are available. Sophisticated networks may fingerprint, triangulate or otherwise locate a wireless device based on radio signal characteristics. Sophisticated devices may include circuits that determine the device's location; these circuits may utilize GPS, DGPS, Loran or any other location fixing protocol. The physics of how the device and the location are associated are relatively unimportant; an independent service may be used to track locations visited by a user based on any of the protocols identified above or any other protocol.

The VUD and VLD databases are readily extended to a visited item database **100**, which could include items on a computer, intranet, extranet or any network. These items may be data such as multimedia files, XML documents, database searches or virtually any other material. One distinction between practicing aspects of the present invention and general database processing is storing user-based information, such as the user's pattern of visiting and the user's rating, emoticon or comments regarding an item and making stored, user-based information available to buddies. Collectively, VUDs, VLDs and visited item databases can be referred to as VXDs. Reference to one of the three VXDs is intended to refer to all three, unless the context makes it clear that only one of the three applies.

Access control lists ("ACLs") **102**, **103**, **104**, **1609** also can be maintained as databases. An ACL identifies buddies and controls their access to VUD, VLD, visited item and other activity-related data. A user could set up his or her own ACL via buddy list and access control list administration functions. An enterprise could set up ACLs for enterprise users. ACL-like data complied for instant messaging products could be accessed and utilized to compile ACLs for users or enterprises.

A URL logo database ("ULD") **101** can be useful for associating logos with web sites. The logos may be sponsors, advertisers or others who provide support for operation of a service practicing aspects of the present invention.

Item categorization for VUD, VLD or visited items can generate exception databases, such as an item match exceptions database (for instance, a URL match exceptions database ("UMED") **1505**) or a topic match exceptions database ("TMED") **1507**. These exception databases record data which require further attention after initial processing to update the VUD, VLD or a visited item database.

An activity viewer database ("AVD") **1610** can store information associating particular users with URLs, locations or items. Raw data regarding user activity is filtered and matched with entries from the VUD, VLD or visited item database to create the AVD. The AVD holds users' activity parsed into a format for display via the Activity Viewer. It includes the activity, internal flag settings, the URL, the page title, the logo, the username, the timestamp & category for an entry. If a user filters the display of data on the Activity Viewer, data is pulled from this database.

Batch query results can be stored in a database, a "BQD" **2211**. Pre-defined queries can be run against the VUD, VLD or visited item database. For instance, top 10 hits, top 50 hits or top 100 hits in a wide range of categories are most efficiently recalculated periodically on a batch basis, rather than in response to ad hoc inquiries.

Third party location detection data can be stored in a detection network directory **2312**. Third party data can be provided as received, on an interrupt-like basis, or in response to periodic requests, on a polling or batch basis. Location categorizations and descriptions **2413**, e.g., Yellow Pages.Com, AutoDesk, etc. can be used to provide supplemental information about locations.

Location/topic entries which require further attention, after processing to update the VLD, can be stored in another match exceptions database, a "LTMED" **2414**.

One aspect of practicing the present invention can include tying into a user's instant messaging products or, more generally, into the user's messaging facilities. For instant messaging ("IM"), users or participants typically set up so-called buddy lists. Other users or participants agree to participate in instant messaging. One IM user can send an instant message to another IM user, if their IM products are compatible. The two can carry on a dialog or a so-called "chat". More than two users may be included in a real-time chat, when the instant messaging product allows multiple participants. Examples of instant messaging products include AOL's Instant Messenger software, MSN Messenger software, Yahoo! Messenger software, America Online's ICQ software, Odigo's instant messenger software and Jabber's instant messenger software. Reciprocal inclusion on buddy lists typically involves a closer relationship between participants than inclusion on an e-mail mailing list or directory, but this is not necessarily the case. Buddy lists sometimes are shorter and more selective than general messaging lists or directories.

The present invention also may be applied to a user's messaging facilities by selectively enabling others listed on a general e-mail or messaging list or directory to participate. Selectively enabling others limits the intrusion on a user's privacy and limits various administrative (e.g., setup and administration) and responsive (e.g., junk mail) burdens. Alternatively, group functions used for other e-mail or messaging purposes can be a basis for defining rights to sharing of activity data.

OVERVIEW AND USER INTERFACES

FIG. **1** is a block diagram of interrelated components of systems practicing aspects of the present invention. Tracked activity may include Internet activity **120**, wireless network location track and interaction activity **121** and enterprise

intranet activity **122**. Activities tracked in these domains may include view, listen, rate, comment, assign emoticon, send, watch, download, bookmark or visit. A user views a URL, watches a visual presentation and listens to an audio presentation. A user visits a restaurant or other location. A user who views, watches, listens or visits may respond to their experience. A user's response may be to rate, comment, assign an emoticon, send information to a buddy, download data or bookmark an item for later access.

Data stored regarding an experience may include VUD, VLD or VXD databases **100**, a logo database for URLs, locations or items **101** and a variety of ACL databases. The access control lists can be maintained at the service provider level **104**, the enterprise level **102** or the individual user level **103**.

Data **130** reflecting individual experiences and aggregated experiences can be accessed or reported in a variety of ways. An activity viewer running on a user's system **131**, either fixed or portable, can appear in a window. Reports on locations, either the experiences of others visiting the location or the proximity of buddies or buddies of buddies can be reported automatically to Bluetooth enabled wireless devices **132** when such devices reach a location or are in contact with a location-sponsored Bluetooth access point. Wireless devices can be synchronized **133** when reasonable bandwidth is available to retain data that would be too voluminous to access via a low bandwidth connection. The interfaces of instant message tools **134** can serve as an output channel, as licensing arrangements become available. Physical reports **135** can be printed for analysis. These reports can cover analysis of interactions among participants and spreading of information from one user to others.

FIG. **2** is a user interface for logging in or creating a new account. In one embodiment, separate fields can be provided for user name **251** and password **254**. In other embodiments, these fields could be combined. After filling in identification data, a user may select a sign on link **253** or press the enter, return key or other key or may take another action such as speaking a command or winking an eye, which triggers processing of the completed fields. A link is provided for creating a new user **252**, which may be on demand or subject to an approval process. A new user can either be a new name for a registered user or a new registration. A user who forgot their password may use one of the commonly employed password recovery schemes, by selecting a forgotten password link **255**. An additional link for new user registration is provided **256**. In one embodiment, the system implements a strict, anonymous access privacy policy and does not collect any information about the user which could be used for identification of the user or compilation of a database of user-identified activities. In another embodiment, the user can chose the amount of information that the user provides and corresponding services that are enabled by providing information such as an e-mail address. In this second embodiment, the system can publish a range of privacy policies, including a default, and ask the user to opt-in to a specific privacy policy, which may include providing the user's name or e-mail address to a handful of select vendors that have products responsive or keyed to the user's shared activities.

FIG. **3** is a user interface for providing access to system features. The embodiment illustrated is a relatively low profile access window. A lower profile access window can be provided via an icon that is visually accessible, such as a floating menu bar having an always on top attribute or an icon in a system tray. Pressing a hot key is an alternative way to bring an access window into view. The access window illustrated in FIG. **3** has many features, which can be included in a wide variety of combinations. The service provider logo **360** doubles as providing access to features not immediately visible. These features may include maximize, minimize, quit or selection of a particular display format. A current selection **361** identifies a current context, such as viewing an aggregated list of the best Hip Hop music of 2000. Rating choices **362** such as thumbs up and thumbs down or emoticons allow a user to instantly express their view regarding the current context with a simple action, such as a single click of a mouse. A user who wants to say more about their experience can select a comments button **363** to activate a window for entering comments. A scroll button **364** also supports entry of free form comments, definition of user comments, selection from among user comments, or selection of emoticons, either system supplied or user defined emoticons. When the scroll button **364** is used, the default item may change from "comments." Other button choices **363** can be provided to a user, in addition to comments, such as emoticons or sending the current context to one or more buddies. A send button **365** is immediately accessible and activates a window for selecting recipients of information from the current context. The current context may be a list or a particular item, either from a hit list or the like or from the user's own activities.

The sharing status toggle **366** allows a user to turn sharing on and off. When sharing is on, rights defined in the ACL provide access for buddies to the user's activity. When sharing is off, the user's activity will not be shared with buddies. However, the user's activity may still be recorded to a tracking server either for aggregation or to be associated with the user but not reported to buddies. The user's options or access to information may be limited when sharing is off, tending to encourage the user to leave sharing activated. The window maximize control **367** allows direct access to maximizing the window to a pre-selected format.

Other aspects of this interface include space for a banner **368** (either static or moving), an invite button **369**, a hot list access **370**, a search entry window **371** and a search button **372**. The banner could be used to generate advertising revenue. The invite button **369** provides access to an invite interface such as FIG. **4**. The hot list access **370** provides access to one or more options and access formats for aggregate ratings of items. The ratings may reflect the frequency of access to an item or rating scores assigned by users. The rating scores may be thumbs up/down or any of the other scoring approaches mentioned above. The search entry window **371** accepts text and logical connectors. The find button **372** can be implemented to search titles of items accessed by participants, content of such items, the Internet, an intranet or another domain of interest.

FIGS. **4**–**5** are aspects of an interface for inviting others to become buddies. FIG. **4** is one of many possible initial invitation interfaces. An instant messaging select button **473** allows a user to identify an instant messaging product which maintains a list of buddies who can be invited to join a group. In some implementations, such as an enterprise implementation, a network directory such as a Novell, NT or Windows 2000 server directory of users may be accessed instead of an instant messaging product. In other implementations, an e-mail system user directory may be accessed for users to invite. Group membership for enterprise implementations alternatively may be administered by a security department, instead of individual users. A scroll button **474** allows a user who has more than one source of lists, such as more than one instant messaging product, to select the user to be invited. The screen name window **475** accepts a text

string. It may provide assisted field completion, including a list of near matches. For some implementations, such as AIM or Yahoo IM, the screen name may be a name. For other implementations, such as Indigo and ICQ, the screen name may be a number which ties to a name, which may be locally unique or not unique at all. These alternatives are further presented in the discussion of FIG. **17**, below. A send button **476** triggers transmission of an invitation to the identified buddy or other potential participant. The transmission may include a text message delivered by the instant messaging tool with a hyperlink for the recipient to sign up. The done button **477** signals that the user is done inviting buddies. A more information button **478** provides a help function.

FIG. **5** is an invitation follow-up interface. In some embodiments of the invitation process, there is no feedback from the instant messaging tool to an invitation process. The invitation process may query the user to determine whether an invitation was sent successfully. This interface provides a user with three alternative responses. If the instant message transmission was successful, the user indicates "yes" **582**. If the user attempted the instant messaging invitation, but the buddy was not available, the user may press the e-mail link **581**. Alternatively, the user may elect to invite the buddy again later **583**. Then, the buddy's name will appear on a buddy administration list (FIG. **8**A) with a link such as "resend invitation." The system may allow a user to clink on an entry in a list and resend the invitation, preferably when the invitee is on line. In other embodiments or using other instant messaging products, the IM product may assure delivery of the message when the recipient is not instantly available. Yet another approach is for the IM product to provide direct feedback to the activity sharing processes, so that an invitation or other follow-up interface appears only when needed and so that the user never needs to confirm that an invitation or item was successfully sent.

FIG. **6** depicts an interface for sending an item to a buddy. This interface may be invoked, for instance, by selecting the send button **365**. The item being sent is identified **691**. The item identification **691** may be linked to the item, a pull-down menu of items recently viewed or recently sent, or to a dialogue for selecting an item to send. The user selects between sending the item, a link to the item or other item-related information to a buddy who has enrolled to share activity data or to a person listed as an instant messaging buddy. In an enterprise implementation, as described above, the user might select an addressee from a network registry of users or an e-mail list. A personal note **695** may be sent along with an item. The system may be configured so that the personal note is not retained on the tracking server or so that it is retained. The send item button **696** signals that the items should be sent. The cancel button **697** indicates that the item is not to be sent. Either the send or cancel button can be accompanied by a confirmation screen.

FIG. **7** is a confirmation interface for items sent. The three choices are as in FIG. **5**: to confirm that the message was sent **799** "yes"; to resend the item by e-mail **798**; or to queue it to be resent later **799** "later."

FIGS. **8**A–**8**D depict interfaces for administration of buddy lists. The embodiments depicted are adapted to integration with instant messaging products. Slightly different embodiments would be better adapted to e-mail or other types of messaging facilities, such as Lotus Notes. FIG. **8**A depicts one embodiment of a buddy list. A link is provided **851** for inviting a new buddy. An alternate link for adding a user may appear in the list of buddies **856**. The columns provided in this embodiment include a tick box **852**, a buddy name **853**, and one or more instant messaging contact links **854**. The tick box **852** may be used to delete several selected buddies. The buddy name column **853** includes both buddy names and options to resend an invitation or add a new user. The buddy names may be active links which lead to additional interfaces, such as those depicted in FIGS. **8**B–**8**D. The contact column **854** lists one or more instant messaging contact links. The extension following the link may identify a particular instant messaging tool. The link may be in the form of the user ID applicable to a particular instant messaging tool. This interface also includes a link for deleting selected buddies **857** and for indicating completion of buddy list administration **858**.

FIG. **8**B is another of the buddy list administration interfaces. The name of the buddy being profiled appears as a header **861**. Optionally, a group of buddies may be administered. Related buddy administration screens include a buddy overview screen **862**, contact information **863**, topic sharing rights **864** and file sharing rights **865**. The user may either view **866** or edit **867** information regarding a buddy or group of buddies. More information can be obtained by clicking a link **868**. For particular buddy, a particular instant messaging tool is selected **869** and instant messaging ID is entered or selected **870**. When a buddy has more than one instant messaging tool or ID, a user may select a link for adding additional links **871**. The interface adds more rows, including more options for instant messaging tools and instant messaging ID's **872**, **873**. More than one instant messaging ID may be assigned to a buddy for a particular instant messaging tool. When the contact information is complete, the user selects the save changes link.

FIG. **8**C uses tick boxes to select files or folders to be shared by default. Both default and particular user or user group administration is supported. Tick boxes **881** and directory or file names **882** can be used. Additional files or folders can be added to a list **883**. Alternatively, a Windows Explorer-style file directory tree can be used to select files and directories, as is done for backing up and restoring files or directories. Additional fields and links in FIG. **8**C have the same placement and usage has in FIG. **8**B.

FIG. **8**D is a topic sharing interface. Both default and particular user or user group administration is supported. Tick boxes **891** and topic or sub topic names **892** can be used. Additional topics can be added to a list **893**. Alternatively, a browser-style bookmark tree can be used to select topics. Additional fields and links in FIG. **8**B have the same placement and usage as in the previous figures.

FLOWCHARTS

FIG. **9** is a user interface for viewing activity of buddies. The interface illustrated applies as well to viewing of other item or location related data. Tab **963** indicates that the activity-viewing mode of the interface is currently active. Other tabs may be provided for people **962**, files **964**, messages **965** or summaries **966**. The people tab **962** may invoke buddy list administration. The files tab **964** may invoke a hierarchical representation of the user's file system and selection boxes for designating directories and files, relative to particular buddies. The buddy may appear as columns adjacent to the file system representation or with a separate list, with selection boxes for users to be associated with particular rights. The message tab **965** may provide access to a message repository. Button **961** provides access to commands such as minimize, maximize, always on top, etc., which were previously discussed in the context of FIG.

3. The sharing button and indicator **967** behaves as previously described, also in the context of FIG. **3**. In this embodiment, additional controls are provided in a row below the tabs and sharing button. Three filters **971**, **972** and **973** are provided. The who filter **971** specifies whose activity is of interest: for instance, all buddies or a user-defined group of buddies. The topic filter **972** selects one or more pre-defined topics. The view filter **973** allows viewing of all or selected portions of a participant's activity by topic. For instance, only items bookmarked or sent to others may be of interest, in a domain having substantial activity. A keyword search is in effect a fourth filter, including the search term window **974**, the find button **975** and the advanced find button **976**.

Several rows of information responsive to the filters **971**–**976** appear in FIG. **9**. The columns of information displayed for each row include who **981** did **892** what **984** where **985** in what topic area **982** when **988**. Ratings **986** and comments **987** also may be provided. This interface can convey a substantial amount of information compactly. The who column **981** may use short labels, especially when the buddy list is short or subgroups of buddies are created. The did column **982** is compactly represented by an icon, from a recognizably short list of activity types. The icons depicted in this figure may signify viewing, visiting and sending items. Each of the activities mentioned above may be assigned an icon. The topic column **983** also is compactly represented by an icon. The variety of topics may be larger than the variety of activities. User defined subtopics may complicate the selection of icons. In some instances, a user may need to access more detailed information about an activity in order to understand the topic involved. This detailed information may be available through the topics filter **972** or by selecting a particular line including the icon. The what column **984** is an informative title for the item identified. For a URL, a page title may be more informative than the URL. Accordingly, page titles may be stored for URLs, to guard against loss of the page title when a content provider updates the page. Similarly useful shorthands for other types of items may be used. For instance, the name of a restaurant may be used instead of its Bluetooth access point address. The where column **985** is an opportunity to display banners, which may generate user impressions and revenue. Display of banners may be limited to vendors who pay a fee for preferential banner display. The rating column **986** may use a graphic, a color or a symbol to indicate a rating. In this embodiment, icons for thumbs up/down are depicted. The thoughts column **987** may support either free text comments or pick-list comments such as emoticons or user-defined quick comments. The when column **988** records a date and time of an activity. A send button **989** is included. In this embodiment, it appears as a large button on a bottom row, instead of as an icon near the sharing button. Row select commands, such as mouse-click, shift mouse-click and control mouse-click can be used to select one or more rows prior to selecting the send button.

FIG. **10** is a user interface for viewing a so-called hits list, combined with a user interface for viewing activity. The interface illustrated applies as well to viewing of other item or location related data. The bottom part of this interface combines features found in FIGS. **3** and **9**. Much of the two rows **1070** is taken from FIG. **3**. The who filter **1081** is from FIG. **9**. The item rows **1071** are generally as in FIG. **9**, with an added column for send buttons **1082**. Next and previous buttons **1084**, **1085** are provided for scrolling through activities.

The top part of the FIG. **10** interface is a hits list. The title line **1051** identifies the category of hits, in this instance a Top 10 list. Filter buttons are provided for activity type **1052**, group of persons sampled **1053** and location of persons sampled **1054**. When the desired filters are selected, the submit button **1055** signals for the screen to be refreshed. Three columns of information about these 10 hits are provided in this embodiment: rank **1061**, what **1062** and where **1063**. These columns have been explained above, except the ranking, which is ordinal. The coincidence in this example between data lines in the top 10 list and in the activities is unlikely ever to occur at random in actual use; the repeat of the same lines twice in a top 10 list also is unlikely to occur in actual use.

FIG. **11** is a user interface for viewing details regarding particular items. This user interface is combined, like FIG. **10**, with a user interface for viewing activity. The bottom part of this interface, **1070**, **1071**, is as in FIG. **10**. The top part includes two windows: **1151** through **1154** and **1155** through **1167**. The larger frame in the top part displays search results, annotated with buddy-related information. The search string appears at the top **1155** along with summary search statistics **1158**. Both category results **1156** and individual items have been returned in this example. One category **1156** has been returned. Three items responsive to the search have been returned, each beginning with a title **1157**. Information for an item may include a buddies rating **1161**. The number of buddies of the user who have commented on the site is indicated parenthetically. A summary "thumbs up" is indicated and a percentage of favorable ratings appear. (In actual use, 78% would not be reported from a sample of three ratings.) In addition to user-buddy ratings, other group ratings can be reported. In this instance, ratings aggregated against all registered users **1162** are reported. The second group could be user selected. In an enterprise implementation, it could be a division, subsidiary, a whole enterprise or any other predefined group. The ratings **1161**, **1162** need not be up-to-the-moment ratings, they may be compiled periodically in a batch mode. The information for an item may include a site furnished text **1163**, a review furnished description **1164**, one or more categories applicable to the item **1165** and links for retrieving a cached copy **1166** or similar pages **1167**. The cached copy retrieval **1166** may be an alternative to retrieving a live copy of the item **1157**, which is useful when an item is deleted or moved after it is indexed.

The inset to FIG. **11**, **1151**–**54**, is intended to provide detailed information related one or more of the items displayed. The columns of detailed information in this embodiment include who **1151**, when **1152**, rating **1153**, and comments or emoticons **1154**. If there are more users then can readily be displayed in a single inset, previous and next buttons can be used to scroll through a list. Alternatively, the list can be sized into a larger window. The list also could be filtered to select particular buddies or groups of buddies, date ranges, ratings or comments. The names of individual users and their comments can be linked to additional information or functions related to the individual and to the detailed free text comments.

FIGS. **12**–**14** are a flowchart illustrating the capture of URL related data from a user. The actions illustrated by this flowchart apply as well to capture of other item or location related data. FIGS. **12** and **13** are linked by the capture/track connector **1233**. FIGS. **13** and **14** are linked by the file & item connector **1355**. The flow in FIG. **12** begins with start **1201**. The user may visit a URL **1202** utilizing any browser, from a PC, telephone, PDA or other device. Others processes

described in the context of visiting or viewing a URL, it may be applied to other item types as well. The URL visited is captured **1203**. This capture may be accomplished via a browser plug-in, an independently running process, or in a variety of other ways. A page title or other descriptive text may be captured in addition to the URL address. The page title or other text is stored in a temporary variable, along with a timestamp and a user ID. In this embodiment, the capture process next has to determine whether in the user's sharing status is on **1204**. If the sharing status is off **1205**, the system sets the status of the item to private. In other embodiments, the system might all processing of the item. If the sharing status is on **1206**, the system sets the status of the item to public. After the status is been sent, the process tests to determine whether metadata associated with the URL provides a page title **1207**. If not **1208**, the system stores a null indicator in a temporary variable.

If the metadata provides a page title **1209**, the system stores the page title in a temporary variable. The system next compares the URL to entries in the VUD **1210**. If the URL is found in VUD **1211**, the system has to determine whether a page title is stored on the VUD **1221**. If there is a page title on the VUD **1222**, the system action depends on whether the page title variable has been set to null. If not, the system over writes the value on the VUD with the value of the temporary page title variable **1224**. If the temporary page title variable is null, the page title stored on the VUD is used **1223**. Next, the system determines whether the URL has been categorized on the VUD **1225**. If not, the system sets a temporary category variable to uncategorized **1227**. This is the same action that the system takes in the URL is not on the VUD **1211**. If the URL has been categorized on the VUD, the system sets a temporary category variable based on the contents of the VUD **1226**. The system checks to determine if the URL or a portion of the URL is logged in a logo database **1228**. The logo or ULD database **101** holds vendor logo images that correspond to the vendor's URLs. If the vendor has not arranged for its logo to be stored on the VLD **1229**, the system sets the temporary local variable to null **1231**. If there is a corresponding logo, the temporary variable is set to the corresponding logo image **1230**. The system sets a temporary activity variable to view **1232**, corresponding to viewing a URL. The flow continues in FIG. **13**.

FIG. **13** depicts processing of URLs behind the interfaces presented above. The user has several options after viewing a URL. Viewing the URL triggers background activities depicted in FIG. **12**. While the user is viewing the URL, system monitors for activity **1341**. If no activity is detected **1342**, monitoring continues. When activity is detected, the system determines the type of activity **1343**, **1345**, **1347**, **1349**, **1351**, **1353**. When the user moves to a new URL **1343**, the values stored in temporary variables for the old URL are added to the VUD **1344**. The new URL is processed in accordance with FIG. **12**. When the user selects an emoticon **1345**, the system processes the user's selection **1346**. The system may associate either a predefined emoticon with the URL or it may associate a user-defined emoticon with the URL. These values may be stored in a temporary variable until the user moves to a new URL or another user activity triggers storing data to the VUD. When the user decides to enter a free text comment **1347**, the system processes the free text **1348**. It associates a text string with the URL at a temporary location, which can later be transferred to the VUD. The system then resumes monitoring for URL activity **1341**. The user selection of rating **1349** is processed **1350** in much the same way as an emoticon. In the embodiment described here, the rating is either thumbs up for thumbs down, a binary rating. Multi-value ratings can also be processed, such as a scale of 1 to 5, 1 to 7, or 1 to 9. The system then resumes monitoring for URL activity **1341**. Choosing the send button **1351** causes two processing steps **1352**. One or more items in the current context are sent to a buddy and the activity of sending the items is reported to a tracking server to be recorded in the VUD. The system then resumes monitoring for URL activity **1341**. Processing that follows detection of a bookmark activity **1353** is similar to processing of a send activity. Either the instant messaging product or the system may process the actual creation of the bookmark. The activity of creating the bookmark is reported to a tracking server to be recorded in the VUD **1354**. Again, the system then resumes monitoring for I/O activity **1341**. Other activities, more often associated with an item other than a URL, are processed as depicted in FIG. **14**.

A variety of activities may be associated with items other than URLs. Depending on the type of item involved, the user may listen to or watch the item **1461**, download the item **1463**, purchase the item **1465**, put the item on a wish list **1467**, transfer the item to a mobile device, such as a cell phone or PDA **1469**, or select some other process **1471**. In some circumstances, an unrecognized activity may occur **1473**, which the system may either ignore or treat is an error condition. A listen to or watch activity **1461** causes the system to invoke a player and to record the action and properties of the item listened to or watched **1462**. The recorded information is forwarded for addition to the VUD. A download activity invokes a process, which records the download action and properties of the item downloaded **1464**. The recorded information is forwarded for addition to the VUD. A purchase activity **1465** invokes a process **1466**, which records the purchase action and properties of the item purchased. The recorded information is forwarded for addition to the VUD. A wish list activity **1467** invokes a wish list process **1468** to maintain and add to the user's wish list. The wish list can be maintained as part of the VUD or in a separate database. The information can be maintained redundantly as part of the VUD and as the result of a batch query. When the activity is to transfer the item to a mobile device **1469**, the system invokes a process for sending the information to the mobile device, records the action and properties of the items sent to the mobile device, and forwards the recorded information for addition to the VUD **1470**. The processing of each of these activities in FIG. **14**, with the possible exception of error processing **1473**, leads back to monitoring for activity **1341**.

FIG. **15** is a flowchart of automated updating of a visited URL database or VUD, with exception processing. The actions illustrated by these flowcharts apply as well to updating of databases reflecting captures of other item or location related data. An automated VUD updating routine **1511** updates keywords and metadata **1512** and topics **1513**. The input for updating is a set of VUD update records from processing of user activity. Updating **1514** may take place and real-time or on a batch basis. The updating of keywords and metadata utilizes a URL spider and an external search engine index to gather URL indices, keywords and metadata for each VUD entry being updated from the Internet **1522**. Unmatched entries are stored in an exceptions database **1505** and an exception report **1521** is generated. Data in the exceptions database ("UMED") may be manually added to the VUD. These exceptions also can be reprocessed for instance, if Internet access is restored or improved. Additional processing takes place to update topics associated with VUD entries **1513**. During processing **1515**, the system compares VUD entries against one or more external URL

categorization databases, such as the database provided by the Open Source Directory Project (www.dmoz.org). Matches are processed for addition to the VUD. VUD entries that do not match are marked as on categorized and stored in an exceptions database **1507**. Data in this topic exceptions database ("TMED") may be added manually to the VUD or reprocessed any time. Additional items to the exceptions database may cause an exceptions report **1523** to be generated.

FIG. **16** is a flow chart of an activity viewer. The actions illustrated by this flowchart apply as well to viewing of URL, other item or location related data. The activity display population routine **1621** supports the interface **1629**, which previously has been discussed in the context of FIG. **9**. The system keys **1622** on fields which provide access to the relevant database, such as the VUD, VLD **100** or VXD. For VUD entries, user ID and topic may be used as a key. Alternatively, the key may be fields which match filters available to or selected by the user. For a visited location, user ID and location or action may be used as a key. The system **1622** matches data from the relevant database **100** with the user ACL database **1609**. This matching may run periodically on a schedule set by the system administrator or it may run on demand. Data "matches" when the ACL database authorizes the requester or a particular user to have access (e.g., by user ID and topic) to the VXD entry and the status flag is public (as opposed to private) for the VXD entry. Matched data items are buffered **1623**. For each buffered entry **1624**, the system checks for the existence of a logo on the location logo database ("LLD") **1608**. Processing depends on whether or not a logo exists **1625**. If it exists, the system sets a temporary variable corresponding to the logo image retrieved from the database **1626**. Otherwise, the logo space is left blank. Each matched entry is added **1627** to the corresponding shared users file within the activity viewer database ("AVD") **1610**. The system populates activity viewers of logged-in users by pulling entries from the AVD **1628**. User ID, action, item, location, category, rating, emoticon, comment, time, or other relevant field may filter the displayed data from the AVD. The activity viewer of the user refreshes the activity display automatically. The frequency for this refresh may be set by a system administrator and may be modified by the user.

FIGS. **17**–**19** are flow charts of buddy list and access control list ("ACL") administration. The after the administration processes invoked **1721**, the process tests to determine whether the user of the system is a new user **1722**. A new user may either be invited or not **1725**. An invited user is prompted to a start their buddy list with the person who and issued the invitation **1731**. If the new user adds the person who invited them **1732**, the new user optionally defines access rights **1735**. The system then sets flags for new and invited status to "no" **1736**. The system adds the buddy and associated information in the user's buddy list to the ACL **1734** and loops back to the start **1721** with the user flagged as not new. In the processing of the new user, if the new user is not invited **1725** or declines to add the person who invited them to the new user's buddy list **1732**, an error message is displayed indicating that at least one buddy must appear on a buddy list **1726**. The user is routed to an add buddy screen **1733**. This add buddy screen **1733** also may be reached by a non-new user who has an empty buddy list **1723** through the invite buddy error message **1726** or after the non-new user is shown their current buddy list **1724** and elects **1727** to add additional buddies. Processing of a non-new user who declines to add additional buddies proceeds to **1728**, in FIG. **18**. After the add buddy screen, the system checks the user's IM tool flags to determine which instant messaging tools are available and to provide an adapted message to the user **1734**. The user's options **1738** may include asking for more information, canceling the addition of users or selecting an instant messaging tool such as AIM user, ICQ user, Odigo user or Yahoo IM user. The user may be required to confirm my pressing an OK button after selection of an instant messaging tool. If the user presses OK **1741**, instead of cancel, the system tests to determine whether the user requests more information **1742** and provides an information screen **1745** upon request. The system also tests to determine whether the user requests shared topics information **1743** and provides an information screen **1746** on request. After information has been provided the system tests determine whether the user has selected one of the instant messaging options **1744**. If not, the system loops and waits **1741**. If an instant messaging tool has been selected, the system determines which class of instant messaging tool has been selected **1752**. For some instant messaging tools, the system displays a name field **1754** and prompts the user to enter a name **1756**. For other instant messaging tools **1751**, the system displays a user number field and prompts the user to enter a buddy number **1753**. For both classes of instant messaging tools **1755**, the user optionally defines access rights. Processing then continues to test for inviting a new buddy **1757**, as described in FIG. **19**.

FIG. **18** includes logic for editing entries in the buddy list, following other processing **1728**. The system checks to determine whether one or more buddies have been selected **1861**. If not, processing **1862** returns to a previous screen. If a buddy has been selected, processing depends on the number of buddies in the list **1863**. If there are one or fewer buddies in the last **1864**, the system activates only the end button. If there is more than one buddy in the list **1866**, the system activates edit and remove buttons. The remove button is not activated for one or fewer buddies, as the system requires at least one buddy in a buddy list. The system checks to determine whether edit has been selected **1867**. If not, it checks to determine whether remove has been selected **1868**. If not, processing returns to the start **1865**. If remove has been selected **1869**, the system displays a confirmation screen and tests whether the remove command has been confirmed **1872**. If not, the system loops again to test whether remove has been selected **1868**. If confirmation is given **1874**, the system removes one or more buddies from the user's buddy list and returns to the start **1865**. Remove will not have been selected if edit is selected **1871**. The system responds to selection of edit with an edit user screen **1871**. The user responds to the screen by editing any the fields of the selected buddy and clicking submit or cancel. The system tests to determine whether submit has been selected **1875** and, if so, tests to determine whether mandatory fields have been completed **1877**. Mandatory fields may include the identity of the instant messaging tool and a user ID, either a name or user number, as appropriate. If some of the mandatory fields are incomplete, an error screen **1876** is displayed and the user is given a further opportunity to add any of the fields **1873**. If the mandatory fields are completed, the system updates the buddy and associated information in the buddy list **1878** and returns to the start **1865**. If the user clicks cancel instead of submit or otherwise fails to submit **1875**, processing proceeds to test whether remove has been selected **1868**. The processing from this point proceeds as described above.

FIG. **19** depicts logic for sending invitations to new prospective buddies. This logic complements other interface

processing **1757**. The system determines whether the user has selected the send invitation link **1982**. If not, processing returns to the start **1981**. If so, the system checks to determine whether the user being invited is already registered for services **1984**. The system uses the prospective buddy's IM tool ID as a key. If the prospective buddy has more than one IM tool, the system may either use only a primary IM tool ID or may use all listed IM tool ID's to check for current registration status. If the prospective buddy is not registered **1985**, the system invites the buddy by invoking the user's instant messaging tool and creating a message with standard text and a link to invoke a registration process **1983**. The system queues the invited prospective buddy in a file of pending invitations **1986**. The invited buddy's ACL and instant messaging ID will be stored against a temporary registration ID. When the invited buddy responds to the invitation, the system will use the temporary ID to match the invitee against the queue. After an invitation has been made, the system marks the user's buddy list as not empty **1989** and sets the user's new and invited flags to "no". For a the prospective buddy **1985** who is already registered, the system notifies the user of the prospective buddy's status **1987** and stores the buddy name with relevant information, such adds an identification of the instant messaging tool used by the buddy **1988**. The system adds the buddy and associated information to the user's buddy list **1990**. The system allows the user to send messages to the buddy, including a message regarding their ACL status **1991**. Either the user's instant messaging tool with standard text and links or an e-mail message may be used for this purpose. The system sets the user's new and invited flags to "no" **1992** and returns to start **1981**.

FIGS. **20**–**21** are a flowchart for access control list administration. In FIG. **20**, ACL administration begins with a start screen **2051**. One sensible default organization is by topic **2052**. In the "by topic" view, the system checks **2053** to determine whether a "by buddy" view has been selected. If so, logic for displaying and processing the "by buddy" view is invoked **2054**. If not, the system checks to determine whether the administration session has been canceled **2055**. If "cancel" has been selected, the system determines whether the page has been marked as amended **2056**. If the page has not been amended, the system returns to a previous screen **2050**. If it has been marked as amended, the system prompts the user to save changes **2057** and tests whether the user wants to save changes. If not, the system simply the reverts to a previous screen **2050**. If so, the system updates various access flags and related data **2066** before reverting to the previous screen **2050**. When "cancel" has not been selected, the system checks whether a topic folder has been selected **2059**. If so, the system shows the corresponding buddy list access level in a pane of the view screen **2060**. The system then determines whether tick boxes adjacent to any buddy name have been checked **2061**. If so, the display format of the buddy name may be altered to reinforce the tick mark and the page is marked as amended **2062**. Processing continues to determine whether a buddy name has been de-selected **2063**. If so, the display format of the buddy name may be altered to reinforce to the de-selection and page is marked as amended **2064**. Processing continues to determine whether "submit" has been selected **2065**. If not, processing loops to before **2053**. If so, the update path **2066** is followed.

In FIG. **21**, ACL administration proceeds from selection of the "by buddy" view **2054**. This view is displayed **2172**. The system determines whether the user has selected a change of view to "by topic", for instance. If so, the display is changed **2171**. If not, the system determines whether the user has selected "cancel" **2175**. If "cancel" has been selected, the system determines whether the page has been marked as amended **2176**. If the page has not been amended, the system returns to a previous screen **2174**. If it has been marked as amended, the system prompts the user to save changes **2177** and tests whether the user wants to save changes **2178**. If not, the system simply the reverts to a previous screen **2174**. If so, the system updates various access flags and related data **2186** before reverting to the previous screen **2174**. When "cancel" has not been selected, the system checks whether a buddy folder has been selected **2179**. If so, the system shows the corresponding topic list access level in a pane of the view screen **2180**. The system then determines whether tick boxes adjacent to any topic name have been checked **2181**. If so, the display format of the topic name may be altered to reinforce the tick mark, and the page is marked as amended **2182**. Processing continues to determine whether a topic name has been de-selected **2183**. If so, the display format of the topic name may be altered to reinforce the de-selection and the page is marked as amended **2184**. Processing continues to determine whether "submit" has been selected **2185**. If not, processing loops to before **2173**. If so, the update path **2186** is followed.

FIG. **22** is a flow chart of the batch and custom query processes. Batch processing of requests **2251** may be useful to reduce response time for certain processing-intensive queries. For instance, scoring the top 10 or top 100 hits in a category may require a substantial amount of processing which the user would be unlikely to endure. The selection of a hit list may be from a menu, which means that the number of processing-intensive queries is limited and manageable. The system performs predefined queries **2252** against the VUD **100**A and the VLD **100**B or any similar database on a batch basis. The results are sent to a database of batch query results ("BQD") **2211**. These predefined queries are accessible immediately to both Internet and wireless network queries. FIG. **22** distinguishes between Internet queries **2253** and wireless queries **2255**. Internet queries may include both predefined queries and custom-built queries **2254**. To the extent that wireless queries are hampered by limited bandwidth, wireless queries may be limited to predefined queries **2256**. The processing of both types of queries is essentially the same **2257**. The user submits a query to the system and the system either performs or real-time query **2258** or retrieves a predefined query from the batch query database **2259**. The system returns results of the query to the user **2260**.

FIG. **23** extends aspects of the present invention to wireless devices, such as cellular telephones and pagers. Processing of wireless location and action data begins at **2351**. The user's wireless communication device and location detection service is first activated **2352**. It is necessary for the user to have a wireless device **2354**, which supports a location detection service. This support may be by Bluetooth, GPS or any other location detection technology. Then, the link between location detection and activity sharing is activated **2353**. A login process may be automated to execute whenever the wireless device **2354** is activated. Given the activation of a wireless device, the system periodically receives information regarding the location of the wireless device **2356**. As described above, this may be on an interrupt, polling or periodic batch transfer basis. A location network directory **2312** is accessible, which reflects location of wireless devices **2354** and contains information such as the devices' location address, location description, a timestamp, and user ID **2358**. With this information, the system

sets the action or activity type to "visit" a location and logs an entry into a visited location database **2358**. The system also monitors **2355** for activity related to a location, such as bookmarking a location, rating a location, adding an emoticon or comments about the location. Activity monitoring **2355** continues when no input/output activity is detected **2357**. When input/output activity is detected, the system determines the type of activity. Typical activities include bookmarking **2359**, rating, or adding an emoticon **2363** or free text comment to a location reference. When a location is bookmarked **2359**, the system adds a bookmark flag, location address, location description, a timestamp and a user ID to the VLD or a buffer for later addition to the VLD. When a location is rated **2361**, the system adds the rating, location address, location description, a timestamp and the user ID to the VLD or a buffer for later addition to the VLD. When a location is flagged with an emoticon **2363**, the system adds the emoticon, location address, location description, a timestamp and the user ID to the VLD or to a buffer for later addition to the VLD. Similarly, when a user makes a comment on a location **2365**, the system adds the comment, location address, location description, a timestamp and the user ID to the VLD or to a buffer for later addition to the VLD. For each of these activities, fewer or more fields may be utilized in various embodiments.

FIG. **24** is a flow chart of populating the visited location database ("VLD"). The process for updating topics and descriptions begins at **2451**. The system compares **2452** all VLD entries or buffer entries for addition to the VLD against location category and location description database entries **2413**. It updates the matching entries and records to categorization and descriptions to the VLD. Unmatched entries are recorded in an exceptions database **2414**. This location-topic and location-description match exceptions database ("LTMED") may be used to generate an exceptions report **2453**. Matched entries are written to the VLD **100**B.

APPLICATION EXAMPLES

The interfaces and software described above support many methods and devices for sharing communication device and computer usage experiences. One type of sharing communication device user experiences is sharing computer usage experiences, including Internet browsing experiences. Whichever communication device is used, sharing may depend on registration by a user with a registration server. Registration may involve downloading client software to run on the user's system. For enterprise applications, registration may be handled by a system administrator and integrated or coordinated with registration for network login, e-mail or other messaging. In some embodiments, registration may include contractual terms which limit the use of information collected from the user. In other embodiments, registration may be designed to exclude collection of certain user information, such as the user's e-mail address, actual name or physical address. Some users may feel more comfortable registering with the system if registration excludes collection of any information that identifies the user in a manner adapted to direct marketing. Even if registration excludes initial collection of user identifying information, the user may be given the option of entering additional personal information for general use by the providers of the system or for restricted use, in accordance with contractual terms. The registration process may make the user aware that at least a portion of the user's experiences with a communication device, computer or Internet browser will be collected and shared. It also may make the user aware that information collected from the user will be aggregated with information collected from other users.

Sharing communication device experiences also may include accessing one or more messaging buddy lists associated with the user. Accessing pre-existing buddy lists provides a base for linking the user and buddies with whom tracking data may be shared. Buddy lists may be maintained by AOL's Instant Messenger software, MSN's Messenger software, Yahoo! Messenger software, America Online's ICQ software, Indigo's instant messenger software or Jabber's instant messenger software. More generally, message recipient lists maintained in e-mail systems, such as Microsoft's Outlook products or AOL's Netscape products may maintain the lists that are accessed. Messaging systems such as Lotus Notes also may maintain message recipient lists that the system can access to identify persons with whom tracking data may be shared.

Buddies or groups of buddies are given defined rights to access tracking data collected from the user. Defined rights of buddies to access tracking data may be based on content categories of material accessed. Examples of content categories or topics can be found in FIG. **8**D. Defined rights of buddies also could be based on keywords. Definition of rights to access tracking data collected from the user may have multiple aspects. Access may be restricted by the type of activity involved, such as viewing, listening, rating, commenting, assigning an emoticon, sending, watching, downloading, bookmarking or visiting. Access may be further restricted by when the activity potentially accessed took place. It may be restricted based on a value assigned to a rating or emoticon. It can also be restricted based on its original source. Activities marked private, instead of public, may never be shared, based on a user's decision to turn sharing off. There are many useful combinations of these approaches to define the rights of buddies or groups of buddies to access tracking data.

At least a portion of the user's computer usage experiences are tracked and reported to a tracking server. This tracking may be carried out by a module resident on the user's computer or by a device placed between the user's computer and an access point to the Internet. In an enterprise implementation, tracking can be carried out by a server or proxy server. The tracking data can be filtered before it is reported to the tracking server. Data may be filtered based on a sharing on/off option exercised by the user. It also may be filtered based on content categories. In some implementations, only those activities that fit content categories which the user agreed to share would be reported to the tracking server. Alternatively, activity could be reported to the tracking server that was never intended to be posted for access by buddies. The tracking server or a posting server could filter the information before posting it for buddies to access. The computer user experiences tracked could include viewing URLs, downloading files, listening to songs, viewing videos, making purchases, sending items from a user to their buddies, or general messaging between the user and buddies.

In addition to computer user experiences, mobile communication device locations can be tracked, using any of the technologies described above. Activities related to location may include visiting the location, rating, commenting on it, assigning an emoticon, or connecting with another buddy or buddy of a buddy at the location. Proximity to a location may be variation on visiting the location.

It further may be useful to categorize at least a portion of the tracking data by content. The categorized tracking data would be subject to filtering and sorting. Categorized track-

ing data also could be searchable by content category and date range. For instance, a particular buddy's viewing of stock-related sites containing the name "Cisco" during a one or two-month period could be located.

Tracking data can be posted, after filtering, for buddies to access according to their defined access rights. The interface for viewing activity reflected by the tracking data may include a send button, which allows a user to forward an item to a buddy, either with or without comment. Interface also may include rating an emoticon buttons. It may facilitate free text comments on an item. These functions may apply to selected groups of items, in addition to applying to individual items. The buttons for free text comments and the feature for adding notes to items sent to buddies allow annotation of items.

The tracking process further may include generating a full text index of items viewed. This indexing may be performed in the context to viewing URLs or, in an enterprise implementation, in the context of the viewing internal work product or summaries of internal work product. Automated some regeneration may be combined with indexing, so that summaries are indexed.

Additional functionality of the system, which passively tracks activities of registered users may include tracing the flow of information or data among registered users. Information which is sent from a user to a buddy may be annotated with a history of users who forwarded the information. Alternatively, it may include a first user who forward the information and the immediately previous forwarding user. Or, it could identify a limited number of previous forwarding users. If less than a will history of users who forwarded the information is included with information sent from a user to a buddy, an analysis server may use a combination of timestamps and forwarding information to determine the dissemination or diffusion information and the velocity at which it is disseminated. Social network theory provides a number of metrics for evaluating the dissemination or diffusion of information. The tracking capabilities which are an aspect of the present invention can readily be adapted to quantifying the relative influence of one or another user on their buddies, including the strength, frequency, extent and relative value of their influence. Certain users may be selected for introduction to information or new product releases. Certain users may be selected and rewarded as a result of efficient dissemination of information through their social network.

A system practicing aspects of the present invention can readily collect, collate and present user generated lists of superlatives regarding activities, products and services. List may be generated by time period, utilizing date stamps and activities, number of top items (10 or 50 or 100 top items) or other filtering criteria.

The availability of location information for mobile communication devices allows the system practicing aspects of the present invention to present information regarding buddies and buddies of buddies who may be present at the user's physical location. Based on tracking visits to locations, information can be generated such as a particular user's list of favorite restaurants or favorite boutiques. Patterns of visits to physical locations can be reported. Information can be presented to users based on locations recently visited.

Information associated with particular locations can be offered up to users of mobile communication devices, in a context sensitive mode. Categories of information such as buddies' ratings of nearby restaurants can be provided, utilizing location information generated from the mobile communication device and established buddy lists.

While the preceding example applications are cast in terms of a method, devices and systems employing this method are easily understood. A magnetic memory containing a program capable of practicing the claimed method is one such device. A computer system having memory loaded with a program practicing the claimed method is another such device. A system including a registration server and a tracking server practicing the methods described above is another such device.

While the present invention is disclosed by reference to the embodiments and examples detailed above, it is understood that these examples are intended in an illustrative rather than in a limiting sense. It is contemplated that modifications and combinations will readily occur to those skilled in the art, which modifications and combinations will be within the spirit of the invention and the scope of the following claims.

We claim:

1. A method of sharing computer user experiences, including:

communicating with a registration server to register a user, for automatic client-side collection of computer usage experiences for future sharing, wherein the computer usage experiences include one or more of browsing URLs or visiting a location with a location-aware device that records the visited location;

accessing one or more of the user's messaging buddy lists and selecting one or more buddies with whom to share the automatically collected computer usage experiences;

defining categories of computer usage experiences to be shared with particular selected buddies;

tracking automatically on the client-side at least a portion of the user's computer usage experiences and reporting the user's computer usage experiences to a tracking server to be published to the particular buddies in accordance with their defined categories of sharing.

2. The method of claim **1**, wherein the registration server and the tracking server are a single server.

3. The method of claim **1**, wherein the registration server and the tracking server are distinct servers.

4. The method of claim **1**, wherein registering the user excludes collection of the user's e-mail address.

5. The method of claim **1**, wherein registering the user excludes collection of the user's actual name.

6. The method of claim **1**, wherein registering the user excludes collection of the user's physical address.

7. The method of claim **1**, wherein registering the user excludes collection of any information that identifies a user in a manner adapted to direct marketing.

8. The method of claim **1**, wherein registering the user further includes establishing an anonymous unique identifier for the user.

9. The method of claim **8**, wherein reporting the tracking data includes reporting the anonymous unique identifier.

10. The method of claim **1**, wherein the messaging buddy list is maintained by AOL's Instant Messenger software.

11. The method of claim **1**, wherein the messaging buddy list is maintained by MSN Messenger software.

12. The method of claim **1**, wherein the messaging buddy list is maintained by Yahoo! Messenger software.

13. The method of claim **1**, wherein the messaging buddy list is maintained by America Online's ICQ software.

14. The method of claim **1**, wherein the messaging buddy list is maintained by Odigo's instant messenger software.

15. The method of claim **1**, wherein the messaging buddy list is maintained by Jabber's instant messenger software.

16. The method of claim 1, wherein the rights of the buddies are defined by content category of the user's computer usage.

17. The method of claim 1, wherein the rights of the buddies are defined by appearance of one or more keywords on pages corresponding to URLs viewed.

18. The method of claim 1, wherein the rights of the buddies are defined by activity type of the user's computer usage.

19. The method of claim 1, wherein the user utilizes a computer and tracking is carried out by a module resident on the computer.

20. The method of claim 1, wherein the tracking is carried out by a device placed between a computer utilized by the user and an access point to the Internet.

21. The method of claim 1, wherein the computer usage experience tracked is filtered before it is reported to the tracking server.

22. The method of claim 1, wherein the computer usage reported is filtered after it is reported to the tracking server and before it is posted for the buddies to access.

23. The method of claim 1, wherein the messaging buddy list is maintained by an instant messenger software.

24. The method of claim 1, further including sending tracking data regarding one of a user's computer usage experiences to one or more buddies.

25. The method of claim 1, further including categorizing at least a portion of the tracking data by content and sorting the tracking data by content category.

26. The method of claim 1, further including categorizing at least a portion of the tracking data by content and making the tracking data searchable by content category and date range.

27. The method of claim 1, wherein posting further includes providing annotation tools for associating notes with individual tracking data entries.

28. The method of claim 1, wherein posting further includes providing annotation tools for associating ratings with individual tracking data entries.

29. The method of claim 1, wherein posting further includes indexing text portions of at least a portion of pages reported from tracking the user's Internet usage.

30. The method of claim 29, wherein text indexing is limited to pages reported from tracking as having been annotated or forwarded by the user.

31. A method of sharing Internet browsing experiences, including:

tracking automatically with a client-side application at least a portion of a user's Internet usage and reporting the tracking data to a server;

categorizing at least a portion of the reported tracking data by content category;

presenting to the user a history of the reported tracking data, with tools for searching and forwarding the tracking data;

receiving from the user data identifying of one or more persons on the user's buddy lists and authorizing the persons to receive tracking data;

responsive to a user request, sending one or more entries from the history of the reported tracking data to the authorized persons.

32. A method of sharing computer user experiences, including:

registering a user with a registration server to collect and share visited location data using a client-side application collected while visiting a location with a location-aware device that records the visited location;

accessing one or more of the user's messaging buddy lists to identify one or more buddies with whom the tracking data may be shared;

defining rights of the buddies to access the visited location data;

posting at least a portion of the user's visited location data for the buddies to access according to their defined rights.

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