Title: MESSAGE PUSHING METHOD, APPARATUS AND SERVER

Detect whether inactivity of a social application account in a predetermined time period exceeds a predetermined threshold

Detect whether a new message exists in a social information sharing platform of the social application account in the predetermined time period if a detection result is that the inactivity exceeds the predetermined threshold

Push a reminder message to a communication address bound to the social application account if a detection result is that the new message exists

FIG. 1

Abstract: A method is performed at a social networking server, comprising detecting whether there is any activity at a first user account of a group of user accounts associated with a social networking application for a predefined time period and detecting if there is a predefined number of activities at the group of user accounts excluding the first user account during the predefined time period. The method includes, when there is no activity at the first user account for the predefined time period and there is at least the predefined number of activities at the group of user accounts excluding the first user account during the predefined time period, sending a notification to the first user account, the notification including information of the predefined number of activities at the group of user accounts excluding the first user account.
MESSAGE PUSHING METHOD, APPARATUS AND SERVER

RELATED APPLICATION

[0001] This application claims priority to Chinese Patent Application No. 2013 10432755.4, "MESSAGE PUSHING METHOD, APPARATUS AND SERVER," filed on September 22, 2013, which is hereby incorporated by reference in its entirety.

TECHNICAL FIELD

[0002] The present disclosure relates to the field of network technologies, and in particular, to a message pushing method, apparatus and a server.

BACKGROUND

[0003] With development of mobile Internet, social networking applications have become one of the applications most widely used on mobile terminals, and the mobile terminals may be electronic devices such as smart phones, tablet computers, e-book readers or handheld computers.

[0004] When inactivity of a user using a social networking application is not high, that is, the social networking application has not been used for a long time, a server may send a reminder message to the user by way of an SMS or a mail, where the reminder message is used for reminding the user to use the social networking application. Generally, when the server detects that a social application account of a certain user satisfies the following conditions: A. the user has not logged on to the social application account for 24 hours; B. there is a new message or a new friend application sent to the social application account, a reminder SMS is sent to a cell phone bound to the social application account or a reminder mail is sent to a mail bound to the social application account, so as to improve activity of the user.

[0005] During implementation of the present disclosure, improving activity of the user using the social application account completely depends on whether there is a new message or a new friend application sent to the social application account, that is, when there is no new message or new friend application sent to the social application account, the server may not send a reminder SMS or a reminder mail, resulting in that the reminder SMS or the reminder mail cannot be timely sent to a user who should be reminded.

SUMMARY

[0006] The above deficiencies and other problems associated with pushing messages to users of a social networking application are addressed by the techniques disclosed herein. In some embodiments, the method for pushing messages to users is implemented on a computer system that
has one or more processors, memory and one or more modules, programs or sets of instructions stored in the memory for performing multiple functions. Instructions for performing these functions may be included in a computer program product configured for execution by one or more processors.

0007 In one aspect, a computer-implemented method performed at a social networking server includes detecting whether there is any activity at a first user account of a group of user accounts associated with a social networking application for a predefined time period and detecting if there is a predefined number of activities at the group of user accounts excluding the first user account during the predefined time period. The method includes, in accordance with a determination that there is no activity at the first user account for the predefined time period and there is at least the predefined number of activities at the group of user accounts excluding the first user account during the predefined time period, sending a notification to the first user account, the notification including information of the predefined number of activities at the group of user accounts excluding the first user account.

0008 In another aspect, a social networking server includes memory, one or more processors, and one or more programs stored in the memory and configured for execution by the one or more processors to perform the method described herein.

0009 In another aspect, a non-transitory computer readable storage medium stores one or more programs, the one or more programs comprising instructions, which when executed by a social networking server, cause the server to perform the method described herein.

0010 Various advantages of the disclosed technology would be apparent in light of the descriptions below.

BRIEF DESCRIPTION OF THE DRAWINGS

0011 The aforementioned features and advantages of the disclosure as well as additional features and advantages thereof will be more clearly understood hereinafter as a result of a detailed description of preferred embodiments when taken in conjunction with the drawings.

0012 To illustrate the technical solutions according to the embodiments of the present disclosure more clearly, the accompanying drawings for describing the embodiments are introduced briefly in the following. Apparently, the accompanying drawings in the following description are merely some embodiments of the present disclosure; persons of ordinary skill in the art may obtain other drawings according to the accompanying drawings without paying any creative efforts.

0013 FIG. 1 is a method flowchart of a message pushing method according to some embodiments;

0014 FIG. 2 is a method flowchart of a message pushing method according to some embodiments;
FIG. 3 is a method flowchart of a message pushing method according to some embodiments;

FIG. 4 is a schematic diagram of implementation of a message pushing method according to some embodiments;

FIG. 5 is a structural block diagram of a message pushing apparatus according to some embodiments;

FIG. 6 is a structural block diagram of a message pushing apparatus according to some embodiments;

FIG. 7 is a structural block diagram of a message pushing apparatus according to some embodiments;

FIG. 8 is a device composition diagram of a server according to some embodiments;

FIG. 9 is a block diagram of a client-server environment for pushing messages in accordance with some embodiments;

FIG. 10 is a block diagram of an exemplary server for pushing messages in accordance with some embodiments;

FIG. 11 is a block diagram of an apparatus of pushing messages in accordance with some embodiments; and

FIGS. 12A-12B are a flowchart of a method of pushing messages, in accordance with some embodiments.

Like reference numerals refer to corresponding parts throughout the several views of the drawings.

DESCRIPTION OF EMBODIMENTS

Reference will now be made in detail to embodiments, examples of which are illustrated in the accompanying drawings. In the following detailed description, numerous specific details are set forth in order to provide a thorough understanding of the subject matter presented herein. But it will be apparent to one skilled in the art that the subject matter may be practiced without these specific details. In other instances, well-known methods, procedures, components, and circuits have not been described in detail so as not to unnecessarily obscure aspects of the embodiments.

To make the objectives, the technical solutions and advantages of the present disclosure much clearer, the embodiments of the present disclosure are further described below in detail with reference to the accompanying drawings.

Referring to FIG. 1, FIG. 1 is a method flowchart of a message pushing method according to some embodiments. The message pushing method includes the following steps.
Step 102. Detect whether inactivity of a social application account in a predetermined time period exceeds a predetermined threshold.

A server detects whether inactivity of a social application account in a predetermined time period exceeds a predetermined threshold.

Step 104. Detect whether a new message exists in a social information sharing platform of the social application account in the predetermined time period if a detection result is that the inactivity exceeds the predetermined threshold.

The server detects whether a new message exists in a social information sharing platform of the social application account in the predetermined time period if a detection result is that the inactivity of the social application account in the predetermined time period does not exceed the predetermined threshold.

The social information sharing platform is a platform in the social application account where all contacts publish messages and communicate openly, and an update frequency of a message of the social information sharing platform is far higher than a frequency at which there is a new message or a new friend application sent to the social application account or a friend in a chain of friends newly applies for a social networking application.

Step 106. Push a reminder message to a communication address bound to the social application account if a detection result is that the new message exists.

The server pushes a reminder message to a communication address bound to the social application account if a detection result is that the new message exists in the social information sharing platform of the social application account in the predetermined time period.

To sum up, the message pushing method in the embodiment of the present disclosure, by detecting whether inactivity of a social application account in a predetermined time period exceeds a predetermined threshold, detecting whether a new message exists in a social information sharing platform of the social application account in the predetermined time period if the inactivity exceeds the predetermined threshold, and pushing a reminder message to a communication address bound to the social application account if the new message exists, to remind a user to use the social application account, thereby improving activity of the social application account, solves the problem that the server may not send a reminder SMS or a reminder mail if there is no new message or new friend application sent to the social application account, resulting in that the reminder SMS or the reminder mail cannot be timely sent to a user who should be reminded; and achieves the effect that the server may be triggered to send a reminder SMS or a reminder mail as long as the new message exists in the social information sharing platform of the social application account, to timely send the reminder SMS or the reminder mail to the user who should be reminded.
Reference may be made to the following two embodiments for specific implementation of the step of detecting whether inactivity of a social application account in a predetermined time period exceeds a predetermined threshold and the step of detecting whether a new message exists in a social information sharing platform of the social application account in the predetermined time period in the embodiment.

Firstly, specific implementation for the step of detecting whether inactivity of a social application account in a predetermined time period exceeds a predetermined threshold is introduced in detail.

Currently, the operating system type of terminals used by users is mainly divided into an IOS system and an Android system, and the two systems both support programs to run in the background. In the IOS system, if time in which a program runs in the background exceeds a certain time, the IOS system may automatically end running of the program; while it is relatively difficult for the Android system to automatically end a program running in the background, which generally requires the user to manually end it. If the user has not manually ended the program running in the background, the program is constantly running in the background. It can be obtained according to characteristics of the two systems that an average background running duration of a program in the Android system is greater than that in the IOS system. According to the characteristics, the server may determine different activity measurement methods for different operating systems.

Referring to FIG. 2, FIG. 2 is a method flowchart of a message pushing method according to another embodiment of the present disclosure. The message pushing method includes the following steps.

Step 201. Acquire an operating system type corresponding to a social application account.

A server acquires an operating system type corresponding to a social application account.

For example, if an operating system corresponding to the social application account is an Android system, the operating system type acquired by the server is an Android system.

It should be noted that, the operating system corresponding to the social application account may be an operating system of a terminal when the social application account was logged on last time, or may be an operating system corresponding to a terminal used when the social application account is registered. The server has recorded the operating system type of the terminal each time the social application account is logged on. Generally, the server acquires the operating system type of the terminal when the social application account was logged on last time. The embodiment of the present disclosure takes that the operating system corresponding to the social
application account is an operating system of a terminal when the social application account was logged on last time as an example for description.

[0045] Step 202. Detect according to the acquired operating system type whether a duration in which the social application account is in a non-logged on state exceeds a first threshold, or whether a duration in which the social application account is in a non-transmitting state exceeds a second threshold.

[0046] The server detects according to the acquired operating system type whether a duration in which the social application account is in a non-logged on state exceeds a first threshold, and/or whether a duration in which the social application account is in a non-transmitting state exceeds a second threshold.

[0047] Specifically, if the operating system type corresponding to the social application account is a first system, whether a duration in which the social application account is in a non-logged on state exceeds a first threshold is detected, where the first system may be an IOS system; if the operating system type corresponding to the social application account is a second system, whether a duration in which the social application account is in a non-transmitting state exceeds a second threshold is detected, where the second system is an Android system; where an average background running duration of a social networking application in the second system is greater than that in the first system.

[0049] As an average background running duration of a program in the Android system is greater than that in the IOS system, it is assumed in this embodiment that the first system is an IOS system and the second system is an Android system. If the operating system of the terminal when the social networking application was logged on last time is an IOS system, the server detects whether the duration in which the social networking application is in a non-logged on state exceeds 24 hours; if the operating system of the terminal when the social networking application was logged on last time is an Android system, the server detects whether the duration in which the social networking application is in a non-transmitting state exceeds 7 days. The non-transmitting state includes two situations, namely, a non-logged on state and a logged on but non-transmitting state.

[0051] Step 203. Detect whether a new message exists in a social information sharing platform of the social application account in the predetermined time period if a detection result is that the duration exceeds the predetermined threshold.

[0052] The server detects whether a new message exists in a social information sharing platform of the social application account in the predetermined time period if a detection result is that the duration exceeds the predetermined threshold.
The social information sharing platform is a platform in the social application account where all contacts publish messages and communicate openly. For example, if the operating system of the terminal when the social networking application was logged on last time is an IOS system, and the duration in which the social networking application is in a non-logged on state exceeds 24 hours, the server detects whether the new message exists in the social information sharing platform of the social application account in a non-logged on period.

If the operating system of the terminal when the social networking application was logged on last time is an Android system, and the duration in which the social networking application is in a non-transmitting state exceeds 7 days, the server detects whether the new message exists in the social information sharing platform of the social application account in a non-transmitting period.

Step 204. Push a reminder message to a communication address bound to the social application account if a detection result is that the new message exists.

The server pushes a reminder message to a communication address bound to the social application account if a detection result is that the new message exists in the social information sharing platform of the social application account in the predetermined period, where the communication address bound to the social application account may be a cell phone number or a mail address filled by a user in registration of the social application account.

For example, the new message exists in the social information sharing platform of the social application account in a non-logged on period or a non-transmitting period, if the communication address bound to the social application account is a cell phone number, the server sends an SMS reminder message to the cell phone number; and if the communication address bound to the social application account is a mail address, the server sends a mail reminder message to the mail address.

As an update frequency of a message of the social information sharing platform is far higher than a frequency at which there is a new message or a new friend application sent to the social application account or a friend in a chain of friends newly applies for a social networking application, possibility of pushing a reminder message to a user in the message pushing method according to the embodiment of the present disclosure is far higher than that of pushing a reminder message to a user according to the frequency at which there is a new message or a new friend application sent to the social application account or a friend in a chain of friends newly applies for a social networking application.

It should be noted that, the message pushing method according to the embodiment of the present disclosure may also be combined with the method of pushing a reminder message to a user according to whether there is a new message or a new friend application sent to the social
application account or a friend in a chain of friends newly applies for a social networking application, that is, on the premise of whether a duration in which the social application account is in a non-logged on state exceeds a first threshold, and/or whether a duration in which the social application account is in a non-transmitting state exceeds a second threshold, if it is detected that there is no new message or new friend application sent to the social application account or no friend in a chain of friends newly applies for a social networking application, whether a new message exists in a social information sharing platform of the social application account in a predetermined time period is detected, so as to push a reminder message to a communication address bound to the social application account according to an ultimate detection result.

To sum up, the message pushing method in the embodiment of the present disclosure, by acquiring an operating system type corresponding to a social application account, detecting according to characteristics of different operating systems whether a duration in which the social application account is in a non-logged on state exceeds a first threshold or whether a duration in which the social application account is in a non-transmitting state exceeds a second threshold, detecting whether a new message exists in a social information sharing platform of the social application account in a predetermined time period if the duration in which the social application account is in a non-logged on state exceeds the first threshold or the duration in which the social application account is in a non-transmitting state exceeds the second threshold, and pushing a reminder message to a communication address bound to the social application account if the new message exists, to remind a user to use the social application account, thereby improving activity of the social application account, solves the problem that the server may not send a reminder SMS or a reminder mail if there is no new message or new friend application sent to the social application account, resulting in that the reminder SMS or the reminder mail cannot be timely sent to a user who should be reminded; and achieves the effect that the server may be triggered to send a reminder SMS or a reminder mail as long as the new message exists in the social information sharing platform of the social application account, to timely send the reminder SMS or the reminder mail to the user who should be reminded.

Secondly, specific implementation for the step of detecting whether a new message exists in a social information sharing platform of the social application account in the predetermined time period is introduced in detail.

The new message of the social information sharing platform of the social application account review messages for the social application account and/or update messages of contacts of the social application account.
A new message displayed in a circle of friends in a WeChat account of a user includes various forms of review messages of friends in the WeChat account of the user about messages published in the circle of friends by the user and update messages newly published by the friends in the WeChat account; where the review messages include general review messages, praise (indicating agreement or concern) messages and the like; the update messages include status messages, image messages or the like newly published in the circle of friends by the friends.

Referring to FIG. 3, FIG. 3 is a method flowchart of a message pushing method according to another embodiment of the present disclosure. The message pushing method includes the following steps:

Step 301. Detect whether a social application account corresponds to a specified area.

The server detects whether a social application account corresponds to a specified area; specifically, a specified area corresponding to a social application account is an area corresponding to a network used when the social application account is logged on, a registration area of the social application account, and/or an area corresponding to an area version number of a social networking application corresponding to the social application account; where the area corresponding to a network used when the social application account is logged on may be an area corresponding to a network used when the social application account was logged on last time, or may be an area corresponding to a network generally used when the social application account is logged on.

If the specified area corresponding to the social application account is the area corresponding to the network used when the social application account is logged on, the server may determine the corresponding area according to an IP address when the social application account is logged on, so as to detect whether the social application account corresponds to the specified area.

If the specified area corresponding to the social application account is the registration area of the social application account, the server detects whether the registration area when the social application account is registered is the specified area.

If the specified area corresponding to the social application account is the area corresponding to the area version number of the social networking application, the server determines the area corresponding to the social application account according to the area version number of the social networking application, so as to detect whether the social application account corresponds to the specified area.

For example, the server detects whether a WeChat account corresponds to an area outside China.
It should be noted that, there is no sequence between step 301 and step 302, that is, it is feasible that step 302 is performed first and then step 301 is performed.

Step 302. Acquire an operating system type corresponding to the social application account.

If a detection result is that the social application account corresponds to the specified area, the server acquires an operating system type corresponding to the social application account.

For example, if the operating system corresponding to the social application account is an Android system, the operating system type acquired by the server is an Android system.

It should be noted that, the operating system corresponding to the social application account may be an operating system of a terminal when the social application account was logged on last time, or may be an operating system corresponding to a terminal used when the social application account is registered. The server has recorded the operating system type of the terminal each time the social application account is logged on. Generally, the server acquires the operating system type of the terminal when the social application account was logged on last time. The embodiment of the present disclosure takes that the operating system corresponding to the social application account is an operating system of a terminal when the social application account was logged on last time as an example for description.

Step 303. Detect according to the acquired operating system type whether a duration in which the social application account is in a non-logged on state exceeds a first threshold, or whether a duration in which the social application account is in a non-transmitting state exceeds a second threshold.

The server detects according to the acquired operating system type whether a duration in which the social application account is in a non-logged on state exceeds a first threshold, and/or whether a duration in which the social application account is in a non-transmitting state exceeds a second threshold.

Specifically, if the operating system type corresponding to the social application account is a first system, whether a duration in which the social application account is in a non-logged on state exceeds a first threshold is detected;

if the operating system type corresponding to the social application account is a second system, whether a duration in which the social application account is in a non-transmitting state exceeds a second threshold is detected;

where an average background running duration of a social networking application in the second system is greater than that in the first system.
As an average background running duration of a program in the Android system is greater than that in the IOS system, it is assumed that the first system is an IOS system and the second system is an Android system, if the operating system of the terminal when the social networking application was logged on last time is an IOS system, the server detects whether the duration in which the social networking application is in a non-logged on state exceeds 24 hours; if the operating system of the terminal when the social networking application was logged on last time is an Android system, the server detects whether the duration in which the social networking application is in a non-transmitting state exceeds 7 days.

Step 304. Detect whether there is a new message or a new friend application sent to the social application account or a friend in a chain of friends newly applies for a social networking application in the predetermined time period.

If a detection result is that the duration exceeds the predetermined threshold, the server detects whether there is a new message or a new friend application sent to the social application account or a friend in a chain of friends newly applies for a social networking application in the predetermined time period.

For example, if the operating system of the terminal when a user logged on to a WeChat account last time is an IOS system, and a duration in which the user has not logged on to the WeChat account exceeds 24 hours, or, if the operating system of the terminal when a user logged on to a WeChat account last time is an Android system, and a duration in which the user has not used the WeChat account to send messages exceeds 7 days, the server detects whether there is a new message or a new friend application sent to the social application account or a friend in QQ friends or in friends of an address list of the user newly registers a WeChat account in a period in which the user has not logged on to the WeChat account or has not used the WeChat account to send messages.

If the server detects that there is a new message or a new friend application sent to the social application account or a friend in a chain of friends newly applies for a social networking application, the process proceeds to step 305.

If the server detects that there is no new message or new friend application sent to the social application account or no friend in a chain of friends newly applies for a social networking application, the process proceeds to step 306.

It should be noted that, step 306 may be performed directly without execution of step 304 and step 305, or step 306 may be performed first and then step 304 is performed; the embodiment of the present disclosure takes a sequence in line with general user habits as an example for description.
Step 305. Push a reminder message to a communication address bound to the social application account, where the reminder message carries a new message, a new friend application or a message indicating that a friend in a chain of friends newly applies for a social networking application.

When detecting that there is a new message or a new friend application sent to the social application account or a friend in a chain of friends newly applies for a social networking application, the server pushes a reminder message to a communication address bound to the social application account, where the communication address bound to the social application account may be a cell phone number or a mail address filled by a user in registration of the social application account.

For example, when detecting that there is a new message or a new friend application sent to the social application account or a friend in QQ friends or in friends of an address list of the user newly registers a WeChat account in a period in which the user has not logged on to the WeChat account or has not used the WeChat account to send messages, the server sends an SMS reminder message to the cell phone number filled by the user in registration of the WeChat account or a mail reminder message to the mail address, for reminding the user about receipt of the new message or new friend application or that the friend in QQ friends or in friends of an address list of the user newly registers a WeChat account.

Step 306. Detect whether a new message exists in a social information sharing platform of the social application account in the predetermined time period; where the new message includes review messages for the social application account and/or update messages of contacts of the social application account.

The server detects whether a new message exists in a social information sharing platform of the social application account in the predetermined time period. The social information sharing platform is a platform where all contacts in the social application account publish messages and communicate openly.

For example, when detecting that there is no new message or new friend application sent to the social application account or a friend in QQ friends or in friends of an address list of the user newly registers a WeChat account in a period in which the user has not logged on to the WeChat account or has not used the WeChat account to send messages, the server detects whether a social information sharing platform of the social application account has review messages for the social application account and/or update messages of contacts of the social application account in the period in which the user has not logged on to the WeChat account or has not used the WeChat account to send messages; where the new message includes various forms of review messages of
friends in the WeChat account of the user about messages published by the user and update messages newly published by the friends in the WeChat account; where the review messages include general review messages, praise (indicating agreement or concern) messages and the like; the update messages include status messages, image messages or the like newly published by the friends.

[0094] It should be noted that, step 306 may be performed after the detection result in step 304 is that there is a new message or a new friend application sent to the social application account or a friend in a chain of friends newly applies for a social networking application, or may be performed after the detection result in step 304 is that there is no new message or new friend application sent to the social application account or no friend in a chain of friends newly applies for a social networking application. The embodiment of the present disclosure takes that step 306 is performed after the detection result in step 304 is that there is no new message or new friend application sent to the social application account or no friend in a chain of friends newly applies for a social networking application as an example for description.

[0095] Step 307. Push a reminder message to the communication address bound to the social application account if a detection result is that the new message exists in the social information sharing platform of the social application account in the predetermined time period, where the reminder message carries the number of non-read new messages, nicknames of contacts corresponding to the new messages and contents of the new messages.

[0096] The server pushes a reminder message to the communication address bound to the social application account if a detection result is that the new message exists in the social information sharing platform of the social application account in the predetermined time period, where the reminder message carries the number of non-read new messages, nicknames of contacts corresponding to the new messages and contents of the new messages. As the new message includes review messages for the social application account and/or update messages of contacts of the social application account:

[0097] if the new message includes review messages for the social application account, the step includes the following sub-steps.

[0098] 1) Acquire at least one of the review messages for the social application account non-read in the predetermined time period, nicknames of contacts corresponding to the review messages for the social application account and contents of the review messages for the social application account.

[0099] If detecting that the social information sharing platform of the social application account has review messages for the social application account in the predetermined time period, the server acquires at least one of the number of review messages for the social application account non-
read in the predetermined time period, nicknames of contacts corresponding to the review messages for the social application account and contents of the review messages for the social application account.

[00100] For example, the server detects that, in a period in which a user has not logged on or has not sent messages, a circle of friends in a WeChat account of the user has various forms of review messages of friends in the WeChat account of the user about messages published by the user, including general review messages, praise (indicating agreement or concern) messages and the like, and the server acquires at least one of the number of the review messages, nicknames of friends publishing the review messages and specific contents of the review messages.

[00101] Generally, the server may acquire the number of all review messages and nicknames of friends publishing 3 latest review messages in a period in which the user has not logged on to a WeChat account or has not used the WeChat account to send messages.

[00102] 2) Send a reminder message to an SMS communication address or a mail communication address bound to the social application account, where the reminder message includes at least one of the number of review messages for the social application account non-read in the predetermined time period, the nicknames of contacts corresponding to the review messages for the social application account and the contents of the review messages for the social application account.

[00103] After acquiring at least one of the number of review messages for the social application account non-read in the predetermined time period, nicknames of contacts corresponding to the review messages for the social application account and contacts of the review messages for the social application account, the server sends a reminder message to an SMS communication address or a mail communication address bound to the social application account, where the reminder message includes at least one of the number of review messages for the social application account non-read in the predetermined time period, the nicknames of contacts corresponding to the review messages for the social application account and the contents of the review messages for the social application account; the communication address bound to the social application account may be a cell phone number or a mail address filled by a user in registration of the social application account.

[00104] For example, as a user is more concerned about whether there are other friends paying attention to him, the server, when detecting that a WeChat account of the user has various forms of review messages of friends in the WeChat account of the user about messages published by the user, may send an SMS reminder message to a cell phone number filled by the user in registration of the WeChat account or send a mail reminder message to a mail address, and carry at least one of the
number of the review messages, nicknames of friends publishing the review messages and specific contents of the review messages in the SMS reminder message or the mail reminder message.

Generally, the server may carry the number of all review messages and nicknames of friends publishing 3 latest review messages in a period in which the user has not logged on to a WeChat account or has not used the WeChat account to send messages.

If the new message includes update messages of contacts of the social application account, the number of non-read update messages is acquired, and the step includes the following sub-steps.

1) Detect whether the number of the update messages of contacts of the social application account exceeds a predetermined number.

If detecting that the social information sharing platform of the social application account has update messages of contacts of the social application account in the predetermined time period, the server detects whether the number of the update messages of contacts of the social application account exceeds a predetermined number; if it is detected that the number of the update messages does not exceed the predetermined number, the process proceeds to sub-step 2); if it is detected that the number of the update messages exceeds the predetermined number, the process proceeds to sub-step 4).

For example, if the server detects that, in a period in which a user has not logged on or has not sent messages, a circle of friends in a WeChat account of the user has status messages, image messages or the like newly published by friends in the WeChat account, the server detects whether the number of update messages of the friends in the WeChat account exceeds a predetermined number.

2) If it is detected that the number of the update messages of contacts of the social application account does not exceed the predetermined number, acquire at least one of the number of update messages of contacts of the social application account non-read in the predetermined time period, nicknames of contacts corresponding to the update messages of contacts of the social application account and contents of the update messages of contacts of the social application account.

If detecting that the number of the update messages of contacts of the social application account does not exceed the predetermined number, the server acquires at least one of the number of update messages of contacts of the social application account non-read in the predetermined time period, nicknames of contacts corresponding to the update messages of contacts of the social application account and contents of the update messages of contacts of the social application account.
For example, if the server detects that, in a period in which a user has not logged on or has not sent messages, the number of status messages or image messages newly published by friends included in a circle of friends in a WeChat account of the user does not exceed 10, the server acquires at least one of the number of the update messages, nicknames of friends publishing the update messages and specific contents of the update messages.

Generally, the server may acquire contents in 3 latest status messages or image messages newly published by friends and nicknames of the friends publishing the 3 status messages or image messages in a period in which a user has not logged on to a WeChat account or has not used the WeChat account to send messages.

3) Send a reminder message to an SMS communication address or a mail communication address bound to the social application account, where the reminder message includes at least one of the number of update messages of contacts of the social application account non-read in the predetermined time period, the nicknames of contacts corresponding to the update messages of contacts of the social application account and the contents of the update messages of contacts of the social application account.

The server sends a reminder message to an SMS communication address or a mail communication address bound to the social application account, where the reminder message includes at least one of the number of update messages of contacts of the social application account non-read in the predetermined time period, the nicknames of contacts corresponding to the update messages of contacts of the social application account and the contents of the update messages of contacts of the social application account; the communication address bound to the social application account may be a cell phone number or a mail address filled by a user in registration of the social application account.

For example, after acquiring at least one of the number of update messages of contacts of the social application account non-read in the predetermined time period, nicknames of contacts corresponding to the update messages of contacts of the social application account and contents of the update messages of contacts of the social application account, the server sends an SMS reminder message to a cell phone number or a mail address filled by a user in registration of a WeChat account or sends a mail reminder message to a mail address, and carries the number of the update messages, nicknames of friends publishing the review messages and specific contents of the review messages in the SMS reminder message or the mail reminder message.

Generally, the server may carry contents in 3 latest status messages or image messages newly published by friends and nicknames of the friends publishing the 3 status messages
or image messages in a period in which a user has not logged on to a WeChat account or has not used the WeChat account to send messages in the SMS reminder message or the mail reminder message.

4) If it is detected that the number of update messages of contacts of the social application account exceeds the predetermined number, send a reminder message to an SMS communication address or a mail communication address bound to the social application account, where the reminder message includes a numerical range of the number of update messages of contacts of the social application account non-read in the predetermined time period.

If detecting that the number of update messages of contacts of the social application account exceeds the predetermined number, the server sends a reminder message to an SMS communication address or a mail communication address bound to the social application account, where the reminder message includes a numerical range of the number of update messages of contacts of the social application account non-read in the predetermined time period.

For example, the server sends an SMS reminder message to a cell phone number or a mail address filled by a user in registration of a WeChat account or sends a mail reminder message to a mail address, and carries contents of "the number of status messages or image messages newly published by friends in the past 3 days exceeds 10" in the SMS reminder message or the mail reminder message.

It should be noted that, when the new message includes review messages for the social application account and updates messages of contacts of the social application account at the same time, the server may determine specific contents of sending a reminder message to an SMS communication address or a mail communication address bound to the social application account according to attention that a user pays to the review messages and the update messages, which is not limited in the embodiment of the present disclosure.

To sum up, the message pushing method in the embodiment of the present disclosure, by acquiring an operating system type corresponding to a social application account, detecting according to characteristics of different operating systems whether a duration in which the social application account is in a non-logged on state exceeds a first threshold or whether a duration in which the social application account is in a non-transmitting state exceeds a second threshold, detecting whether there is a new message or a new friend application sent to the social application account or a friend in a chain of friends newly applies for a social networking application in a predetermined time period if the duration in which the social application account is in a non-logged on state exceeds the first threshold or the duration in which the social application account is in a non-transmitting state exceeds the second threshold, detecting whether a new message exists in a social information sharing platform of the social application account in the predetermined time period if
there is no new message or new friend application sent to the social application account or no friend
in a chain of friends newly applies for a social networking application, and pushing a reminder
message to a communication address bound to the social application account according to the type of
the new message if the new message exists, so that the user can be attracted by the reminder message
upon receipt of the reminder message, thereby improving activity of the social application account,
solves the problem that the server may not send a reminder SMS or a reminder mail if there is no
new message or new friend application sent to the social application account, resulting in that the
reminder SMS or the reminder mail cannot be timely sent to a user who should be reminded; and
achieves the effect that the server may be triggered to send a reminder SMS or a reminder mail as
long as the new message exists in the social information sharing platform of the social application
account, to timely send the reminder SMS or the reminder mail to the user who should be reminded.

[00123] In a specific example, if the server detects that, for a social application account whose
account name is "Xin Yuan," the social application account has not been used for sending messages
over 7 days, and a circle of friends of the social application account has 6 review messages for a
photo status published in the social application account 8 days ago and 17 update messages of
contacts of the social application account, the server sends a reminder message to a mail address
filled in account registration of the social application account, where the reminder message includes
contents of 3 review messages for a photo status published in the social application account 8 days
ago and nicknames of friends publishing the 3 review messages, as well as messages reminding the
user that the number of the update messages of contacts of the social application account exceeds 10.
Please referring to FIG. 4, the right side of FIG. 4 shows contents of a mail reminder message sent by
a server.

[00124] Referring to FIG. 5, FIG. 5 is a structural block diagram of a message pushing
apparatus according to one embodiment of the present disclosure. The message pushing apparatus
may be implemented as all or a part of a server through software, hardware or a combination thereof,
and the message pushing apparatus includes:

[00125] a first detection module 510, for detecting whether inactivity of a social application
account in a predetermined time period exceeds a predetermined threshold;

[00126] a second detection module 520, for detecting whether a new message exists in a social
information sharing platform of the social application account in the predetermined time period if a
detection result of the first detection module 510 is that the inactivity exceeds the predetermined
threshold; and
a sending module 530, for pushing a reminder message to a communication address bound to the social application account if a detection result of the second detection module 520 is that the new message exists.

To sum up, the message pushing apparatus in the embodiment of the present disclosure, by detecting whether inactivity of a social application account in a predetermined time period exceeds a predetermined threshold, detecting whether a new message exists in a social information sharing platform of the social application account in the predetermined time period if the inactivity exceeds the predetermined threshold, and pushing a reminder message to a communication address bound to the social application account if the new message exists, to remind a user to use the social application account, thereby improving activity of the social application account, solves the problem that the server may not send a reminder SMS or a reminder mail if there is no new message or new friend application sent to the social application account, resulting in that the reminder SMS or the reminder mail cannot be timely sent to a user who should be reminded; and achieves the effect that the server may be triggered to send a reminder SMS or a reminder mail as long as the new message exists in the social information sharing platform of the social application account, to timely send the reminder SMS or the reminder mail to the user who should be reminded.

Referring to FIG. 6, FIG. 6 is a structural block diagram of a message pushing apparatus according to another embodiment of the present disclosure. The message pushing apparatus may be implemented as all or a part of a server through software, hardware or a combination thereof, and the message pushing apparatus includes:

- an acquisition module 610, for acquiring an operating system type corresponding to a social application account;
- a first detection module 620, for detecting whether inactivity of the social application account in a predetermined time period exceeds a predetermined threshold;
- specifically, the first detection module 620 including:
  - a first detection unit 621, or a second detection unit 622;
- where the first detection unit 621 is used for detecting whether a duration in which the social application account is in a non-logged on state exceeds a first threshold when the operating system type corresponding to the social application account acquired by the acquisition module 610 is a first system; and
- the second detection unit 622 is used for detecting whether a duration in which the social application account is in a non-transmitting state exceeds a second threshold when the operating system type corresponding to the social application account acquired by the acquisition module 610 is a second system;
a second detection module 630, for detecting whether a new message exists in a social information sharing platform of the social application account in the predetermined time period if a detection result of the first detection module 620 is that the inactivity exceeds the predetermined threshold; and

a sending module 640, for pushing a reminder message to a communication address bound to the social application account if a detection result of the second detection module 630 is that the new message exists.

To sum up, the message pushing apparatus in the embodiment of the present disclosure, by acquiring an operating system type corresponding to a social application account, detecting according to characteristics of different operating systems whether a duration in which the social application account is in a non-logged on state exceeds a first threshold or whether a duration in which the social application account is in a non-transmitting state exceeds a second threshold, detecting whether a new message exists in a social information sharing platform of the social application account in a predetermined time period if the duration in which the social application account is in a non-logged on state exceeds the first threshold or the duration in which the social application account is in a non-transmitting state exceeds the second threshold, and pushing a reminder message to a communication address bound to the social application account if the new message exists, to remind a user to use the social application account, thereby improving activity of the social application account, solves the problem that the server may not send a reminder SMS or a reminder mail if there is no new message or new friend application sent to the social application account, resulting in that the reminder SMS or the reminder mail cannot be timely sent to a user who should be reminded; and achieves the effect that the server may be triggered to send a reminder SMS or a reminder mail as long as the new message exists in the social information sharing platform of the social application account, to timely send the reminder SMS or the reminder mail to the user who should be reminded.

Referring to FIG. 7, FIG. 7 is a structural block diagram of a message pushing apparatus according to another embodiment of the present disclosure. The message pushing apparatus may be implemented as all or a part of a server through software, hardware or a combination thereof, and the message pushing apparatus includes:

a third detection module 710, for detecting whether a social application account corresponds to a specified area;

an acquisition module 720, for acquiring an operating system type corresponding to the social application account;
a first detection module 730, for detecting whether inactivity of the social application account in a predetermined time period exceeds a predetermined threshold if a detection result of the third detection module 710 is that the social application account corresponds to the specified area;

specifically, the first detection module 730 including:

a first detection unit 731, or a second detection unit 732;

where the first detection unit 731 is used for detecting whether a duration in which the social application account is in a non-logged on state exceeds a first threshold when the operating system type corresponding to the social application account acquired by the acquisition module 720 is a first system; and

the second detection unit 732 is used for detecting whether a duration in which the social application account is in a non-transmitting state exceeds a second threshold when the operating system type corresponding to the social application account acquired by the acquisition module 720 is a second system;

where an average background running duration of a social networking application in the second system is greater than that in the first system;

a fifth detection module 740, for detecting whether there is a new message or a new friend application sent to the social application account or a friend in a chain of friends newly applies for a social networking application in the predetermined time period if a detection result of the first detection module 730 is that the inactivity exceeds the predetermined threshold;

a sending module 750, for pushing a reminder message to a communication address bound to the social application account;

specifically, the sending module 750 including:

a first sending unit 751, a second sending unit 752 and/or a third sending unit 753;

where the third sending unit 753 is used for pushing a reminder message to a communication address bound to the social application account if a detection result of the fifth detection module 740 is that there is a new message or a new friend application sent to the social application account or a friend in a chain of friends newly applies for a social networking application;

a second detection module 760, for detecting whether a new message exists in a social information sharing platform of the social application account in the predetermined time period if the detection result of the fifth detection module 740 is that there is no new message or new friend application sent to the social application account or no friend in a chain of friends newly applies for a social networking application; where the new message includes review messages for the social application account and/or update messages of contacts of the social application account;
a review acquisition module 770, for acquiring at least one of the number of review messages for the social application account non-read in the predetermined time period, nicknames of contacts corresponding to the review messages for the social application account and contents of the review messages for the social application account if a detection result of the second detection module 760 is that the new message exists in the social information sharing platform of the social application account and the new message includes review messages for the social application account;  

the first sending unit 751, for sending a reminder message to an SMS communication address or a mail communication address bound to the social application account, where the reminder message includes at least one of the number of review messages for the social application account non-read in the predetermined time period, the nicknames of contacts corresponding to the review messages for the social application account and the contents of the review messages for the social application account;  

a fourth detection module 780, for detecting whether the number of the update messages of contacts of the social application account exceeds a predetermined number if the detection result of the second detection module 760 is that the new message exists in the social information sharing platform of the social application account and the new message includes update messages of contacts of the social application account; and  

an update acquisition module 790, for acquiring at least one of the number of update messages of contacts of the social application account non-read in the predetermined time period, nicknames of contacts corresponding to the update messages of contacts of the social application account and contents of the update messages of contacts of the social application account if a detection result of the fourth detection module 780 is that the number of the update messages of contacts of the social application account exceeds the predetermined number.

The second sending unit 752 includes:

a first sub-unit 752a and a second sub-unit 752b;  

where the first sub-unit 752a is used for sending a reminder message to an SMS communication address or a mail communication address bound to the social application account, where the reminder message includes at least one of the number of update messages of contacts of the social application account non-read in the predetermined time period, the nicknames of contacts corresponding to the update messages of contacts of the social application account and the contents of the update messages of contacts of the social application account; and  

the second sub-unit 752b is used for sending a reminder message to an SMS communication address or a mail communication address bound to the social application account,
where the reminder message includes a numerical range of the predetermined number of the update messages of contacts of the social application account.

[00162] To sum up, the message pushing apparatus in the embodiment of the present disclosure, by acquiring an operating system type corresponding to a social application account, detecting according to characteristics of different operating systems whether a duration in which the social application account is in a non-logged on state exceeds a first threshold or whether a duration in which the social application account is in a non-transmitting state exceeds a second threshold, detecting whether there is a new message or a new friend application sent to the social application account or a friend in a chain of friends newly applies for a social networking application in a predetermined time period if the duration in which the social application account is in a non-logged on state exceeds the first threshold or the duration in which the social application account is in a non-transmitting state exceeds the second threshold, detecting whether a new message exists in a social information sharing platform of the social application account in the predetermined time period if a detection result is that there is no new message or new friend application sent to the social application account or no friend in a chain of friends newly applies for a social networking application, and pushing a reminder message to a communication address bound to the social application account according to the type of the new message if the new message exists, so that the user can be attracted by the reminder message upon receipt of the reminder message, thereby improving activity of the social application account, solves the problem that the server may not send a reminder SMS or a reminder mail if there is no new message or new friend application sent to the social application account, resulting in that the reminder SMS or the reminder mail cannot be timely sent to a user who should be reminded; and achieves the effect that the server may be triggered to send a reminder SMS or a reminder mail as long as the new message exists in the social information sharing platform of the social application account, to timely send the reminder SMS or the reminder mail to the user who should be reminded.

[00163] It should be noted that, when the message pushing apparatus in the embodiments pushes a message, only division of the function modules is used for illustration, and in actual applications, the above functions may be assigned to and accomplished by different function modules according to requirements, that is, the internal structure of the electronic device is divided into different function modules, to accomplish all or a part of the functions described above. In addition, the message pushing apparatus in the above embodiments and the embodiments of the message pushing methods belong to the same concept, and reference should be made to the method embodiments for details of the specific implementation process thereof, which is not repeated herein.
Referring to FIG. 8, FIG. 8 is a device composition diagram of a server according to an embodiment of the present disclosure. The server is used for implementing authentication methods in the above embodiments.

The server 800 includes a central processing unit (CPU) 801, a system memory 804 including a random access memory (RAM) 802 and a read only memory (ROM) 803, and a system bus 805 connecting the system memory 804 and the CPU 801. The server 800 further includes a basic input/output system (I/O system) 806 or transmitting information between respective devices in a computer, and a mass storage device 807 for storing an operating system 813, an application 814 and other program modules 815.

The I/O system 806 includes a display 808 for displaying information and an input device 809 such as a mouse or a keyboard for a user to input information. The display 808 and the input device 809 are both connected to the CPU 801 through an input-output controller 810 connected to the system bus 805. The basic I/O system 806 may also include the input-output controller 810 for receiving and processing input from many other devices such as a keyboard, a mouse and an electronic stylus. Similarly, the input-output controller 810 also provides output to a display screen, a printer or other types of output devices.

The mass storage device 807 is connected to the CPU 801 through a mass storage controller (not shown) connected to the system bus 805. The mass storage device 807 and a computer readable medium associated therewith provide nonvolatile storage for the server 800. In other words, the mass storage device 807 may include a computer readable medium (not shown) such as a hard disk or a CD-ROM drive.

Without loss of generality, the computer readable medium may include a computer storage medium and a communication medium. The computer storage medium includes volatile, nonvolatile, removable and non-removable media implemented by any method or technology for storing information such as computer readable instructions, data structures, program modules or other data. The computer storage medium includes a RAM, a ROM, an EPROM, an EEPROM, a flash memory or other solid-state storage technologies, a CD-ROM, a DVD or other optical storages, a magnetic tape cassette, a magnetic tape, a magnetic disk storage or other magnetic storage devices. Certainly, persons skilled in the art may know that the computer storage medium is not limited to the above. The system memory 804 and the mass storage device 807 may be collectively referred to as a memory.

According to various embodiments of the present disclosure, the server 800 may also operate by being connected to a remote computer on a network by using Internet or other networks. That is, the server 800 may be connected to a network 812 by using a network interface unit 811.
connected to the system bus 805, or, it may also connected to other types of networks or remote
computer systems (not shown) by using the network interface unit 811.

The memory also includes one or more modules, where the one or more modules are
stored in the memory, and are configured to be executed by one or more CPUs 801, and the one or
more modules have the following functions:

- detecting whether inactivity of a social application account in a predetermined time
  period exceeds a predetermined threshold;
- detecting whether a new message exists in a social information sharing platform of the
  social application account in the predetermined time period if a detection result is that the inactivity
  exceeds the predetermined threshold; and
- pushing a reminder message to a communication address bound to the social
  application account if a detection result is that the new message exists.

The one or more modules further have the following functions:

- detecting whether a duration in which the social application account is in a non-
  logged on state exceeds a first threshold, and/or whether a duration in which the social application
  account is in a non-transmitting state exceeds a second threshold.
- detecting whether a duration in which the social application account is in a non-
  logged on state exceeds a first threshold when the operating system type corresponding to the social
  application account is a first system; and
- detecting whether a duration in which the social application account is in a non-
  transmitting state exceeds a second threshold when the operating system type corresponding to the
  social application account is a second system;
- where an average background running duration of a social networking application in
  the second system is greater than that in the first system.
- If the new message includes review messages for the social application account, the
  one or more modules further have the following functions:
- sending a reminder message to an SMS communication address or a mail
  communication address bound to the social application account, where the reminder message
  includes at least one of the following contents:
- the number of review messages for the social application account non-read in the
  predetermined time period;
- nicknames of contacts corresponding to the review messages for the social application
  account; and
contents of the review messages for the social application account.

If the new message includes update messages of contacts of the social application account, the one or more modules further have the following functions:

- sending a reminder message to an SMS communication address or a mail communication address bound to the social application account, where the reminder message includes at least one of the following contents:
  - the number of non-read update messages of contacts of the social application account or a numerical range of the number of non-read update messages;
  - nicknames of contacts corresponding to the update messages of contacts of the social application account; and

- contents of the update messages of contacts of the social application account.

The one or more modules further have the following functions:

- detecting whether the social application account corresponds to a specified area; and
- performing the step of detecting whether inactivity of the social application account in the predetermined time period exceeds a predetermined threshold if a detection result is that the social application account corresponds to the specified area.

To sum up, the server in the embodiment of the present disclosure, by acquiring an operating system type corresponding to a social application account, detecting according to characteristics of different operating systems whether a duration in which the social application account is in a non-logged on state exceeds a first threshold or whether a duration in which the social application account is in a non-transmitting state exceeds a second threshold, detecting whether there is a new message or a new friend application sent to the social application account or a friend in a chain of friends newly applies for a social networking application in a predetermined time period if the duration in which the social application account is in a non-logged on state exceeds the first threshold or the duration in which the social application account is in a non-transmitting state exceeds the second threshold, detecting whether a new message exists in a social information sharing platform of the social application account in the predetermined time period if a detection result is that there is no new message or new friend application sent to the social application account or no friend in a chain of friends newly applies for a social networking application, and pushing a reminder message to a communication address bound to the social application account according to the type of the new message if the new message exists, so that the user can be attracted by the reminder message upon receipt of the reminder message, thereby improving activity of the social application account, solves the problem that the server may not send a reminder SMS or a reminder mail if there is no new message or new friend application sent to the social application account, resulting in that the
reminder SMS or the reminder mail cannot be timely sent to a user who should be reminded; and achieves the effect that the server may be triggered to send a reminder SMS or a reminder mail as long as the new message exists in the social information sharing platform of the social application account, to timely send the reminder SMS or the reminder mail to the user who should be reminded.

Fig. 9 is a diagram of a client-server environment 900 for pushing social networking messages, in accordance with some embodiments of the present application. While certain specific features are illustrated, those skilled in the art will appreciate from the present disclosure that various other features have not been illustrated for the sake of brevity and so as not to obscure more pertinent aspects of the implementations disclosed herein. To that end, the client-server environment 900 includes one or more mobile phone operators 902, one or more internet service providers 904, and a communications network 906.

The mobile phone operator 902 (e.g., wireless carrier), and the Internet service provider 904 are capable of being connected to the communication network 906 in order to exchange information with one another and/or other devices and systems. Additionally, the mobile phone operator 902 and the Internet service provider 904 are operable to connect client devices to the communication network 906 as well. For example, a smart phone 908 is operable with the network of the mobile phone operator 902, which includes for example, a base station 903. Similarly, for example, a laptop computer 910 (or tablet, desktop, smart television, workstation or the like) is connectable to the network provided by an Internet service provider 904, which is ultimately connectable to the communication network 906.

The communication network 906 may be any combination of wired and wireless local area network (LAN) and/or wide area network (WAN), such as an intranet, an extranet, including a portion of the Internet. It is sufficient that the communication network 906 provides communication capability between client devices (e.g., smart phones 908 and personal computers 910) and servers. In some implementations, the communication network 906 uses the HyperText Transport Protocol (HTTP) to transport information using the Transmission Control Protocol/Internet Protocol (TCP/IP). HTTP permits a client device to access various resources available via the communication network 906. However, the various implementations described herein are not limited to the use of any particular protocol.

In some implementations, the client-server environment 900 further includes a social networking activity notification server system 911. Within the social networking activity notification server system 911, there is a server computer 912 (e.g., a network server such as a web server) for sending and processing data sent to one or more client devices 908/910 (e.g., a notification about activity at social networking user account). In some implementations, the social networking activity
notification server system 911 stores (e.g., in a database 914) and maintains social networking information about one or more user accounts (e.g., personal traits about users associated with user accounts, frequency of usage for respective user accounts and activity associated with user accounts).

[00198] In some implementations, the social networking activity notification server system 911 sends and receives various communications to and from a client device 908/910. In some embodiments, these communications or the information in these communications are stored and retrieved from database 914. In some embodiments, the social networking activity notification server system 911 sends or receives communications of data and/or status from client device 908/910 (e.g., sending a notification, receiving acknowledgment of receipt of a notification, or receiving user-setting changes related to notifications).

[00199] Those skilled in the art will appreciate from the present disclosure that any number of such devices and/or systems may be provided in a client-server environment, and particular devices may be altogether absent. In other words, the client-server environment 900 is merely an example provided to discuss more pertinent features of the present disclosure. Additional server systems, such as domain name servers and client distribution networks may be present in the client-server environment 900, but have been omitted for ease of explanation.

[00200] FIG. 10 is a diagram of an example implementation of the social networking activity notification server 912, in accordance with some implementations of the present application. While certain specific features are illustrated, those skilled in the art will appreciate from the present disclosure that various other features have not been illustrated for the sake of brevity and so as not to obscure more pertinent aspects of the implementations disclosed herein.

[00201] Server 912 includes one or more processing units (CPUs) 1004, one or more network or other communications interfaces 1008, an optional user interface 1001 (optionally comprising elements such as a keyboard 1001-1 or display 1001-2), memory 1006, and one or more communication buses 1005 for interconnecting these and various other components. The communication buses 1005 may include circuitry (sometimes called a chipset) that interconnects and controls communications between system components. Memory 1006 includes high-speed random access memory, such as DRAM, SRAM, DDR RAM or other random access solid state memory devices; and may include non-volatile memory, such as one or more magnetic disk storage devices, optical disk storage devices, flash memory devices, or other non-volatile solid state storage devices. Memory 1006 may optionally include one or more storage devices remotely located from the CPU(s) 1004. In some embodiments, memory 1006, including the non-volatile and volatile memory device(s) within memory 1006, comprises a non-transitory computer readable storage medium.
In some implementations, memory 1006 or the non-transitory computer readable storage medium of memory 1006 stores the following programs, modules and data structures, or a subset thereof including an operating system 1016, a network communication module 1018, and a notification management server module 1031.

The operating system 1016 includes procedures for handling various basic system services and for performing hardware dependent tasks.

The network communication module 1018 facilitates communication with other devices (e.g., client devices 908/910), via the one or more communication network interfaces 1008 (wired or wireless) and one or more communication networks, such as the internet, other wide area networks, local area networks, metropolitan area networks, and so on.

In some implementations, the notification management server module 1031 includes an activity detection sub-module 1002 for detecting the occurrence of one or more activities associated with a social networking user account, and in some embodiments, detecting the occurrence of one or more activities of a particular type (e.g., posting a photo, commenting on something or sharing a link), and in some embodiments, detecting the occurrence of one or more activities relating to a particular subject (e.g., a particular user, a particular topic, or a particular genre). To this end, the activity detection sub-module 1002 includes a set of instructions 1002-1 and, optionally, metadata 1002-2.

In some implementations, the notification management server module 1031 includes a time period detection sub-module 1021 having a set of instructions 1021-1 (e.g., to detect the passage of time since a respective user has logged into his social networking account, or detect the occurrence of a particular time of day or time of week) and, optionally, metadata 1021-2, as well as a notification generation sub-module 1003 having a set of instructions 1003-1 (e.g., for generating a notification to push to a mobile device associated with a social networking user account, deciding what information to include in the notification or when to send the notification) and optionally metadata 1003-2. In some embodiments, the notification management server module 1031 also includes other modules to perform the functions of the server described with respect to FIGS. 12A-12B.

FIG. 11 is a block diagram of a realization apparatus 1100 of pushing messages, in accordance with some embodiments.

As is shown in FIG. 11, this device includes: a communications unit 1104, and a processing unit 1106 comprising an activity detection unit 1101, time period detection unit 1102, and notification generation unit 1103, among which:
Activity detection unit 1101: configured to detect the occurrence of one or more activities associated with a social networking user account, optionally detect the occurrence of one or more activities of a particular type and optionally detect the occurrence of one or more activities relating to a particular subject;

Time period detection unit 1102: configured to detect the passage of time since a respective user has logged into his social networking account, or detect the occurrence of a particular time of day or time of week;

Notification generation unit 1103: configured to generate a notification to push to a mobile device associated with a social networking user account, and optionally decide what information to include in the notification or when to send the notification; and

Communications unit 1104 is configured to send and receive communications (e.g., server 912 to and from client device 908/910).

In some embodiments, the processing unit also includes other sub-units to perform the functions of the server described with respect to FIGS. 12A-12B.

It is acceptable to integrate the device shown in Figure 11 into hardware entities of a variety of networks. For example, the realization device for pushing messages is allowed to be integrated into: server systems including mainframes, PC computers, portable electronic devices, commercial/enterprise servers etc.

FIGS. 12A-12B are a flow chart of a method 1200 of pushing messages, performed at a social networking server having one or more processors and memory for storing programs to be executed by the one or more processors, in accordance with some embodiments. The method includes detecting (1202) whether there is any activity at a first user account of a group of user accounts associated with a social networking application for a predefined time period. For example, the method includes detecting if a first user account has received any social networking notifications, posts, photos, videos or other activities over the last 48 hours. In some embodiments, the predefined time period is (1204) based on passage of a predetermined length of time since the first user previously accessed the first user account (e.g., 24 hours since the first user opened the social networking application on his portable electronic device). In some embodiments, the predefined time period is based on passage of a predetermined length of time since the first user performed any active or passive activity on the social networking application (e.g., three days since the first user posted something, or two days since the first user viewed another user's profile). In some embodiments, the predefined time period is (1206) based on occurrence of a time-based event. In some embodiments, the time-based event is a particular time of day (e.g., 6pm), a day of the week, a time of day and day of the week or a holiday. In some embodiments, the predefined time period is
base on occurrence of a window of time. For example, the predefined time period is from
Friday at 6pm to Monday at 8am, to avoid disturbing the first user during normal work hours, or
from 12:01am on the first user's birthday until 11:59pm on that date to ensure he receives all his
birthday greetings. In some embodiments, detecting whether there is any activity is performed
periodically (e.g., in small time increments) during the predefined time period or up to the predefined
time period (e.g., detecting stops at a fixed point in time).

[00216] The method includes detecting (1210) if there is a predefined number of activities at
the group of user accounts excluding the first user account during the predefined time period. For
example, the method includes detecting that in the last 24 hours, at least five activities involving the
first user's social network of friends have occurred. In some embodiments, the predefined number of
activities are any activities performed by user accounts of the group of user accounts, other than (i.e.,
excluding) the first user account (e.g., without necessarily having a direct association with the first
user account). In some embodiments, the predefined number of activities are activities performed by
user accounts of the group of user accounts, other than the first user account, but having an
association with the first user account (e.g., the first user is tagged in a photo posted by a second user
on the second user's account). In some embodiments, detecting if there is a predefined number of
activities includes observing (1212) that a new photograph (or for example, link, message, news
article, video, GIF, image, comment or reply) among the group of user accounts has been posted to
the social networking application. In some embodiments, detecting if there is a predefined number
of activities includes observing (1214) that one or more new notifications relate to a particular
subject (e.g., to a topic such as sports, to activities such as weekend plans, to a particular person such
as a best friend, to a genre such as comedy, or to a social networking category such as photos). In
some embodiments, detecting if there is a predefined number of activities includes observing (1216)
that a second user account, distinct from the first user account, has sent one or more communications
to the first user account through the social networking application (e.g., the first user's boy friend has
sent her at least three unread electronic messages since 8am, or a second user has tagged the first user
in a post).

[00217] In some embodiments, the predefined time period or the predefined number of
activities is (1218) user-defined. For example, the first user decides to have the occurrence of photos
posted by his high school friends detected during the week of his high school reunion. In some
embodiments, the predefined time period or the predefined number of activities is (1220) system-
generated. In some embodiments, this system-generation is based on one or more traits of the first
user known to the social networking application (e.g., age, frequency of usage of the application,
number of friends, frequency of activity among the group of user accounts, employment status,
relationship status or frequency of logging into the application from a smart phone or portable electronic device).

[00218] The method includes, in accordance with a determination (1222) that there is no activity at the first user account for the predefined time period and there is at least the predefined number of activities at the group of user accounts excluding the first user account during the predefined time period, sending (1224) a notification to the first user account, the notification including information of the predefined number of activities at the group of user accounts excluding the first user account. For example, the notification includes information about the time of occurrence of the one or more activities, the user account names of users associated with the one or more activities or at least a portion of the content of the activities (e.g., a subset of text, or a thumbnail of a posted photo), and the number of activities that have occurred over the predetermined period of time. In some embodiments, the notification includes (1226) one or more of textual, graphical, auditory or video information. In some embodiments, the notification is user or system defined to alert the user log into or access the application during a predefined time of day (e.g., the notification is only sent on weekends, or after 6pm on a weekday).

[00219] While particular embodiments are described above, it will be understood it is not intended to limit the disclosure to these particular embodiments. On the contrary, the disclosure includes alternatives, modifications and equivalents that are within the spirit and scope of the appended claims. Numerous specific details are set forth in order to provide a thorough understanding of the subject matter presented herein. But it will be apparent to one of ordinary skill in the art that the subject matter may be practiced without these specific details. In other instances, well-known methods, procedures, components, and circuits have not been described in detail so as not to unnecessarily obscure aspects of the embodiments.

[00220] The terminology used in the description of the disclosure herein is for the purpose of describing particular embodiments only and is not intended to be limiting of the disclosure. As used in the description of the disclosure and the appended claims, the singular forms "a," "an," and "the" are intended to include the plural forms as well, unless the context clearly indicates otherwise. It will also be understood that the term "and/or" as used herein refers to and encompasses any and all possible combinations of one or more of the associated listed items. It will be further understood that the terms "includes," "including," "comprises," and/or "comprising," when used in this specification, specify the presence of stated features, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, operations, elements, components, and/or groups thereof.
As used herein, the term "if may be construed to mean "when" or "upon" or "in response to determining" or "in accordance with a determination" or "in response to detecting," that a stated condition precedent is true, depending on the context. Similarly, the phrase "if it is determined [that a stated condition precedent is true]" or "if [a stated condition precedent is true]" or "when [a stated condition precedent is true]" may be construed to mean "upon determining" or "in response to determining" or "in accordance with a determination" or "upon detecting" or "in response to detecting" that the stated condition precedent is true, depending on the context.

Although some of the various drawings illustrate a number of logical stages in a particular order, stages that are not order dependent may be reordered and other stages may be combined or broken out. While some reordering or other groupings are specifically mentioned, others will be obvious to those of ordinary skill in the art and so do not present an exhaustive list of alternatives. Moreover, it should be recognized that the stages could be implemented in hardware, firmware, software or any combination thereof.

The foregoing description, for purpose of explanation, has been described with reference to specific embodiments. However, the illustrative discussions above are not intended to be exhaustive or to limit the disclosure to the precise forms disclosed. Many modifications and variations are possible in view of the above teachings. The embodiments were chosen and described in order to best explain the principles of the disclosure and its practical applications, to thereby enable others skilled in the art to best utilize the disclosure and various embodiments with various modifications as are suited to the particular use contemplated.
Claims

1. A method performed at a social networking server having one or more processors and memory for storing programs to be executed by the one or more processors, the method comprising:
   - detecting whether there is any activity at a first user account of a group of user accounts associated with a social networking application for a predefined time period;
   - detecting whether there is a predefined number of activities at the group of user accounts excluding the first user account during the predefined time period; and
   - in accordance with a determination that there is no activity at the first user account for the predefined time period and there is at least the predefined number of activities at the group of user accounts excluding the first user account during the predefined time period:
     - sending a notification to the first user account, the notification including information of the predefined number of activities at the group of user accounts excluding the first user account.

2. The method of claim 1, wherein the predefined time period is based on passage of a predetermined length of time since the first user previously accessed the first user account.

3. The method of claim 1, wherein the predefined time period is based on occurrence of a time-based event.

4. The method of claim 1, wherein the predefined time period is based on occurrence of a window of time.

5. The method of any of claims 1-4, wherein detecting if there is a predefined number of activities comprises observing that a new photograph among the group of user accounts has been posted to the social networking application.

6. The method of any of claims 1-4, wherein detecting if there is a predefined number of activities comprises observing that one or more new notifications relate to a particular subject.

7. The method of any of claims 1-4, wherein detecting if there is a predefined number of activities comprises observing that a second user account, distinct from the first user account, has sent a communication to the first user account through the social networking application.

8. The method of any of claims 1-7, wherein the predefined time period or the predefined number of activities is user-defined.

9. The method of any of claims 1-7, wherein the predefined time period or the predefined number of activities is system-generated.

10. The method of any of claims 1-9, wherein the notification includes one or more of textual, graphical, auditory or video information.

11. A social networking server, comprising:
one or more processors;
memory having instructions stored thereon, the instructions, when executed by the one or more processors, cause the processors to perform operations including:
detecting whether there is any activity at a first user account of a group of user accounts associated with a social networking application for a predefined time period;
detecting whether there is a predefined number of activities at the group of user accounts excluding the first user account during the predefined time period; and
in accordance with a determination that there is no activity at the first user account for the predefined time period and there is at least the predefined number of activities at the group of user accounts excluding the first user account during the predefined time period:
sending a notification to the first user account, the notification including information of the predefined number of activities at the group of user accounts excluding the first user account.
12. The server of claim 11, wherein the predefined time period is based on passage of a predetermined length of time since the first user previously accessed the first user account.
13. The server of claim 11, wherein the predefined time period is based on occurrence of a time-based event.
14. The server of claim 11, wherein the predefined time period is based on occurrence of a window of time.
15. The server of any of claims 11-14, wherein detecting if there is a predefined number of activities comprises observing that a new photograph among the group of user accounts has been posted to the social networking application.
16. The server of any of claims 11-14, wherein detecting if there is a predefined number of activities comprises observing that one or more new notifications relate to a particular subject.
17. The server of any of claims 11-14, wherein detecting if there is a predefined number of activities comprises observing that a second user account, distinct from the first user account, has sent a communication to the first user account through the social networking application.
18. The server of any of claims 11-17, wherein the predefined time period or the predefined number of activities is user-defined.
19. The server of any of claims 11-17, wherein the predefined time period or the predefined number of activities is system-generated.
20. The server of any of claims 11-19, wherein the notification includes one or more of textual, graphical, auditory or video information.
21. A non-transitory computer readable storage medium storing one or more programs, the one or more programs comprising instructions, which when executed by a social networking server, cause the server to:

   detecting whether there is any activity at a first user account of a group of user accounts associated with a social networking application for a predefined time period;

   detecting whether there is a predefined number of activities at the group of user accounts excluding the first user account during the predefined time period; and

   in accordance with a determination that there is no activity at the first user account for the predefined time period and there is at least the predefined number of activities at the group of user accounts excluding the first user account during the predefined time period:

   sending a notification to the first user account, the notification including information of the predefined number of activities at the group of user accounts excluding the first user account.

22. The non-transitory computer readable storage medium of claim 21, wherein the predefined time period is based on passage of a predetermined length of time since the first user previously accessed the first user account.

23. The non-transitory computer readable storage medium of claim 21, wherein the predefined time period is based on occurrence of a time-based event.

24. The non-transitory computer readable storage medium of claim 21, wherein the predefined time period is based on occurrence of a window of time.

25. The non-transitory computer readable storage medium of any of claims 21-24, wherein detecting if there is a predefined number of activities comprises observing that a new photograph among the group of user accounts has been posted to the social networking application.

26. The non-transitory computer readable storage medium of any of claims 21-24, wherein detecting if there is a predefined number of activities comprises observing that one or more new notifications relate to a particular subject.

27. The non-transitory computer readable storage medium of any of claims 21-24, wherein detecting if there is a predefined number of activities comprises observing that a second user account, distinct from the first user account, has sent a communication to the first user account through the social networking application.

28. The non-transitory computer readable storage medium of any of claims 21-27, wherein the predefined time period or the predefined number of activities is user-defined.

29. The non-transitory computer readable storage medium of any of claims 21-27, wherein the predefined time period or the predefined number of activities is system-generated.
30. The non-transitory computer readable storage medium of any of claims 21-29, wherein the notification includes one or more of textual, graphical, auditory or video information.
Detect whether inactivity of a social application account in a predetermined time period exceeds a predetermined threshold

Detect whether a new message exists in a social information sharing platform of the social application account in the predetermined time period if a detection result is that the inactivity exceeds the predetermined threshold

Push a reminder message to a communication address bound to the social application account if a detection result is that the new message exists

FIG. 1
Acquire an operating system type corresponding to a social application account

Detect according to the acquired operating system type whether a duration in which the social application account is in a non-logged on state exceeds a first threshold, or whether a duration in which the social application account is in a non-transmitting state exceeds a second threshold

Detect whether a new message exists in a social information sharing platform of the social application account in the predetermined time period if a detection result is that the duration exceeds the predetermined threshold

Push a reminder message to a communication address bound to the social application account if a detection result is that the new message exists

FIG. 2
Detect whether a social application account corresponds to a specified area

Acquire an operating system type corresponding to the social application account

Detect according to the acquired operating system type whether a duration in which the social application account is in a non-logged on state exceeds a first threshold, or whether a duration in which the social application account is in a non-transmitting state exceeds a second threshold

Detect whether there is a new message or a new friend application sent to the social application account or a friend in a chain of friends newly applies for a social networking application in the predetermined time period

Yes

Push a reminder message to a communication address bound to the social application account, where the reminder message carries a new message, a new friend application or a message indicating that a friend in a chain of friends newly applies for a social networking application

No

Detect whether a new message exists in a social information sharing platform of the social application account in the predetermined time period; where the new message includes review messages for the social application account and/or update messages of contacts of the social application account

Push a reminder message to the communication address bound to the social application account if a detection result is that the new message exists in the social information sharing platform of the social application account in the predetermined time period, where the reminder message carries the number of non-read new messages, nicknames of contacts corresponding to the new messages and contents of the new messages

FIG. 3
New message reminder for a WeChat account

Xin Yuan dears:
You haven't communicated with dear friends for 8 days. The number of status messages or image messages newly published by friends in your circle of friends in the past 3 days exceeds 10.

Xin Yuan:
A new car is on the road.
8 days ago Beijing Delete

Zhuzhu: Oh, good
Caidong: When was the new car bought?
Mirao: Eh, find a time to drive it out, hah

FIG. 4
FIG. 5

First detection module
Second detection module
Sending module

FIG. 6

Acquisition module
First detection module 620
First detection unit 621
Second detection unit 622
Second detection module 630
Sending module 640
FIG. 7

Third detection module

Acquisition module

First detection module 730

First detection unit 731

Second detection unit 732

Fifth detection module 740

Second detection module 760

Review acquisition module 780

Fourth detection module 790

Sending module 750

Third sending unit 753

First sending unit 751

Second sending unit 752

Second sub-unit 752a

First sub-unit 752b
FIG. 8
FIG. 11
Detect whether there is any activity at a first user account of a group of user accounts associated with a social networking application for a predefined time period.

The predefined time period is based on passage of a predetermined length of time since the first user previously accessed the first user account.

The predefined time period is based on occurrence of a time-based event.

The predefined time period is based on occurrence of a window of time.

Detect if there is a predefined number of activities at the group of user accounts excluding the first user account during the predefined time period.

Observe that a new photograph among the group of user accounts has been posted to the social networking application.

Observe that one or more new notifications relate to a particular subject.

Observe that a second user account, distinct from the first user account, has sent a communication to the first user account through the social networking application.

The predefined time period or the predefined number of activities is user-defined.

The predefined time period or the predefined number of activities is system-generated.

FIG. 12A
In accordance with a determination that there is no activity at the first user account for the predefined time period and there is at least the predefined number of activities at the group of user accounts excluding the first user account during the predefined time period:

Send a notification to the first user account, the notification including information of the predefined number of activities at the group of user accounts excluding the first user account

The notification includes one or more of textual, graphical, auditory or video information

FIG. 12B
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

H04L12/58 (2006.01) i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CPRSABS, CNKI, CNTXT, DWPI, VEN: sns, social, network, IM, instant, message, Wechat, read, new message, user account, on-line, off-line, client, server

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
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<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<td>CN 103259714 A (SHENZHEN SINFOR ELECTRONIC TECHNOLOGY CO.) 21 August 2013 (2013-08-21) description, paragraphs [0001], [0041]-[0047]</td>
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<td>A CN 103220211 A (GUANGDONG OPPO MOBILE COMMUNICATION CO., LTD.) 24 July 2013 (2013-07-24) the whole document</td>
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* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search 25 November 2014

Date of mailing of the international search report 17 December 2014

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Form PCT/ISA/210 (second sheet) (July 2009)
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