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(54) **MANAGING INVENTORY DATA FOR A DISTRIBUTED CACHE PROVIDED BY A PLURALITY OF WIRELESS MOBILE DEVICES**

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H04W 76/02 (2009.01)

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CPC ***H04L 67/1097*** (2013.01); *H04W 8/005* (2013.01); *H04W 76/023* (2013.01)

(58) **Field of Classification Search**
CPC . H04L 67/1097; H04W 8/005; H04W 76/023
USPC 709/202, 224, 225, 231
See application file for complete search history.

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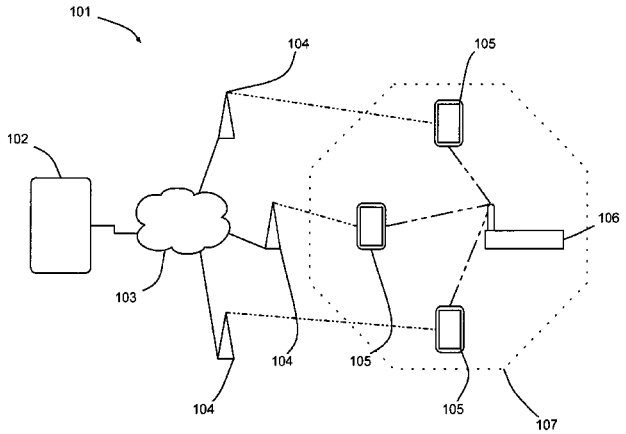
(74) *Attorney, Agent, or Firm* — Eustace P. Isidore; Yudell Isidore PLLC

(57) **ABSTRACT**

An apparatus and computer program product are disclosed for distributing inventory data for a distributed cache provided by a plurality of wireless mobile communication devices. A first inventory data is received from a first wireless mobile communication device, and a second inventory data is received from a second wireless mobile communication device. The first inventory data and the second inventory data are compared to identify one or more matching data resources. In response to identifying one or more matching data resources, a matching inventory data that identifies the one or more matching data resources is sent to the first wireless mobile communication device. The matching inventory data enables the first wireless mobile communication device to access each of the one or more matching data resources stored on the second wireless mobile communication device.

19 Claims, 8 Drawing Sheets



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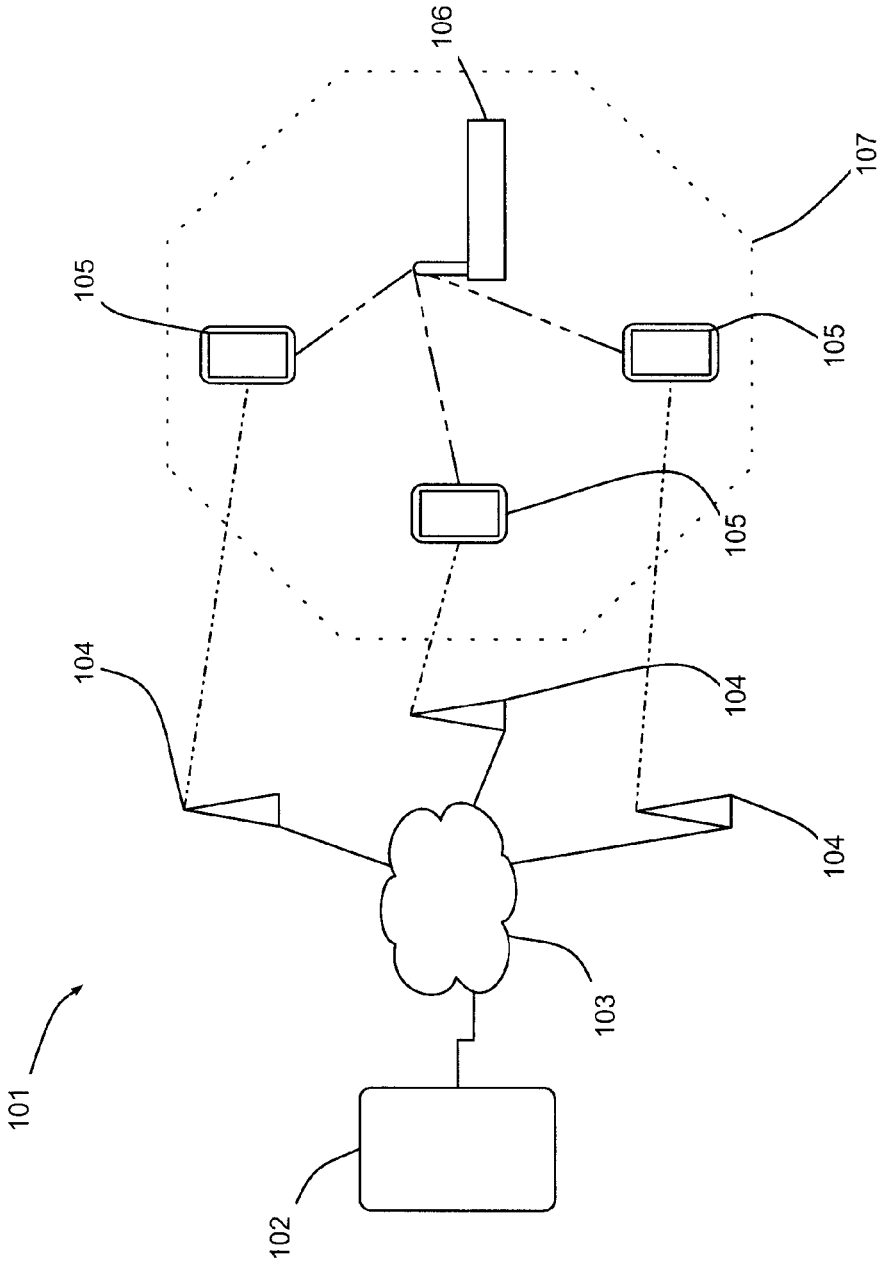

Figure 1

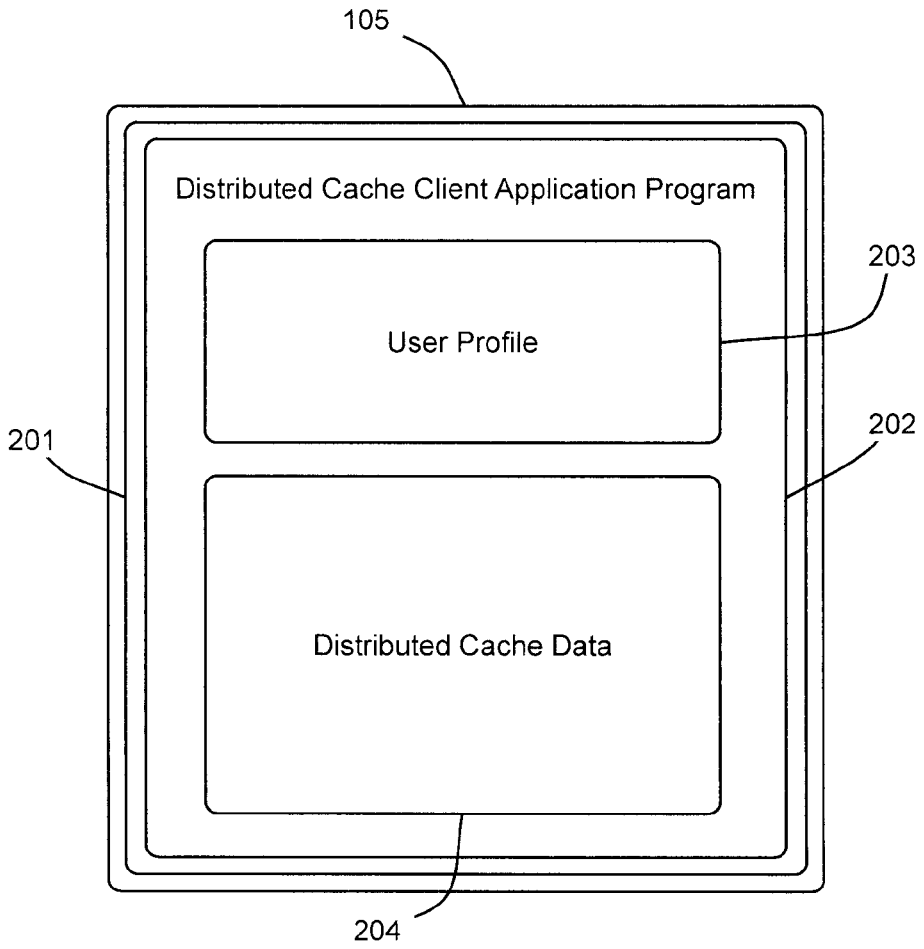
105
Distributed Cache Client Application Program
User Profile
203
201
202
Distributed Cache Data
204

Figure 2

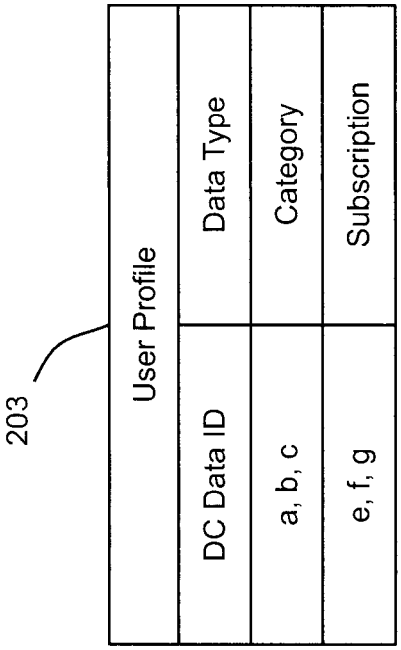
203
User Profile
DC Data ID
Data Type
a, b, c
Category
e, f, g
Subscription

Figure 3

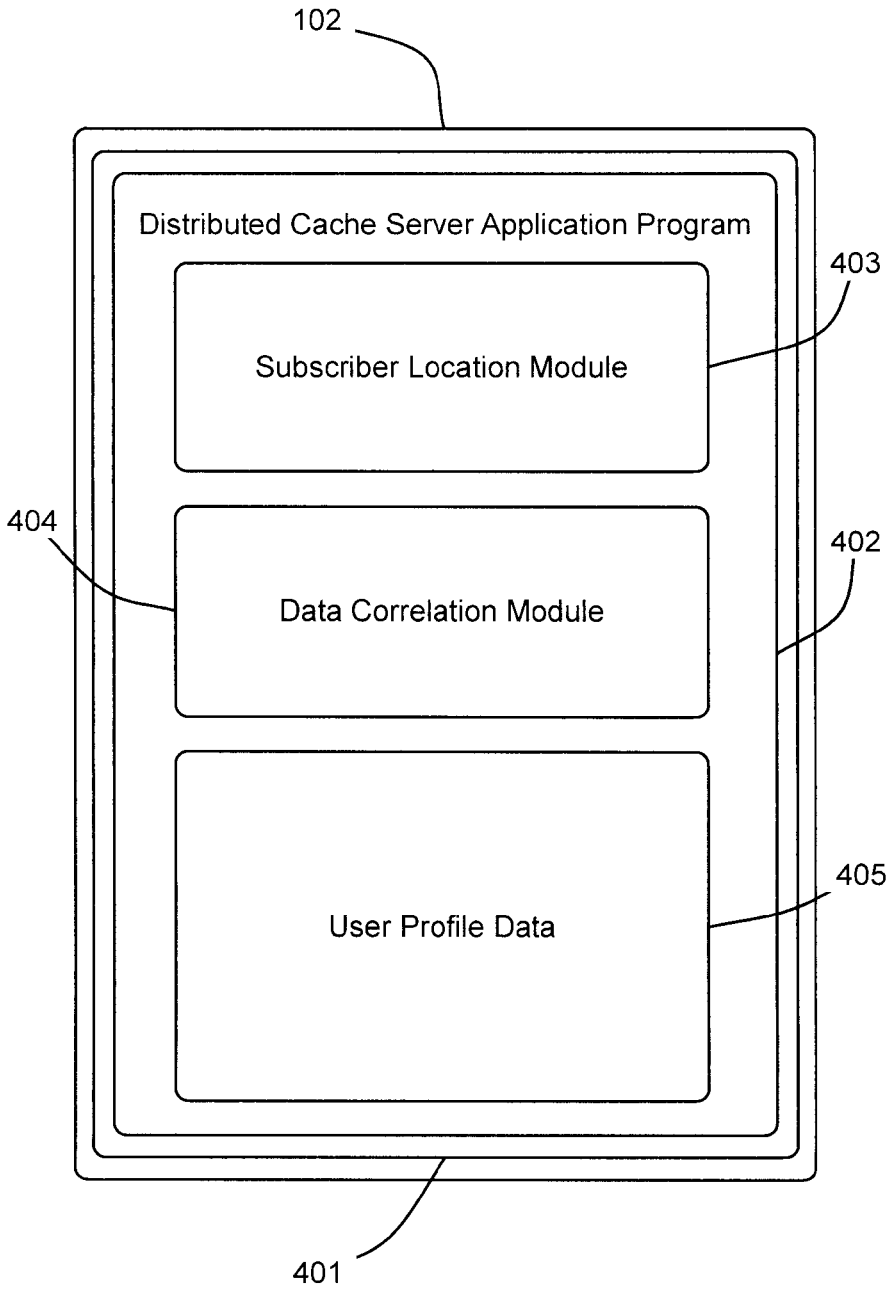
102
Distributed Cache Server Application Program
403
Subscriber Location Module
404
402
Data Correlation Module
405
User Profile Data
401

Figure 4

405

User Profile Data

User ID	Location	DC Data ID	Data Type
1	A	a, b, c	Category
		e, f, g	Subscription
		h, i, j	Data
2	B	a, b, k	Category
		l, l, m	Subscription
		n, o, p	Data
3	C	q, r, s	Category
		t, f, u	
		v, i, w	Data

Figure 5

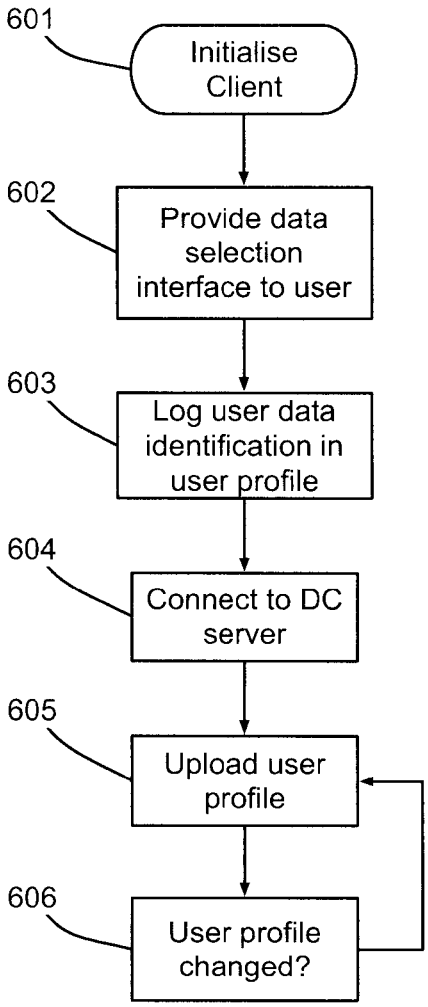
601
Initialise Client
602
Provide data selection interface to user
603
Log user data identification in user profile
604
Connect to DC server
605
Upload user profile
606
User profile changed?

Figure 6

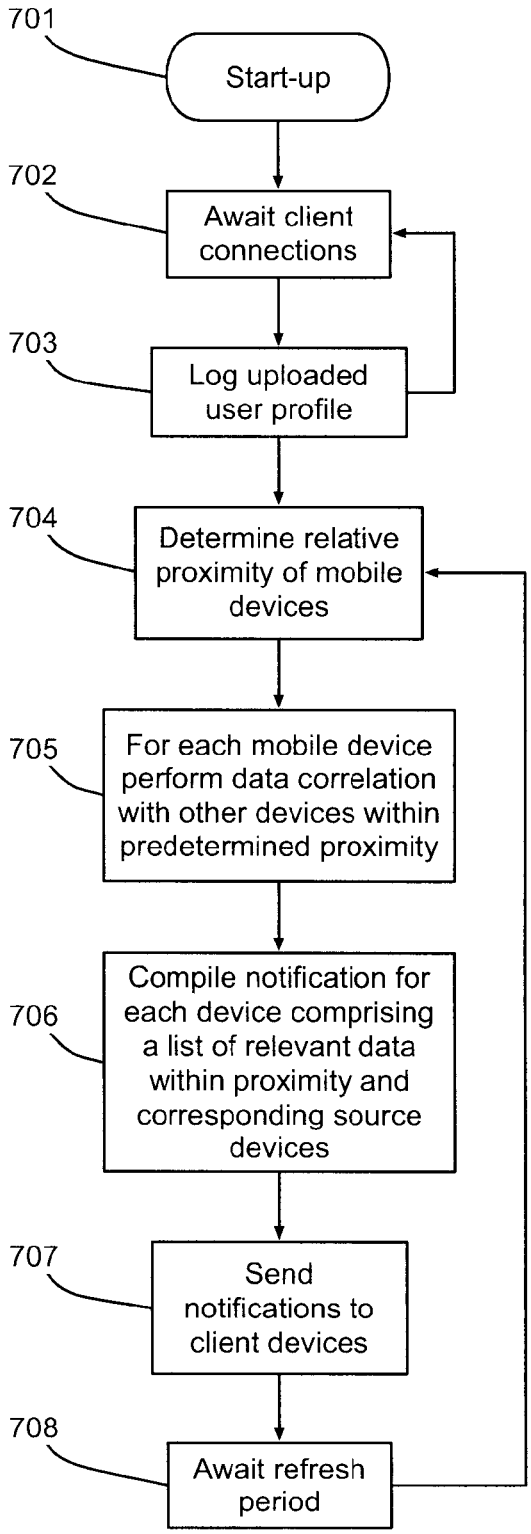
701
Start-up
702
Await client connections
703
Log uploaded user profile
704
Determine relative proximity of mobile devices
705
For each mobile device perform data correlation with other devices within predetermined proximity
706
Compile notification for each device comprising a list of relevant data within proximity and corresponding source devices
707
Send notifications to client devices
708
Await refresh period

Figure 7

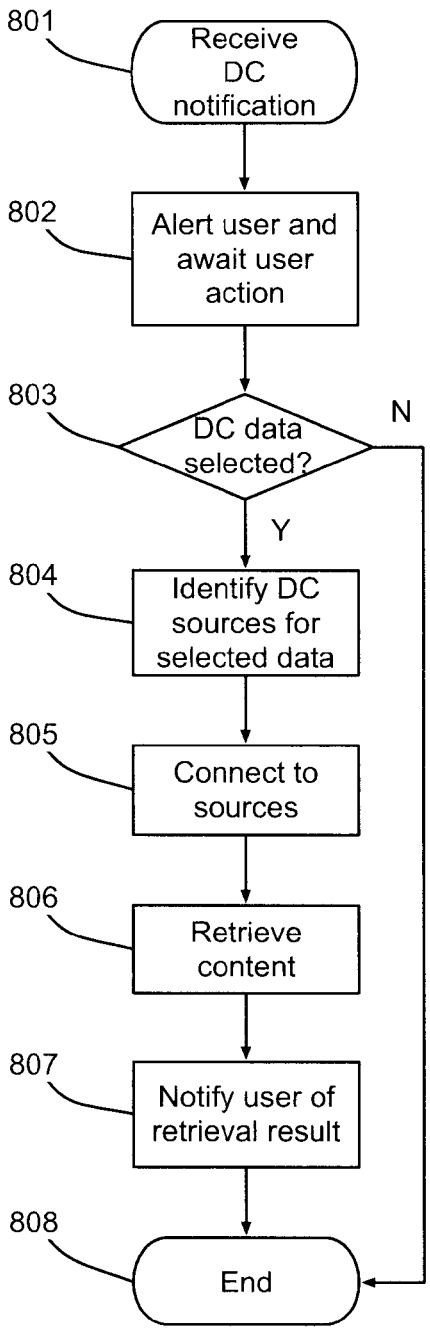
801
Receive DC notification
802
Alert user and await user action
803
DC data selected?
N
Y
804
Identify DC sources for selected data
805
Connect to sources
806
Retrieve content
807
Notify user of retrieval result
808
End

Figure 8

MANAGING INVENTORY DATA FOR A DISTRIBUTED CACHE PROVIDED BY A PLURALITY OF WIRELESS MOBILE DEVICES

TECHNICAL FIELD

The present disclosure relates to an apparatus or computer program product for managing inventory data of a distributed cache provided by a plurality of wireless mobile communication devices.

DESCRIPTION OF THE RELATED ART

Mobile devices such as mobile telephones are commonly used for data intensive activities such as information retrieval. Such intensive data activities have a negative effect on a mobile communications network since data transmission capacity of the mobile communications network may be limited or expensive.

There are several potential solutions to this problem. One such solution comprises caching data in a distributed cache provided by the mobile devices themselves such that each mobile device provides part of the storage required for the cache, and that the cache is shared among a group of mobile devices. Different caching policies are provided, each aimed at improving effectiveness of the distributed cache. However, problems arise with some mobile caching systems because of their intrinsically opportunistic nature. Each mobile device must discover relevant data by scanning the caches of all neighboring devices. Periodically scanning all neighboring devices to determine if relevant data exists in the neighboring devices uses a significant amount of power.

SUMMARY

Disclosed are an apparatus and computer program product for distributing inventory data for a distributed cache provided by a plurality of wireless mobile communication devices. The computer program product comprises program instructions for: receiving first inventory data from a first wireless mobile communication device, the first inventory data identifying one or more data resources associated with the first wireless mobile communication device; receiving second inventory data from a second wireless mobile communication device, the second inventory data identifying one or more data resources associated with the second wireless mobile communication device; comparing the first inventory data and the second inventory data to identify one or more matching data resources; and in response to identifying one or more matching data resources, sending, to the first wireless mobile communication device, a matching inventory data that identifies the one or more matching data resources, wherein the matching inventory data enables the first wireless mobile communication device to access each of the one or more matching data resources stored on the second wireless mobile communication device.

The matching inventory data may further comprise an identification of the second device so as to enable the first wireless mobile communication device to initiate a connection directly with the second device. Receiving and sending of the inventory data may be performed using a first wireless communications network. The first and second devices create a peer-to-peer network to enable the access by the first wireless mobile communication device to the matching data resource stored on the second device. The method may comprise determining the location of the first and second devices.

In another embodiment the sending of the matching inventory data may only be performed if the first and second devices are within a predetermined proximity. The location may be a predicted proximity determined for a predetermined future time period. The one or more data resources may comprise one or more of a data subscription, a data topic, a data category, a data item, a search term, a user preference, and a user interest.

The first wireless mobile communication device may further compile the first inventory data, send the first inventory data to a distributed cache (DC) server application program that is further configured to identify one or more other wireless mobile communication devices of the plurality of mobile devices having the one or more matching data resources, and receive the matching inventory data identifying the second device. In response to the first wireless mobile communication device receiving the matching inventory data, a user alert may be triggered. The first inventory data may identify any resources available from the first device to the second device or any resources required by the first device and/or may identify resources required by the first device that are available from the second device.

BRIEF DESCRIPTION OF THE DRAWINGS

The present disclosure can be better understood by referring to the following description when read in conjunction with the accompanying drawings, in which same or similar reference numerals are used to denote same or similar components. The drawings, together with the following detailed description, are included in the specification and form part thereof, and are used to further illustrate, by way of example, embodiments of the present disclosure and to explain principles and advantages of the present disclosure.

FIG. **1** is a block diagram of a communications network according to an embodiment of the present disclosure;

FIG. **2** is a schematic illustration of a client application program of one of the wireless mobile communication devices of FIG. **1** according to an embodiment of the present disclosure;

FIG. **3** is an illustration of a user profile comprising a user-defined inventory of data resources used by the client application program of FIG. **2** according to an embodiment of the present disclosure;

FIG. **4** is a block diagram of a server application program according to an embodiment of the present disclosure;

FIG. **5** is an illustration of a table of user profile data used by the server application program of FIG. **4** according to an embodiment of the present disclosure;

FIG. **6** is a flow diagram of a method performed by a client application program according to an embodiment of the present disclosure;

FIG. **7** is a flow diagram of a method performed by the server application program according to an embodiment of the present disclosure; and

FIG. **8** is a flow diagram of a method performed by the client application program in response to receiving a notification from a distributed cache (DC) server application program, according to an embodiment of the present disclosure.

DETAILED DESCRIPTION OF AN ILLUSTRATIVE EMBODIMENT

Described herein is a system, method, and computer program product for distributing inventory data in a distributed cache by a plurality of wireless mobile communication devices. Although an illustrative implementation of one or

more embodiments is provided below, the disclosed systems and/or methods may be implemented using any number of techniques. This disclosure should in no way be limited to the illustrative implementations, drawings, and techniques illustrated below, including the exemplary designs and implementations illustrated and described herein, but may be modified within the scope of the appended claims along with their full scope of equivalents.

It will be appreciated that for simplicity and clarity of illustration, elements shown in the figures have not necessarily been drawn to scale. For example, the dimensions of some of the elements may be exaggerated relative to other elements for clarity. Further, where considered appropriate, reference numbers may be repeated among the figures to indicate corresponding or analogous features.

In the following detailed description, numerous specific details are set forth in order to provide a thorough understanding of the present disclosure. However, it will be understood by those skilled in the art that the present disclosure may be practiced without these specific details. In other instances, well-known methods, procedures, and components have not been described in detail so as not to obscure the present disclosure.

With reference to FIG. **1**, a communications system comprises a computer **102** connected to a mobile communications core network **103**, which in turn is connected to a mobile communications access network comprising a set of communications masts **104**. Network **103** in combination with communications masts **104** provides mobile communications services to a plurality of mobile communications devices **105**. In one embodiment mobile communications devices **105** are mobile and/or cellular telephones. In the present embodiment, each of the mobile communications devices **105** is further configured with a secondary wireless communications means, such as WiFi™, which enables connection to WiFi™ hub **106** or a secondary wireless communications hub. WiFi™ hub **106** enables network communications between mobile communications devices **105** as an alternative to network **103** and communications masts **104**. As will be understood by those skilled in the art, mobile communications devices **105** need to be within a predetermined proximity **107** of WiFi™ hub **106** in order to use WiFi™ hub **106** to connect to other mobile communications devices **105**.

With reference to FIG. **2**, there is depicted a mobile communications device **105** comprising an operating system **201** that provides a processing platform for a distributed cache (DC) client application program **202** (also referred to herein as DC client **202**). In the present embodiment, DC client **202** uses two main sets of data: a user profile **203** and distributed cache (DC) data **204**. DC client **202** is further configured to communicate with other DC clients **202** of the other mobile communications devices **105** to enable sharing of respective DC data **204** between DC clients **202** of the other mobile communications devices **105**. The sharing of the data occurs in accordance with user preferences defined in user profile **203** of each mobile communication device **105**.

With reference to FIG. **3**, there is depicted user profile **203** which comprises a user-defined inventory of the data resources that DC client **202** (FIG. **2**) is permitted to make available within the distributed cache. In the present embodiment, user profile **203** also comprises an inventory of those data resources that a user wishes to obtain from the distributed cache. That is, user profile **203** comprises an inventory of both DC data **204** available to other participating mobile communication devices **105** in addition to the data resources required or requested by the user from the distributed cache and supplied from one or more other mobile communications devices **105** (FIG. **2**). DC data **204** is defined in the user profile **203** by a set of user selected DC data identifiers. In the present embodiment, the DC data identifiers are dependent on the type of the data resource. A data resource may comprise one or more data subscriptions, data topics, data categories, data items, search term, user preferences or user interests. Any suitable data resource may be defined (including by a user) to be included in DC data **204**, or may be retrieved from one or more other mobile communications devices **105**.

With reference to FIG. **4**, there is illustrated a block diagram of computer **102** which comprises an operating system **401** configured to provide a processing platform for a distributed cache (DC) server application program **402** (also referred to herein as DC server **402**). In the present embodiment, DC server **402** comprises at least two distinct modules: a subscriber location module **403** and a data correlation module **404**. DC server **402** also stores a set of user profile data **405**, which is in part collected from the DC client **202** of each of the mobile communications devices **105** (FIG. **2**). Subscriber location module **403** is configured to determine the current location of each of the mobile communications devices **105**. In one embodiment, subscriber location module **403** is configured to determine the current location of each other mobile communications device(s) **105** every 10 minutes. Data correlation module **404** is configured to analyze user profile data **405** to determine any matches between DC data **204** defined in user profiles **203** collected from each of the mobile communications devices **105** (FIG. **2**).

With reference to FIG. **5**, there is depicted a user profile data table comprising a user identifier (ID) for identifying other mobile communications devices **105**, the location of each other mobile communications device **105** for the current time period as calculated by the subscriber location module **403**, and the user profile **203** or inventory data received from each other mobile communications device **105**. The data correlation module **404** is configured to determine, for a given mobile communication device **105**, other mobile communications device(s) **105** within a predetermined proximity **107** that have matching DC data definitions. In response to detecting a match, DC server **402** notifies each mobile communication device **105** within the predetermined proximity **107** having matching DC data definitions. This notification provides an indication, and/or informs a user of a mobile communication device **105** receiving the notification, of available data resources in the distributed cache. The receiving mobile communication device may then, via the DC client **202**, negotiate the retrieval of any such data of interest from other mobile communication device(s) **105** within predetermined proximity **107** having relevant available data resources. The retrieval of the data is negotiated by the DC clients **202** of each respective mobile communications device **105**. The retrieval is performed over a peer-to-peer network established via a secondary wireless communication means or a secondary wireless communications hub (e.g. via WiFi™ hub **106**). Any other available secondary wireless communications means may be utilized. As will be understood by those skilled in the art, other available secondary wireless peer-to-peer mechanisms and communications means for communicating between DC clients on the mobile communication devices for sharing DC data may include, for example, Bluetooth™ WiMax™, or any other local wireless underlay network.

With reference to FIG. **6**, there is depicted a flow chart of the processing method performed by DC client application program **202** on initialization, in accordance with one embodiment of the disclosure. At step **601** processing of the DC client **202** is initiated in response to the start-up of the DC client **202**. At step **602** a data selection interface is presented

to enable selection and identification of data resources for user profile **203**. At step **603** the identified data resources are logged in the user profile **203**. At step **604** a connection to the DC server **402** is established. At step **605** user profile **203** is uploaded to DC server **402**. At step **606** processing pauses until user profile **203** is again updated. In response to the user profile **203** being updated, the processing returns to step **605** to upload the updated user profile **203**.

With reference to the flow chart of FIG. **7**, there is depicted a flow chart of a processing method performed by DC server application program **402**. At step **701** processing of DC server **402** is initiated in response to the start-up of DC server **402** on a mobile communication device **105**. At step **702** processing awaits the upload of a first user profile **203**. In response to receiving the first user profile, the uploaded user profile **203** is logged in user profile data **405** (step **703**). In one embodiment steps **702-703** may repeat until two or more user profiles have been uploaded into the user profile data **405** and may also further continue for additional user profiles even while processing further continues as provided below. At step **704** subscriber location module **403** is utilized to determine the locations of each mobile communication device **105** logged into user profile data **405**. At step **705** data correlation module **404** is utilized to determine matches between user profile data **405** and mobile communications devices **105** within a predetermined proximity **107**. At step **706** a notification is compiled for each mobile communication device **105**. The notification comprises a list of the relevant data resources available from corresponding identified mobile communication devices **105** within the predetermined proximity **107**. At step **707** the compiled notifications are sent to each of the identified mobile communication devices **105**. Processing then waits for completion of a refresh period (step **708**). Once the refresh period has been reached/completed, the processing returns to step **704** and proceeds as described above to further refresh the proximity and correlation data before issuing updated notifications to mobile communications devices **105** within a predetermined proximity **107**.

With reference to the flow chart of FIG. **8**, there is depicted the processing performed by a DC client application program **202** in response to receiving a notification from DC server **402**. At step **801** processing is initiated in response to the receipt of a notification from DC server **402**. At step **802** an alert is issued to signal the receipt of the notification and processing waits for user interaction (step **803**). If, at step **803**, DC data is not selected, the process terminates (end step **808**). In response to receiving a selected DC data in response to the notification (step **803**), the processing moves to step **804** where the sources for the selected DC data are identified from the notification. At step **805** a connection is negotiated with each available source mobile communications device **105** having the DC data. At step **806** the selected data is retrieved from at least one connected source of the available source mobile communications devices **105**. A notification is then issued, which provides an indication of the retrieval of the selected DC data (step **807**). The processing then terminates at step **808**.

In another embodiment, the user profile is further configured to enable defining of two sets of inventory data. The first set of inventory data defines the data resources available for sharing via the distributed cache. The second set of inventory data defines data resources that the user wishes to source from the distributed cache. Thus, the second set of data defines the requested data resources and/or the data to be sourced from the distributed cache. In the present embodiment, the notifications received from the DC server comprise an identification of the resources for the requested data such as an identification of the other mobile communication devices within the distributed cache that may provide the requested data resource. The DC client may be further configured to provide only the first set of inventory data where only data sharing is required. Alternatively, the DC client may be configured to provide only the second set of inventory data to the DC server where only data acquisition or sourcing is required.

In another embodiment, the DC server application is provided with data identifying the locations of suitable nodes for secondary wireless communication between the mobile communication devices, such as available WiFi™ nodes. The location of such available nodes is taken into account when determining proximity of devices for a given notification. For example, the measure of relative proximity may be centered on a WiFi™ node so as to ensure that all relevant mobile communication devices contributing to the distributed cache are within operational range.

As will be understood by those skilled in the art, the DC server may be further configured to use any suitable location technique for determining the positions of the relevant mobile communication devices. For example, to locate mobile communication devices the DC server may utilize network based systems, such as mobile signal triangulation, or device based systems, such as Global Positioning Satellites (GPS). In another embodiment the mobile communication devices are configured to determine their own respective positions which may then be transmitted to the DC server.

In another embodiment, the DC client application program is configured to perform part or all of the determination of which other mobile communication devices are within suitable proximity. For example, the DC server may supply only the positions of other mobile communication devices in a notification. The DC clients then individually determine which other mobile communication devices are within a suitable proximity based on their own self-calculated position. In another embodiment the location of mobile communication devices performed by either the DC server or DC client are predictive such that positions of mobile communication devices are calculated for a future time slot.

As will be understood by those skilled in the art, any suitable correlation technique may be employed for determining correlations between user profiles. In another embodiment, the data correlation method is predictive. User subscriptions or other data sources may be monitored to determine data likely to be available on a given mobile communication device.

Embodiments of the disclosure provide a system in which mobile communication devices within the distributed cache gain prior knowledge from the network on the availability and proximity of relevant data in neighboring devices. With this knowledge, mobile communication devices within the distributed cache passively engage in sharing subscribed content that is relevant to a user, thus conserving power. Embodiments of the disclosure provide a deterministic content retrieval system in which participating mobile communication devices share targeted content classes.

Embodiments of the disclosure enable autonomous information sharing between anonymous neighboring mobile communication devices, minimally assisted by the network through the use of optionally predictive location and optionally predictive content of the targeted mobile communication devices. The participating mobile communication devices are able to acquire knowledge of content that the network has determined to exist within a local area. By utilizing prediction techniques for mobile location and content, the need for widespread scanning is removed thus reducing the overhead on the network. Embodiments of the disclosure differ from oppor-

tunistic distributed content sharing systems by enabling devices to independently acquire knowledge of nearby relevant data and target the acquisition of this data, thus conserving energy and enabling targeted content retrieval.

It will be understood by those skilled in the art that the apparatus that embodies a part or all of the present disclosure may be a general purpose device having at least one processor, a memory, and a software executing on the at least one processor that is further configured to provide a part or all of an embodiment of the disclosure. The device may be a single device or a group of devices. The software may be a single program or a set of programs. Furthermore, any or all of the software used to implement the disclosure can be communicated via any suitable transmission or storage means so that the software can be loaded onto one or more devices.

The present disclosure can take the form of a computer program product accessible from a computer-usable or computer-readable storage device providing program code for use by or in connection with a computer or any instruction execution system. For the purposes of this disclosure, a computer usable or computer-readable storage device can be any tangible apparatus that contains, stores, communicates, propagates, or transports the program for use by or in connection with the instruction execution system, apparatus, or device. The device can be an electronic, magnetic, optical, electromagnetic, or semiconductor system (or apparatus or device). Examples of a computer-readable storage device include a semiconductor or solid state memory, magnetic tape, a removable computer diskette, a random access memory (RAM), a read only memory (ROM), a rigid magnetic disk and an optical disk. Current examples of optical disks include compact disk read only memory (CD-ROM), compact disk read/write (CD-R/W), and DVD.

While the present disclosure has been described with reference to exemplary embodiments, and while the embodiments have been described in considerable detail, it will be understood by those skilled in the art that various changes may be made and equivalents may be substituted for elements thereof without departing from the scope of the disclosure. Additional advantages and modifications will readily appear to those skilled in the art. The description of the present disclosure has been presented for purposes of illustration and description, but is not intended to be exhaustive or limited to the disclosure in the form disclosed. Many improvements, modifications, and variations will be apparent to those of ordinary skill in the art without departing from the scope and spirit of the present disclosure. In addition, many modifications may be made to adapt a particular system, device or component thereof to the teachings of the disclosure without departing from the essential scope thereof. The embodiment was chosen and described in order to best explain the principles of the disclosure and the practical application, and to enable others of ordinary skill in the art to understand the disclosure for various embodiments with various modifications as are suited to the particular use contemplated. Therefore, it is intended that the disclosure not be limited to the particular embodiments disclosed for carrying out this disclosure, but that the disclosure will include all embodiments falling within the scope of the appended claims.

What is claimed is:

1. An apparatus for distributing inventory data for a distributed cache provided by a plurality of wireless mobile communication devices, the apparatus comprising:

a processor;

a system memory coupled to the processor; and

program code that when executed by said processor provides a distributed cache (DC) server that:

receives first inventory data from a first wireless mobile communication device, said first inventory data identifying one or more data resources associated with said first wireless mobile communication device;

receives second inventory data from a second wireless mobile communication device, said second inventory data identifying one or more data resources associated with said second wireless mobile communication device;

compares said first inventory data and said second inventory data to identify one or more matching data resources; and

in response to identifying one or more matching data resources, sends, to said first wireless mobile communication device, a matching inventory data that identifies said one or more matching data resources, wherein said matching inventory data enables said first wireless mobile communication device to access each of said one or more matching data resources stored on said second wireless mobile communication device.

2. The apparatus according to claim **1**, wherein said matching inventory data further comprises an identification of said second wireless mobile communication device, and wherein said matching inventory data enables said first wireless mobile communication device to initiate a connection directly with said second wireless mobile communication device.

3. The apparatus according to claim **1**, wherein said sending of said matching inventory data to said first wireless mobile communication device is performed using a first wireless communication network, and wherein said first wireless mobile communication device and second wireless mobile communication device create a peer-to-peer network that enables said access by said first wireless mobile communication device to said one or more matching data resources stored on said second wireless mobile communication device.

4. The apparatus according to claim **1**, wherein the DC server:

determines a location of said first wireless mobile communication device and said second wireless mobile communication device;

wherein said matching inventory data is sent to said first wireless mobile communication device only if said first wireless mobile communication device and said second wireless mobile communication device are within a predetermined proximity.

5. The apparatus according to claim **4**, wherein said location is a predicted proximity determined for a predetermined future time period.

6. The apparatus according to claim **1**, wherein an inventory data of data resources comprises one or more of: a data subscription, a data topic, a data category, a data item, a search term, a user preference, or a user interest.

7. The apparatus according to claim **1**, wherein said first wireless mobile communication device:

compiles said first inventory data on said first wireless mobile communication device;

sends said first inventory data to said DC server;

receives, from said DC server, said matching inventory data; and

in response to said first wireless mobile communication device receiving said matching inventory data, triggers an alert.

8. The apparatus according to claim **7**, wherein said first inventory data is further configured to identify at least one of: one or more resources available of said first wireless mobile

communication device to said second wireless mobile communication device and one or more resources required by said first wireless mobile communication device.

9. The apparatus according to claim **8**, wherein said matching inventory data identifies said one or more resources required by said first wireless mobile communication device that are available from said second wireless mobile communication device.

10. A computer program product comprising software code and stored on a non-transitory computer-readable storage medium that is loadable into an internal memory of a data processing system, and that when run on the data processing system, causes the data processing system to perform a method for distributing inventory data for a distributed cache provided by a plurality of wireless mobile communication devices, said method comprising:

receiving, at a distributed cache (DC) server, first inventory data from a first wireless mobile communication device, said first inventory data identifying one or more data resources associated with said first wireless mobile communication device;

receiving, at the DC server, second inventory data from a second wireless mobile communication device, said second inventory data identifying one or more data resources associated with said second wireless mobile communication device;

the DC server comparing said first inventory data and said second inventory data to identify one or more matching data resources; and

in response to identifying one or more matching data resources, the DC server sending, to said first wireless mobile communication device, a matching inventory data that identifies said one or more matching data resources, wherein said matching inventory data enables said first wireless mobile communication device to access each of said one or more matching data resources stored on said second wireless mobile communication device.

11. The computer program product according to claim **10**, wherein said matching inventory data further comprises an identification of said second wireless mobile communication device, and wherein said matching inventory data enables said first wireless mobile communication device to initiate a connection directly with said second wireless mobile communication device.

12. The computer program product according to claim **10**, wherein said sending of said matching inventory data to said first wireless mobile communication device is performed using a first wireless communication network, and wherein said first wireless mobile communication device and second wireless mobile communication device create a peer-to-peer network that enables said access by said first wireless mobile communication device to said one or more matching data resources stored on said second wireless mobile communication device.

13. The computer program product according to claim **10**, wherein the software code further comprising code that causes the data processing system to perform the method comprising

the DC server determining a location of said first wireless mobile communication device and said second wireless mobile communication device;

wherein said matching inventory data is sent to said first wireless mobile communication device only if said first wireless mobile communication device and said second wireless mobile communication device are within a predetermined proximity.

14. The computer program product according to claim **13**, wherein said location is a predicted proximity determined for a predetermined future time period.

15. The computer program product according to claim **10**, wherein an inventory data of data resources comprises one or more of: a data subscription, a data topic, a data category, a data item, a search term, a user preference, or a user interest.

16. The computer program product according to claim **10**, wherein said first wireless mobile communication device:

compiles said first inventory data on said first wireless mobile communication device;

sends said first inventory data to said DC server; and

receives said matching inventory data from said DC server.

17. The computer program product according to claim **16**, wherein said first wireless mobile communication device:

in response to receiving said matching inventory data, triggers a alert.

18. The computer program product according to claim **16**, wherein said first inventory data is further configured to identify at least one of one or more resources available of said first wireless mobile communication device to said second wireless mobile communication device and one or more resources required by said first wireless mobile communication device.

19. The computer program product according to claim **18**, wherein said matching inventory data identifies said one or more resources required by said first wireless mobile communication device that are available from said second wireless mobile communication device.

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