

A METHOD AND AN APPARATUS FOR GROUP MANAGEMENT

5 TECHNICAL FIELD

The present application relates to communication, and more particularly relates to a technology for group management.

BACKGROUND

10 People communicate with each other using group chats increasingly with the development of the communication technology. Sometimes users wish to join groups of interest which are composed of strangers, in addition to the groups composed of acquaintance such as family, colleagues, friends, etc. However, current group chats are not able to satisfy such demands of users.

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CONTENTS OF THE INVENTION

An object of the present application is to provide a method and an apparatus for group management.

20 According to an aspect of the application, a method for group management is provided, wherein the method comprises:

adding a user to a target group according to a group joining request for the target group by the user;

detecting whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

25 if yes, presenting group retention selection information of the target group to the user; and

if the user selects to retain the target group, retaining the user in the target group.

30 According to another aspect of the application, a method for group management is provided, wherein the method comprises:

obtaining one or more groups matching a group search request according to the group search request by a user;

adding the user to a target group of the one or more groups according to a group joining request for the target group by the user;

5 detecting whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

if yes, presenting group retention selection information of the target group to the user; and

10 if the user selects to retain the target group, retaining the user in the target group.

According to a further aspect of the application, a method for group management is provided, wherein the method comprises:

obtaining one or more groups recommended for a user when a user equipment of the user accesses a wireless access point;

15 adding the user to a target group of the one or more groups according to a group joining request for the target group by the user;

detecting whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

20 if yes, presenting group retention selection information of the target group to the user; and

if the user selects to retain the target group, retaining the user in the target group.

According to a yet further aspect of the application, an apparatus for group management is provided, wherein the apparatus comprises:

25 a first module for adding a user to a target group according to a group joining request for the target group by the user;

a second module for detecting whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

30 a third module for presenting group retention selection information of the target group to the user if the current group dwell time of the user in the target

group equals to or is greater than the group retention time; and

a fourth module for retaining the user in the target group if the user selects to retain the target group.

According to a yet further aspect of the application, an apparatus for group
5 management is provided, wherein the apparatus comprises:

a seventh module for obtaining one or more groups matching a group search request according to the group search request by the user;

an eighth module for adding the user to a target group of the one or more groups according to a group joining request for the target group by the user;

10 a ninth module for detecting whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

a tenth module for presenting group retention selection information of the target group to the user if the current group dwell time of the user in the target group equals to or is greater than the group retention time; and

15 an eleventh module for retaining the user in the target group if the user selects to retain the target group.

According to a yet further aspect of the application, an apparatus for group management is provided, wherein the apparatus comprises:

20 a twelfth module for obtaining one or more groups recommended for a user when a user equipment of the user accesses a wireless access point;

a thirteenth module for adding the user to a target group of the one or more groups according to a group joining request for the target group by the user;

a fourteenth module for detecting whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

25 a fifteenth module for presenting group retention selection information of the target group to the user if the current group dwell time of the user in the target group equals to or is greater than the group retention time; and

a sixteenth module for retaining the user in the target group if the user selects to retain the target group.

30 According to a yet further aspect of the application, a computer readable

medium comprising instructions is provided, when executed, cause a system to:

add a user to a target group according to a group joining request for the target group by the user;

detect whether a current group dwell time of the user in the target group equals

5 to or is greater than a group retention time;

if yes, present group retention selection information of the target group to the user; and

if the user selects to retain the target group, retain the user in the target group.

According to a yet further aspect of the application, a computer readable

10 medium comprising instructions is provided, when executed, cause a system to:

obtain one or more groups matching a group search request according to the group search request by a user;

add the user to a target group of the one or more groups according to a group joining request for the target group by the user;

15 detect whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

if yes, present group retention selection information of the target group to the user; and

if the user selects to retain the target group, retain the user in the target group.

20 According to a yet further aspect of the application, a computer readable medium comprising instructions is provided, when executed, cause a system to:

obtain one or more groups recommended for a user when a user equipment of the user accesses a wireless access point;

add the user to a target group of the one or more groups according to a group joining request for the target group by the user;

25 detect whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

if yes, present group retention selection information of the target group to the user; and

30 if the user selects to retain the target group, retain the user in the target group.

According to a yet further aspect of the application, a device for group management is provided, wherein the device comprises:

a processor; and

a memory arranged to store computer executable instructions, when executed,

5 cause the processor to:

add a user to a target group according to a group joining request for the target group by the user;

detect whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

10 if yes, present group retention selection information of the target group to the user; and

if the user selects to retain the target group, retain the user in the target group.

According to a yet further aspect of the application, a device for group management is provided, wherein the device comprises:

15 a processor; and

a memory arranged to store computer executable instructions, when executed, cause the processor to:

obtain one or more groups matching a group search request according to the group search request by a user;

20 add the user to a target group of the one or more groups according to a group joining request for the target group by the user;

detect whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

25 if yes, present group retention selection information of the target group to the user; and

if the user selects to retain the target group, retain the user in the target group.

According to a yet further aspect of the application, a device for group management is provided, wherein the device comprises:

a processor; and

30 a memory arranged to store computer executable instructions, when executed,

cause the processor to:

obtain one or more groups recommended for a user when a user equipment of the user accesses a wireless access point;

add the user to a target group of the one or more groups according to a group
5 joining request for the target group by the user;

detect whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

if yes, present group retention selection information of the target group to the user; and

10 if the user selects to retain the target group, retain the user in the target group.

Compared with the prior art, the method of the present application comprises: adding a user to a target group according to a group joining request by the user, and starting to calculate a current group dwell time of the user in the target group; detecting whether the current group dwell time equals to or is greater than a group
15 retention time; if yes, presenting group retention selection information of the target group to the user; and if the user selects to retain the target group, retaining the user in the target group. In the present application, when the current group dwell time of the user in the target group is greater than or equals to the group retention time, the user is prompted to select whether to retain the target group, so that the user can
20 join groups of interest conveniently and quit groups of no interest timely, thus improving user experience. Further, the present application further comprises obtaining a group retention time for the target group set by the user. Users are able to set different group retention time for different groups, thus flexibility is improved.

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DESCRIPTIONS OF THE DRAWINGS

Other features, objects, and advantages of the present application will become more apparent by reading the detailed description of non-limiting embodiments with reference to the following drawings:

30 Figure 1 shows a flowchart of a method for group management according to an

embodiment of the application;

Figure 2 shows a flowchart of a method for group management according to another embodiment of the application;

Figure 3 shows a flowchart of a method for group management according to a
5 further embodiment of the application;

Figure 4 shows a schematic view of an apparatus for group management according to an embodiment of the application;

Figure 5 shows a schematic view of an apparatus for group management according to another embodiment of the application;

10 Figure 6 shows a schematic view of an apparatus for group management according to a further embodiment of the application.

The identical or similar reference numerals in the drawings represent the identical or similar components.

15 DETAILED EMBODIMENTS

The application is further described in detail below with reference to the accompanying drawings.

In a typical configuration of the present application, a terminal, a device of a service network and a trusted party all include one or more processors (CPUs), an
20 input/output interface, a network interface and a memory.

The memory may include a non-permanent memory, a random access memory (RAM) and/or a non-volatile memory and the like in a computer-readable medium, such as a read-only memory (ROM) or a flash memory (flash RAM)). A memory is an example of a computer-readable medium.

25 A computer-readable medium comprises permanent and non-permanent, movable and non-movable media and may implement information storage by means of any method or technology. Information may be computer-readable instructions, data structures, program modules or other data. The examples of a computer storage medium include but are not limited to a phase change memory (PRAM), a static
30 random access memory (SRAM), a dynamic random access memory (DRAM),

other types of random access memory (RAM), a read-only memory (ROM), an electrically erasable programmable read-only memory (EEPROM), a flash memory or other memory technologies, compact disk read-only memory (CD-ROM), a digital versatile disc (DVD) or other optical storages, a magnetic cassette tape, and magnetic tape and magnetic disk storage or other magnetic storage devices or any other non-transmission media, which can be used to store information that can be accessed by a computing device. According to the definition herein, the computer-readable medium does not include a non-transitory computer-readable medium, such as a modulated data signal and a carrier.

Figure 1 shows a flowchart of a method for group management according to an embodiment of the application. The method comprises step S101, step S102, step S103 and step S104.

Specifically, at step S101, a group management apparatus 1 adds a user to a target group according to a group joining request for the target group by the user. At step S102, the group management apparatus 1 detects whether a current group dwell time of the user in the target group equals to or is greater than a group retention time. At step S103, if yes, the group management apparatus 1 presents group retention selection information of the target group to the user. At step S104, the group management apparatus 1 retains the user in the target group if the user selects to retain the target group.

Here, the group management apparatus 1 includes but is not limited to: user equipments, or apparatus composed by integration of user equipments and network devices via networks. User equipments include but are not limited to mobile electronic products capable of human-machine interaction with users via touchpads, for example, an intelligent phone, a tablet, etc. The mobile electronic products can run on any operating system, such as android operating system, iOS operating system, etc. Network devices include an electronic device of automatically performing numeral calculations and information processing according to preset or stored instructions. Its hardware includes but is not limited to micro-processors, application specific integrated circuits (ASIC), programmable gate array (FPGA),

digital signal processors (DSP), embedded devices, etc. Network devices include but are not limited to: computers, mainframes, a single network server, a cloud composed of multiple network server sets or multiple servers. Cloud as used herein is formed by a massive amount of computers or network servers based on cloud computing, wherein cloud computing is a type of distributed computing, which is a virtual super computer composed of a group of loosely coupled computer sets. Networks include but are not limited to internet, Wide Area Network (WAN), Metropolitan Area Network (MAN), Local Area Network (LAN), Virtual Private Network (VPN), wireless ad-hoc network, etc. Preferably, the group management apparatus 1 can also be scripts programs running on user equipments, or an apparatus composed of an integration of user equipments, network devices, and touch terminals or an integration of network devices and touch terminals via networks. Of course, it can be appreciated by those skilled in the art that the group management apparatus 1 is merely an example. Other existing group management apparatus 1 or those that may appear in the future are also applicable to the present application and fall within the scope of the protection scope of the application and are incorporated herein by reference.

At step S101, the group management apparatus 1 adds the user to the target group according to the group joining request for the target group by the user.

As an example, a user may select to join a target group temporarily when the user is using a specific application on a user equipment, including an intelligent mobile phone, a tablet. The server of the specific application adds the user to the target group in response to the group joining request for the target group by the user.

Preferably, at step S101, the group management apparatus 1 adds the user to the target group according to the group joining request for the target group by the user and obtains a group retention time for the target group set by the user.

As an example, when the user joins the target group, the user is prompted to enter a group retention time for the target group, thus a group retention time for the target group set by the user is obtained.

In another embodiment, the group retention time can also be a system default value without settings by the user.

Preferably, the method further comprises: the group management apparatus 1 obtains one or more groups matching a group search request by the user. At step 5 S101, the group management apparatus 1 adds the user to the target group of the one or more groups according to the group joining request for the target group by the user.

As an example, when the user is using a specific application on the user equipment, the user may search and obtain one or more matching groups by 10 entering keywords (or entering group number) or in other ways. The user may then select a target group from the one or more groups to join temporarily. The server of the specific application adds the user to the target group in response to the group joining request for the target group by the user.

Preferably, the method further comprises: the group management apparatus 1 15 obtains the one or more groups recommended for the user when the user equipment of the user accesses a wireless access point. At step S101, the group management apparatus 1 adds the user to the target group of the one or more groups according to the group joining request for the target group by the user.

As an example, when the user equipment of the user accesses a wireless access 20 point, the specific application on the user equipment jumps to a recommendation page and displays one or more groups on the recommendation page. The user then may select a target group from the one or more groups to join temporarily.

As another example, when the specific application on the user equipment detects that the user equipment accesses a wireless access point, notification 25 information displaying one or more groups may be popped out. The user may then select a target group from the one or more groups to join temporarily.

At step S102, the group management apparatus 1 detects whether a current group dwell time of the user in the target group equals to or is greater than a group retention time.

30 As an example, the current group dwell time is calculated since the user joins

the target group. The group retention time may be set by the user, or may be a system default value. It is determined whether the current group dwell time equals to or is greater than the group retention time by comparing the current group dwell time to the group retention time.

5 Preferably, the group management apparatus 1 detects whether the current group dwell time of the user in the target group equals to or is greater than the group retention time when the user participates in the communication of the target group. The user participating in the communication of the target group comprise at least one of: the user checking historic communication information received in the
10 target group; the user sending new communication information in the target group; the user receiving new communication information in the target group; the user belonging to the target group.

Here, the user belongs to the target group after the user joins the target group. The user no longer belongs to the target group when the user quits the target group.

15 Preferably, at step S101, the group management apparatus 1 adds the user to the target group according to the group joining request for the target group by the user and initiates a corresponding group retention timer according to the group retention time of the target group. At step S102, the group management apparatus 1 detects whether the group retention timer expires at the current time instant.

20 As an example, the current group dwell time can be calculated by using the group retention timer. When the user joins the target group, the group retention timer is initiated and starts to calculate the current group dwell time. It is determined whether the group retention timer expires at the current time instant by comparing the current group dwell time and the group retention time according to
25 the timing of the group retention timer.

If yes, at step S103, the group management apparatus 1 presents group retention selection information of the target group to the user.

As an example, if the current group dwell time of the user in the target group equals to or is greater than the group retention time, group retention selection
30 information (e.g., in form of a prompt box) of the target group can be presented to

the user to prompt the user to select whether to retain the target group.

At step S104, the group management apparatus 1 retains the user in the target group if the user selects to retain the target group.

As an example, if the user selects to retain the target group based on the group retention selection information, the user formally joins the target group. There is no need to calculate the current group dwell time of the user in the target group thereafter, thus saving system resources.

Preferably, at step S104, the group management apparatus 1 moves the user out of the target group if the user selects to drop the target group.

As an example, if the user selects to drop the target group based on the group retention selection information, the user is moved out of the target group. The user no longer belongs to the target group thereafter.

Figure 2 shows a flowchart of a method for group management according to another embodiment of the application. The method comprises step S107', step S108', step S109', step S110' and step S111'.

Specifically, at step S107', the group management apparatus 1 obtains one or more groups matching a group search request by the user. At step S108', the group management apparatus 1 adds the user to the target group of the one or more groups according to the group joining request for the target group by the user. At step S109', the group management apparatus 1 detects whether a current group dwell time of the user in the target group equals to or is greater than a group retention time. If yes, at step S110', the group management apparatus 1 presents group retention selection information of the target group to the user. At step S111', the group management apparatus 1 retains the user in the target group if the user selects to retain the target group.

Here, the group management apparatus 1 includes but is not limited to: user devices, apparatus composed by integration of user devices and network devices via networks. User equipments include but are not limited to mobile electronic products capable of human-machine interaction with users via touchpads, for example, an intelligent phone, a tablet, etc. The mobile electronic products can run on any

operating system, such as android operating system, iOS operating system, etc. Network devices include an electronic device of automatically performing numeral calculations and information processing according to preset or stored instructions. Its hardware includes but is not limited to micro-processors, application specific
5 integrated circuits (ASIC), programmable gate array (FPGA), digital signal processors (DSP), embedded devices, etc. Network devices include but are not limited to: computers, mainframes, single network server, a cloud composed of multiple network server sets or multiple servers. Cloud as used herein is formed by a massive amount of computers or network servers based on cloud computing,
10 wherein cloud computing is a type of distributed computing, which is a virtual super computer composed of a group of loosely coupled computer sets. Networks include but are not limited to internet, Wide Area Network (WAN), Metropolitan Area Network (MAN), Local Area Network (LAN), Virtual Private Network (VPN), wireless ad-hoc network, etc. Preferably, the group management apparatus 1 can
15 also be scripts programs running on user equipments, or an apparatus composed of an integration of user equipments, network devices, and touch terminals or an integration of network devices and touch terminals via networks. Of course, it can be appreciated by those skilled in the art that the group management apparatus 1 is merely an example. Other existing group management apparatus 1 or those that may
20 appear in the future are also applicable to the present application and fall within the scope of the protection scope of the application and are incorporated herein by reference.

As an example, when the user is using a specific application on the user equipment (including an intelligent mobile phone, a tablet, etc.), the user may
25 search and obtain one or more matching groups by entering keywords (or entering group number) or in other ways. The user may then select a target group from the one or more groups to join temporarily. The server of the specific application adds the user to the target group in response to the group joining request for the target group by the user.

30 The current group dwell time is calculated since the user joins the target group.

The group retention time may be set by the user, or may be a system default value. It is determined whether the current group dwell time equals to or is greater than the group retention time by comparing the current group dwell time to the group retention time.

5 If the current group dwell time of the user in the target group equals to or is greater than the group retention time, group retention selection information (e.g., in form of a prompt box) of the target group can be presented to the user to prompt the user to select whether to retain the target group. If the user selects to retain the target group based on the group retention selection information, the user formally
10 joins the target group. There is no need to calculate the current group dwell time of the user in the target group thereafter, thus saving system resources.

Figure 3 shows a flowchart of a method for group management according to a further embodiment of the application. The method comprises step S112'', step S113'', step S114'', step S115'' and step S116''.

15 Specifically, at step S112'', the -10-) management apparatus 1 obtains the one or more groups recommended for the user when the user equipment of the user accesses a wireless access point. At step S113'', the group management apparatus 1 adds the user to the target group of the one or more groups according to the group joining request for the target group by the user. At step S114'', the group
20 management apparatus 1 detects whether a current group dwell time of the user in the target group equals to or is greater than a group retention time. If yes, at step S115'', the group management apparatus 1 presents group retention selection information of the target group to the user. At step S116'', the group management apparatus 1 retains the user in the target group if the user selects to retain the target
25 group.

Here, the group management apparatus 1 includes but is not limited to: user devices, apparatus composed by integration of user devices and network devices via networks. User equipments include but are not limited to mobile electronic products capable of human-machine interaction with users via touchpads, for example, an
30 intelligent phone, a tablet, etc. The mobile electronic products can run on any

operating system, such as android operating system, iOS operating system, etc. Network devices include an electronic device of automatically performing numeral calculations and information processing according to preset or stored instructions. Its hardware includes but is not limited to micro-processors, application specific
5 integrated circuits (ASIC), programmable gate array (FPGA), digital signal processors (DSP), embedded devices, etc. Network devices include but are not limited to: computers, mainframes, a single network server, a cloud composed of multiple network server sets or multiple servers. Cloud as used herein is formed by a massive amount of computers or network servers based on cloud computing,
10 wherein cloud computing is a type of distributed computing, which is a virtual super computer composed of a group of loosely coupled computer sets. Networks include but are not limited to internet, Wide Area Network (WAN), Metropolitan Area Network (MAN), Local Area Network (LAN), Virtual Private Network (VPN), wireless ad-hoc network, etc. Preferably, the group management apparatus 1 can
15 also be scripts programs running on user equipments, or an apparatus composed of an integration of user equipments, network devices, and touch terminals or an integration of network devices and touch terminals via networks. Of course, it can be appreciated by those skilled in the art that the group management apparatus 1 is merely an example. Other existing group management apparatus 1 or those that may
20 appear in the future are also applicable to the present application and fall within the scope of the protection scope of the application and are incorporated herein by reference.

As an example, when the user equipment (including an intelligent mobile phone, a tablet, etc.) of the user accesses a wireless access point, the specific
25 application on the user equipment jumps to a recommendation page and displays one or more groups on the recommendation page. The user then may select a target group from the one or more groups to join temporarily. Or when the specific application on the user equipment detects that the user equipment accesses a wireless access point, notification information displaying one or more groups may
30 be popped out. The user may then select a target group from the one or more groups

to join temporarily.

The server of the specific application adds the user to the target group in response to the group joining request for the target group by the user. The current group dwell time is calculated since the user joins the target group. The group retention time may be set by the user, or may be a system default value. It is determined whether the current group dwell time equals to or is greater than the group retention time by comparing the current group dwell time to the group retention time.

If the current group dwell time of the user in the target group equals to or is greater than the group retention time, group retention selection information (e.g., in form of a prompt box) of the target group can be presented to the user to prompt the user to select whether to retain the target group. If the user selects to retain the target group based on the group retention selection information, the user formally joins the target group. There is no need to calculate the current group dwell time of the user in the target group thereafter, thus saving system resources.

Figure 4 shows a group management apparatus 1 according to an embodiment of the application, wherein the group management apparatus 1 includes a first module 101, a second module 102, a third module 103 and a fourth module 104.

Specifically, the first module 101 adds a user to a target group according to a group joining request for the target group by the user. The second module 102 detects whether the current group dwell time of the user in the target group equals to or is greater than a group retention time. If yes, the third module 103 presents the group retention selection information of the target group to the user. The fourth module 104 retains the user in the target group if the user selects to retain the target group.

Here, the group management apparatus 1 includes but is not limited to: user devices, apparatus composed by integration of user devices and network devices via networks. User equipments include but are not limited to mobile electronic products capable of human-machine interaction with users via touchpads, for example, an intelligent phone, a tablet, etc. The mobile electronic products can run on any

operating system, such as android operating system, iOS operating system, etc. Network devices include an electronic device of automatically performing numeral calculations and information processing according to preset or stored instructions. Its hardware includes but is not limited to micro-processors, application specific
5 integrated circuits (ASIC), programmable gate array (FPGA), digital signal processors (DSP), embedded devices, etc. Network devices include but are not limited to: computers, mainframes, a single network server, a cloud composed of multiple network server sets or multiple servers. Cloud as used herein is formed by a massive amount of computers or network servers based on cloud computing,
10 wherein cloud computing is a type of distributed computing, which is a virtual super computer composed of a group of loosely coupled computer sets. Networks include but are not limited to internet, Wide Area Network (WAN), Metropolitan Area Network (MAN), Local Area Network (LAN), Virtual Private Network (VPN), wireless ad-hoc network, etc. Preferably, the group management apparatus 1 can
15 also be scripts programs running on user equipments, or an apparatus composed of an integration of user equipments, network devices, and touch terminals or an integration of network devices and touch terminals via networks. Of course, it can be appreciated by those skilled in the art that the group management apparatus 1 is merely an example. Other existing group management apparatus 1 or those that may
20 appear in the future are also applicable to the present application and fall within the scope of the protection scope of the application and are incorporated herein by reference.

The first module 101 adds the user to the target group according to the group joining request for the target group by the user.

25 As an example, a user may select to join a target group temporarily when the user is using a specific application on a user equipment, including an intelligent mobile phone, a tablet. The server of the specific application adds the user to the target group in response to the group joining request for the target group by the user.

30 Preferably, the first module 101 adds the user to the target group according to

the group joining request for the target group by the user and obtains a group retention time for the target group set by the user.

As an example, when the user joins the target group, the user is prompted to enter a group retention time for the target group, thus a group retention time for the
5 target group set by the user is obtained.

In another embodiment, the group retention time can also be a system default value without settings by the user.

Preferably, the group management apparatus 1 further comprises a fifth module which obtains one or more groups matching a group search request by the
10 user according to the group search request. The first module 101 adds the user to the target group of the one or more groups according to the group joining request for the one or more groups by the user.

As an example, when the user is using a specific application on the user equipment, the user may search and obtain one or more matching groups by
15 entering keywords (or entering group number) or in other ways. The user may then select a target group from the one or more groups to join temporarily. The server of the specific application adds the user to the target group in response to the group joining request for the target group by the user.

Preferably, the group management apparatus 1 further comprises a sixth
20 module which obtains one or more groups recommended for the user when the user equipment of the user accesses a wireless access point. The first module 101 adds the user to the target group of the one or more groups according to the group joining request for the one or more groups by the user.

As an example, when the user equipment of the user accesses a wireless access
25 point, the specific application on the user equipment jumps to a recommended page and displays one or more groups on the recommended page. The user then may select a target group from the one or more groups to join temporarily.

As another example, when the specific application on the user equipment detects that the user equipment accesses a wireless access point, notification
30 information displaying one or more groups may be popped out. The user may then

select a target group from the one or more groups to join temporarily.

The second module 102 detects whether the current group dwell time of the user in the target group equals to or is greater than a group retention time.

As an example, the current group dwell time is calculated since the user joins
5 the target group. The group retention time may be set by the user, or may be a system default value. It is determined whether the current group dwell time equals to or is greater than the group retention time by comparing the current group dwell time to the group retention time.

Preferably, the second module 102 detects whether the current group dwell
10 time of the user in the target group equals to or is greater than the group retention time when the user participates in the communication of the target group. The user participating in the communication of the target group comprise at least one of: the user checking historic communication information received in the target group; the user sending new communication information in the target group; the user receiving
15 new communication information in the target group; the user belonging to the target group.

Here, the user belongs to the target group after the user joins the target group. The user no longer belongs to the target group when the user quits the target group.

Preferably, the first module 101 adds the user to the target group according to
20 the group joining request for the target group by the user and initiates a corresponding group retention timer according to the group retention time of the target group. The second module 102 detects whether the group retention timer expires at the current time instant.

As an example, the current group dwell time can be calculated by using the
25 group retention timer. When the user joins the target group, the group retention timer is initiated and starts to calculate the current group dwell time. It is determined whether the group retention timer expires at the current time instant by comparing the current group dwell time and the group retention time according to the timing of the group retention timer.

30 If yes, the third module 103 presents the group retention selection information

of the target group to the user.

As an example, if the current group dwell time of the user in the target group equals to or is greater than the group retention time, group retention selection information (e.g., in form of a prompt box) of the target group can be presented to the user to prompt the user to select whether to retain the target group.

The fourth module 104 retains the user in the target group if the user selects to retain the target group.

As an example, if the user selects to retain the target group based on the group retention selection information, the user formally joins the target group. There is no need to calculate the current group dwell time of the user in the target group thereafter, thus saving system resources.

Preferably, the fourth module 104 moves the user out of the target group if the user selects to drop the target group.

As an example, if the user selects to drop the target group based on the group retention selection information, the user is moved out of the target group. The user no longer belongs to the target group thereafter.

Figure 5 shows a group management apparatus 1 according to another embodiment of the application, wherein the group management apparatus 1 includes a seventh module 107', an eighth module 108', a ninth module 109', a tenth module 110' and an eleventh module 111'.

Specifically, the seventh module 107' obtains one or more groups matching a group search request according to the group search request by the user. The eighth module 108' adds the user to the target group of the one or more groups according to the group joining request for the one or more groups by the user. The ninth module 109' detects whether the current group dwell time of the user in the target group equals to or is greater than a group retention time. If yes, the tenth module 110' presents group retention selection information of the target group to the user. The eleventh module 111' retains the user in the target group if the user selects to retain the target group.

Here, the group management apparatus 1 includes but is not limited to: user

devices, apparatus composed by integration of user devices and network devices via networks. User equipments include but are not limited to mobile electronic products capable of human-machine interaction with users via touchpads, for example, an intelligent phone, a tablet, etc. The mobile electronic products can run on any
5 operating system, such as android operating system, iOS operating system, etc. Network devices include an electronic device of automatically performing numeral calculations and information processing according to preset or stored instructions. Its hardware includes but is not limited to micro-processors, application specific integrated circuits (ASIC), programmable gate array (FPGA), digital signal
10 processors (DSP), embedded devices, etc. Network devices include but are not limited to: computers, mainframes, a single network server, a cloud composed of multiple network server sets or multiple servers. Cloud as used herein is formed by a massive amount of computers or network servers based on cloud computing, wherein cloud computing is a type of distributed computing, which is a virtual
15 super computer composed of a group of loosely coupled computer sets. Networks include but are not limited to internet, Wide Area Network (WAN), Metropolitan Area Network (MAN), Local Area Network (LAN), Virtual Private Network (VPN), wireless ad-hoc network, etc. Preferably, the group management apparatus 1 can also be scripts programs running on user equipments, or an apparatus composed of
20 an integration of user equipments, network devices, and touch terminals or an integration of network devices and touch terminals via networks. Of course, it can be appreciated by those skilled in the art that the group management apparatus 1 is merely an example. Other existing group management apparatus 1 or those that may appear in the future are also applicable to the present application and fall within the
25 scope of the protection scope of the application and are incorporated herein by reference.

As an example, when the user is using a specific application on the user equipment (including an intelligent mobile phone, a tablet, etc.), the user may search and obtain one or more matching groups by entering keywords (or entering
30 group number) or in other ways. The user may then select a target group from the

one or more groups to join temporarily. The server of the specific application adds the user to the target group in response to the group joining request for the target group by the user.

The current group dwell time is calculated since the user joins the target group.

- 5 The group retention time may be set by the user, or may be a system default value. It is determined whether the current group dwell time equals to or is greater than the group retention time by comparing the current group dwell time to the group retention time.

- 10 If the current group dwell time of the user in the target group equals to or is greater than the group retention time, group retention selection information (e.g., in form of a prompt box) of the target group can be presented to the user to prompt the user to select whether to retain the target group. If the user selects to retain the target group based on the group retention selection information, the user formally joins the target group. There is no need to calculate the current group dwell time of the user in the target group thereafter, thus saving system resources.

Figure 6 shows a group management apparatus 1 according to a further embodiment of the application, wherein the group management apparatus 1 includes a twelfth module 112'', a thirteenth module 113'', a fourteenth module 114'', a fifteenth module 115'' and a sixteenth module 116''.

- 20 Specifically, the twelfth module 112'' obtains one or more groups recommended for a user when a user device of the user accesses a wireless access point. The thirteenth module 113'' adds the user to the target group of the one or more groups according to the group joining request for the one or more groups by the user. The fourteenth module 114'' detects whether the current group dwell time of the user in the target group equals to or is greater than a group retention time. If yes, the fifteenth module 115'' presents group retention selection information of the target group to the user. The sixteenth module 116'' retains the user in the target group if the user selects to retain the target group.

- 30 Here, the group management apparatus 1 includes but is not limited to: user devices, apparatus composed by integration of user devices and network devices via

networks. User equipments include but are not limited to mobile electronic products capable of human-machine interaction with users via touchpads, for example, an intelligent phone, a tablet, etc. The mobile electronic products can run on any operating system, such as android operating system, iOS operating system, etc.

5 Network devices include an electronic device of automatically performing numeral calculations and information processing according to preset or stored instructions. Its hardware includes but is not limited to micro-processors, application specific integrated circuits (ASIC), programmable gate array (FPGA), digital signal processors (DSP), embedded devices, etc. Network devices include but are not
10 limited to: computers, mainframes, a single network server, a cloud composed of multiple network server sets or multiple servers. Cloud as used herein is formed by a massive amount of computers or network servers based on cloud computing, wherein cloud computing is a type of distributed computing, which is a virtual super computer composed of a group of loosely coupled computer sets. Networks
15 include but are not limited to internet, Wide Area Network (WAN), Metropolitan Area Network (MAN), Local Area Network (LAN), Virtual Private Network (VPN), wireless ad-hoc network, etc. Preferably, the group management apparatus 1 can also be scripts programs running on user equipments, or an apparatus composed of an integration of user equipments, network devices, and touch terminals or an
20 integration of network devices and touch terminals via networks. Of course, it can be appreciated by those skilled in the art that the group management apparatus 1 is merely an example. Other existing group management apparatus 1 or those that may appear in the future are also applicable to the present application and fall within the scope of the protection scope of the application and are incorporated herein by
25 reference.

As an example, when the user equipment (including an intelligent mobile phone, a tablet, etc.) of the user accesses a wireless access point, the specific application on the user equipment jumps to a recommendation page and displays one or more groups on the recommendation page. The user then may select a target
30 group from the one or more groups to join temporarily. Or when the specific

application on the user equipment detects that the user equipment accesses a wireless access point, notification information displaying one or more groups may be popped out. The user may then select a target group from the one or more groups to join temporarily.

5 The server of the specific application adds the user to the target group in response to the group joining request for the target group by the user. The current group dwell time is calculated since the user joins the target group. The group retention time may be set by the user, or may be a system default value. It is determined whether the current group dwell time equals to or is greater than the
10 group retention time by comparing the current group dwell time to the group retention time.

 If the current group dwell time of the user in the target group equals to or is greater than the group retention time, group retention selection information (e.g., in form of a prompt box) of the target group can be presented to the user to prompt the
15 user to select whether to retain the target group. If the user selects to retain the target group based on the group retention selection information, the user formally joins the target group. There is no need to calculate the current group dwell time of the user in the target group thereafter, thus saving system resources.

 According to a yet further aspect of the application, a computer readable
20 medium comprising instructions is provided, when executed, cause a system to:

 add a user to a target group according to a group joining request for the target group by the user;

 detect whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

25 if yes, present group retention selection information of the target group to the user; and

 if the user selects to retain the target group, retain the user in the target group.

 According to a yet further aspect of the application, a computer readable medium comprising instructions is provided, when executed, cause a system to:

30 obtain one or more groups matching a group search request according to the

group search request by a user;

add the user to a target group of the one or more groups according to a group joining request for the target group by the user;

detect whether a current group dwell time of the user in the target group equals
5 to or is greater than a group retention time;

if yes, present group retention selection information of the target group to the user; and

if the user selects to retain the target group, retain the user in the target group.

According to a yet further aspect of the application, a computer readable
10 medium comprising instructions is provided, when executed, cause a system to:

obtain one or more groups recommended for a user when a user equipment of the user accesses a wireless access point;

add the user to a target group of the one or more groups according to a group joining request for the target group by the user;

15 detect whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

if yes, present group retention selection information of the target group to the user; and

if the user selects to retain the target group, retain the user in the target group.

20 According to a yet further aspect of the application, a device for group management is provided, wherein the device comprises:

a processor; and

a memory arranged to store computer executable instructions, when executed, cause the processor to:

25 add a user to a target group according to a group joining request for the target group by the user;

detect whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

30 if yes, present group retention selection information of the target group to the user; and

if the user selects to retain the target group, retain the user in the target group.

According to a yet further aspect of the application, a device for group management is provided, wherein the device comprises:

a processor; and

5 a memory arranged to store computer executable instructions, when executed, cause the processor to:

obtain one or more groups matching a group search request according to the group search request by a user;

10 add the user to a target group of the one or more groups according to a group joining request for the target group by the user;

detect whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

if yes, present group retention selection information of the target group to the user; and

15 if the user selects to retain the target group, retain the user in the target group.

According to a yet further aspect of the application, a device for group management is provided, wherein the device comprises:

a processor; and

20 a memory arranged to store computer executable instructions, when executed, cause the processor to:

obtain one or more groups recommended for a user when a user equipment of the user accesses a wireless access point;

add the user to a target group of the one or more groups according to a group joining request for the target group by the user;

25 detect whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

if yes, present group retention selection information of the target group to the user; and

if the user selects to retain the target group, retain the user in the target group.

30 Compared with the prior art, the method of the present application comprises:

adding a user to a target group according to a group joining request by the user, and starting to calculate a current group dwell time of the user in the target group; detecting whether the current group dwell time equals to or is greater than a group retention time; if yes, presenting group retention selection information of the target group to the user; and if the user selects to retain in the target group, retaining the user in the target group. In the present application, when the current group dwell time of the user in the target group is greater than or equals to the group retention time, the user is prompted to select whether to retain the target group, so that the user can join groups of interest conveniently and quit groups of no interest timely, thus improving user experience. Further, the present application further comprises obtaining a group retention time for the target group set by the user. Users are able to set different group retention time for different groups, thus flexibility is improved.

It should be noted that the present application can be implemented in software and/or a combination of software and hardware, for example, by using an application specific integrated circuit (ASIC), a general purpose computer, or any other similar hardware device. In one embodiment, the software program of the present application can be executed by a processor to implement the steps or functions described above. Likewise, the software programs (including related data structures) of the present application can be stored in a computer readable storage medium such as a RAM memory, a magnetic or optical drive or a floppy disk and the like. In addition, some of the steps or functions of the present application may be implemented in hardware, for example, as a circuit that cooperates with a processor to perform various steps or functions.

In addition, a portion of the present application can be embodied as a computer program product, such as computer program instructions, when executed by a computer, can invoke or provide a method and/or technical solution in accordance with the present application. The program instructions for invoking the method of the present application may be stored in a fixed or removable storage medium, and/or transmitted by a data stream in a broadcast or other signal carrier medium,

and/or stored in a working memory of the computer device in which the program instructions run. Herein, an embodiment in accordance with the present application includes an apparatus including a memory for storing computer program instructions and a processor for executing program instructions, wherein when the
5 computer program instructions are executed by the processor, triggering the apparatus to operate the aforementioned methods and/or technical solutions in accordance with various embodiments of the present application.

For those skilled in the art, it is apparent that the present application is not limited to the details of the above-mentioned exemplary embodiments, and the
10 present application can be implemented in other specific forms without departing the spirit or basic features of the present application. Therefore, the present embodiments are to be considered as illustrative and not restrictive. The scope of the present application is defined by the appended claims rather than the above-mentioned description, and therefore it is intended that all changes which fall
15 within the meaning and range of equivalency of the claims are embraced in the present application. Any reference signs in the claims should not be construed as limiting the claims involved. In addition, it is apparent that the word “comprising” does not exclude other elements or steps, and the singular does not exclude the plural. A plurality of units or means stated in the apparatus claims may also be
20 implemented by one unit or means by means of software or hardware. The terms first and second and the like are used to represent names and do not represent any particular order.

Claims

1. A method for group management, the method comprising:

adding a user to a target group according to a group joining request for the target
5 group by the user;

detecting whether a current group dwell time of the user in the target group equals
to or is greater than a group retention time;

if yes, presenting group retention selection information of the target group to the
user; and

10 if the user selects to retain the target group, retaining the user in the target group.

2. The method of claim 1, wherein if the user selects to retain the target group,
retaining the user in the target group further comprising:

if the user selects to drop the target group, moving the user out of the target group.

15

3. The method of claim 1 or claim 2, wherein adding the user to the target group
according to a group joining request for the target group by the user comprises:

adding the user to the target group according to the group joining request for the
target group by the user;

20 obtaining a group retention time for the target group set by the user.

4. The method of any of claims 1 to 3, wherein detecting whether the current group
dwell time of the user in the target group equals to or is greater than a group retention
time comprises:

25 detecting whether the current group dwell time of the user in the target group
equals to or is greater than the group retention time when the user participates in the
communication of the target group.

5. The method of any of claims 1 to 4, wherein adding the user to the target group
30 according to a group joining request for the target group by the user comprises:

adding the user to the target group according to the group joining request for the target group by the user and initiating a corresponding group retention timer according to the group retention time of the target group;

5 wherein detecting whether the current group dwell time of the user in the target group equals to or is greater than the group retention time comprises:
detecting whether the group retention timer expires at the current time instant.

6. The method of any of claims 1 to 5, wherein the method further comprising:
obtaining one or more groups matching a group search request according to the
10 group search request by the user;

wherein adding the user to the target group according to the group joining request for the target group by the user comprises:

15 adding the user to the target group in the one or more groups according to a group joining request for the target group by the user.

7. The method of any of claims 1 to 5, wherein the method further comprising:
obtaining one or more groups recommended for the user when a user equipment of the user accesses a wireless access point;

20 wherein adding the user to the target group according to the group joining request for the target group by the user comprises:

adding the user to the target group in the one or more groups according to a group joining request for the target group by the user.

8. A method for group management, the method comprising:
25 obtaining one or more groups matching a group search request according to the group search request by a user;

adding the user to a target group in the one or more groups according to a group joining request for the target group by the user;

30 detecting whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

if yes, presenting group retention selection information of the target group to the user; and

if the user selects to retain the target group, retaining the user in the target group.

5 9. A method for group management, the method comprising:

obtaining one or more groups recommended for a user when a user equipment of the user accesses a wireless access point;

adding the user to a target group of the one or more groups according to a group joining request for the target group by the user;

10 detecting whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

if yes, presenting group retention selection information of the target group to the user; and

if the user selects to retain the target group, retaining the user in the target group.

15

10. An apparatus for group management, the apparatus comprising:

a first module for adding a user to a target group according to a group joining request for the target group by the user;

20 a second module for detecting whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

a third module for presenting group retention selection information of the target group to the user if the current group dwell time of the user in the target group equals to or is greater than the group retention time; and

25 a fourth module for retaining the user in the target group if the user selects to retain the target group.

11. The apparatus of claim 10, wherein the fourth module is further for moving the user out of the target group if the user selects to drop the target group.

30 12. The apparatus of claim 10 or 11, wherein the first module is for

adding the user to the target group according to the group joining request for the target group by the user;

obtaining a group retention time for the target group set by the user.

5 13. The apparatus of any of claims 10 to 12, wherein the second module is for detecting whether the current group dwell time of the user in the target group equals to or is greater than the group retention time when the user participates in the communication of the target group.

10 14. The apparatus of any of claims 10 to 13, wherein the first module is for adding the user to the target group according to the group joining request for the target group by the user and initiating a corresponding group retention timer according to the group retention time of the target group;

wherein the second module is for

15 detecting whether the group retention timer expires at the current time instant.

15. The apparatus of any of claims 10 to 14, wherein the apparatus further comprising:

a fifth module for obtaining one or more groups matching a group search request

20 according to the group search request by the user;

wherein the first module is for

adding the user to the target group of the one or more groups according to the group joining request for the target group by the user.

25 16. The apparatus of any of claims 10 to 14, wherein the apparatus further comprising:

a sixth module for obtaining one or more groups recommended for the user when a user equipment of the user accesses a wireless access point;

wherein the first module is for

30 adding the user to the target group in the one or more groups according to the

group joining request for the target group by the user.

17. An apparatus for group management, the apparatus comprising:

5 a seventh module for obtaining one or more groups matching a group search request according to the group search request by the user;

an eighth module for adding the user to a target group in the one or more groups according to a group joining request for the target group by the user;

a ninth module for detecting whether the current group dwell time of the user in the target group equals to or is greater than a group retention time;

10 a tenth module for presenting group retention selection information of the target group to the user if the current group dwell time of the user in the target group equals to or is greater than the group retention time; and

an eleventh module for retaining the user in the target group if the user selects to retain the target group.

15

18. An apparatus for group management, the apparatus comprising:

a twelfth module for obtaining one or more groups recommended for a user when a user equipment of the user accesses a wireless access point;

20 a thirteenth module for adding the user to a target group of the one or more groups according to a group joining request for the target group by the user;

a fourteenth module for detecting whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

25 a fifteenth module for presenting group retention selection information of the target group to the user if the current group dwell time of the user in the target group equals to or is greater than the group retention time; and

a sixteenth module for retaining the user in the target group if the user selects to retain the target group.

19. A computer readable medium comprising instructions, when executed, cause a

30 system to:

add a user to a target group according to a group joining request for the target group by the user;

detect whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

5 if yes, present group retention selection information of the target group to the user;
and

if the user selects to retain the target group, retain the user in the target group.

20. A computer readable medium comprising instructions, when executed, cause a
10 system to:

obtain one or more groups matching a group search request according to the group search request by a user;

add the user to a target group of the one or more groups according to a group joining request for the target group by the user;

15 detect whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

if yes, present group retention selection information of the target group to the user;
and

if the user selects to retain the target group, retain the user in the target group.

20
21. A computer readable medium comprising instructions, when executed, cause a system to:

obtain one or more groups recommended for a user when a user equipment of the user accesses a wireless access point;

25 add the user to a target group of the one or more groups according to a group joining request for the target group by the user;

detect whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

if yes, present group retention selection information of the target group to the user;

30 and

if the user selects to retain the target group, retain the user in the target group.

22. A device for group management, the device comprising:

a processor; and

5 a memory arranged to store computer executable instructions, when executed, cause the processor to:

add a user to a target group according to a group joining request for the target group by the user;

10 detect whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

if yes, present group retention selection information of the target group to the user; and

if the user selects to retain the target group, retain the user in the target group.

15 23. A device for group management, the device comprising:

a processor; and

a memory arranged to store computer executable instructions, when executed, cause the processor to:

20 obtain one or more groups matching a group search request according to the group search request by a user;

add the user to a target group of the one or more groups according to a group joining request for the target group by the user;

detect whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

25 if yes, present group retention selection information of the target group to the user; and

if the user selects to retain the target group, retain the user in the target group.

24. A device for group management, the device comprising:

30 a processor; and

a memory arranged to store computer executable instructions, when executed, cause the processor to:

obtain one or more groups recommended for a user when a user equipment of the user accesses a wireless access point;

5 add the user to a target group of the one or more groups according to a group joining request for the target group by the user;

detect whether a current group dwell time of the user in the target group equals to or is greater than a group retention time;

if yes, present group retention selection information of the target group to the user;

10 and

if the user selects to retain the target group, retain the user in the target group.