

A METHOD AND APPARATUS FOR DYNAMIC SESSION PLACEHOLDER FOR MESSAGE COLLECTION USER INTERFACE

TECHNICAL FIELD

[0001] The present disclosure relates to a user interface for a messaging application and more particularly for method and apparatus for a dynamic session placeholder for a message collection user interface.

BACKGROUND

[0002] Currently user interfaces, particularly graphical user interfaces (GUI) for displaying and accessing messages such as various types of data and voice messages communicated between a first communications device and one or more other devices are of a "linear" nature. One common manner of presenting the messages to a user of one of the devices comprises a message collection application having a GUI which contains entries that correspond to messages on one-by-one basis. The messages are often presented in accordance with a chronological order of the message such as time sent or received. Often this linear and singular presentation format causes the message collection GUI to be overstuffed with single messages.

[0003] The GUI makes it difficult for the user to find a particular message, reply to a particular message in a "thread" (i.e. common subject) having a context of all the previous messages, or track the "thread history", because different messages of the same "thread" can be spread throughout the message collection GUI and can be separated by other messages from different "threads". Commonly available message collection GUI's for communications devices include various email and unified message applications such as Microsoft Outlook®, Lotus Notes® and others such as Blackberry message collection for wireless communication devices.

[0004] In view of the foregoing shortcomings in the art, a solution to one or more of these needs is therefore desired.

SUMMARY

[0005] A method and apparatus for representing a conversation of related messages is described. In a message collection user interface for displaying messages sent and received by a communications device, a dynamic session placeholder is used for a respective conversation of related messages. The message collection user interface is displayed including any dynamic session placeholders in the list of messages. As messages from the conversation are occasioned, the dynamic session placeholder is updated. When the message collection is displayed, it is displayed in accordance with the updated session placeholder.

[0006] In accordance with one embodiment, there is provided a method of representing a conversation of related messages in a message collection user interface, comprising the steps of: defining a dynamic session placeholder for a respective conversation of related messages; and displaying the message collection user interface comprising the dynamic session placeholder in a list of messages.

[0007] In accordance with another embodiment, there is provided a communications apparatus for communicating messages, the apparatus comprising: a communications subsystem for sending and receiving messages; means adapted to associate related messages as a conversation of related messages; means adapted to define a dynamic session placeholder for a respective conversation of related messages; and means adapted to display a list of messages sent and received by the communications subsystem, the list of message being displayed in a message collection user interface comprising the dynamic session placeholder for representing the conversation of related messages.

[0008] In accordance with further embodiments, there is provided an apparatus such as a messaging server, a method for adapting this server, as well as articles of manufacture such as a pre-recorded storage device or other computer readable medium having program instructions recorded thereon for practising the method of the application, as well as a computer data signal carrying computer readable program instructions for practising the method of the application.

[0009] These and other aspects and features of the present application will become apparent to persons of ordinary skill in the art upon review of the following detailed description, taken in combination with the appended drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] Fig. 1 is a block diagram which illustrates pertinent components of an example wireless communication network and a mobile station which communicates within this network;

[0011] Fig. 2 is a more detailed diagram of the mobile station which may communicate within the wireless communication network;

[0012] Fig. 3 is flow diagram showing operations for defining a communication session as a dynamic session and using a placeholder for accessing such a session in a message collection application in accordance with an embodiment of the disclosure;

[0013] Fig. 4 is flow diagram showing a message collection application displaying entries in accordance with any dynamic session placeholders; and

[0014] Figs. 5-11 are representative GUI display views of a message collection application showing various examples of message operations in accordance with an embodiment of the disclosure.

[0015] It will be noted that throughout the appended drawings, like features are identified by like reference numerals.

DETAILED DESCRIPTION

[0016] Persons of ordinary skill in the art will appreciate that teachings herein are applicable to messages received via wired or wireless communication and though a wireless communication device and network are discussed in the examples illustrating aspects of the present disclosure, no limitations should be imposed. The method and apparatus described in the present disclosure attempt to provide a solution to one or more of the above-described shortcomings in the art. Solutions to other problems will also be apparent to persons of

ordinary skill in the art upon review of the present disclosure.

[0017] Related messages of a conversation are represented as a part of a session. Different sessions may be directly accessed from a message collection GUI. A particular session or conversation is represented in a message collection with a single dynamic placeholder. This allows a user to get access to all the context related messages in "one shot": from the placeholder straight into the active session (conversation). A session's placeholder dynamically updates it's position in the message collection using the timestamp of the last message of the conversation as a criteria. Conversations that are started but which have not occasioned recent activity will automatically age to the bottom of the message collection GUI, leaving the top of the message collection GUI for active sessions defining a hot spot of context related messages. A placeholder may be removed from the message collection GUI as a session is interrupted (i.e. terminated). As such only valid (active) sessions in the message collection GUI need be maintained to avoid wasting resources. Terminated sessions may be optionally archived.

[0018] Fig. 1 is a block diagram of a communication system 100 which includes a mobile station 102 which communicates through a wireless communication network 104. Mobile station 102 preferably includes a visual display 112, a keyboard 114, and perhaps one or more auxiliary user interfaces (UI) 116, each of which is coupled to a controller 106. Controller 106 is also coupled to radio frequency (RF) transceiver circuitry 108 and an antenna 110.

[0019] Typically, controller 106 is embodied as a central processing unit (CPU) which runs operating system software in a memory component (not shown). Controller 106 will normally control overall operation of mobile station 102, whereas signal processing operations associated with communication functions are typically performed in RF transceiver circuitry 108. Controller 106 interfaces with device display 112 to display received information, stored information, user inputs, and the like. Keyboard 114, which may be a telephone type keypad or full alphanumeric keyboard, is normally provided for entering data for storage in mobile station 102, information for transmission to network 104, a telephone number to place a telephone call, commands to be executed on mobile station 102, and possibly other or different user inputs.

[0020] Mobile station 102 sends communication signals to and receives communication signals from network 104 over a wireless link via antenna 110. RF transceiver circuitry 108 performs functions similar to those of a radio network (RN) 128, including for example modulation/demodulation and possibly encoding/decoding and encryption/decryption. It is also contemplated that RF transceiver circuitry 108 may perform certain functions in addition to those performed by RN 128. It will be apparent to those skilled in art that RF transceiver circuitry 108 will be adapted to particular wireless network or networks in which mobile station 102 is intended to operate.

[0021] Mobile station 102 includes a battery interface 122 for receiving one or more rechargeable batteries 124. Battery 124 provides electrical power to electrical circuitry in mobile station 102, and battery interface 122 provides for a mechanical and electrical connection for battery 124. Battery interface 122 is coupled to a regulator 126 which regulates power to the device. When mobile station 102 is fully operational, an RF transmitter of RF transceiver circuitry 108 is typically turned on only when it is sending to network, and is otherwise turned off to conserve resources. Similarly, an RF receiver of RF transceiver circuitry 108 is typically periodically turned off to conserve power until it is needed to receive signals or information (if at all) during designated time periods.

[0022] Mobile station 102 operates using a memory module 120, such as a Subscriber Identity Module (SIM) or a Removable User Identity Module (R-UIM), which is connected to or inserted in mobile station 102 at an interface 118. As an alternative to a SIM or an R-UIM, mobile station 102 may operate based on configuration data programmed by a service provider into an internal memory which is a non-volatile memory. Mobile station 102 may consist of a single unit, such as a data communication device, a cellular telephone, a multiple-function communication device with data and voice communication capabilities, a personal digital assistant (PDA) enabled for wireless communication, or a computer incorporating an internal modem. Alternatively, mobile station 102 may be a multiple-module unit comprising a plurality of separate components, including but in no way limited to a computer or other device connected to a wireless modem. In particular, for example, in the mobile station block diagram of Fig. 1, RF transceiver circuitry 108 and antenna 110 may be implemented as a radio modem unit that may be inserted into a port on a laptop computer.

In this case, the laptop computer would include display 112, keyboard 114, and one or more auxiliary UIs 116, and controller 106 may remain within the radio modem unit that communicates with the computer's CPU or be embodied as the computer's CPU. It is also contemplated that a computer or other equipment not normally capable of wireless communication may be adapted to connect to and effectively assume control of RF transceiver circuitry 108 and antenna 110 of a single-unit device such as one of those described above. Such a mobile station 102 may have a more particular implementation as described later in relation to mobile station 202 of Fig. 2.

[0023] Mobile station 102 communicates in and through wireless communication network 104. In the embodiment of Fig. 1, wireless network 104 is a Third Generation (3G) supported network based on Code Division Multiple Access (CDMA) technologies. In particular, wireless network 104 is a CDMA2000 network which includes fixed network components coupled as shown in Fig. 1. Wireless network 104 of the CDMA2000-type includes a Radio Network (RN) 128, a Mobile Switching Center (MSC) 130, a Signaling System 7 (SS7) network 140, a Home Location Register/Authentication Center (HLR/AC) 138, a Packet Data Serving Node (PDSN) 132, an IP network 134, and a Remote Authentication Dial-In User Service (RADIUS) server 136. SS7 network 140 is communicatively coupled to a network 142 (such as a Public Switched Telephone Network or PSTN), whereas IP network is communicatively coupled to a network 144 (such as the Internet). Persons of ordinary skill in the art will appreciate that other networks and associated topologies including GPRS, E-GPRS and UMTS radio networks, among many others, may be employed with the teachings herein.

[0024] During operation, mobile station 102 communicates with RN 128 which performs functions such as call-setup, call processing, and mobility management. RN 128 includes a plurality of base station transceiver systems that provide wireless network coverage for a particular coverage area commonly referred to as a "cell". A given base station transceiver system of RN 128, such as the one shown in Fig. 1, transmits communication signals to and receives communication signals from mobile stations within its cell. The base station transceiver system normally performs such functions as modulation and possibly encoding and/or encryption of signals to be transmitted to the mobile station in accordance with

particular, usually predetermined, communication protocols and parameters, under control of its controller. The base station transceiver system similarly demodulates and possibly decodes and decrypts, if necessary, any communication signals received from mobile station 102 within its cell. Communication protocols and parameters may vary between different networks. For example, one network may employ a different modulation scheme and operate at different frequencies than other networks. The underlying services may also differ based on its particular protocol revision.

[0025] The wireless link shown in communication system 100 of Fig. 1 represents one or more different channels, typically different radio frequency (RF) channels, and associated protocols used between wireless network 104 and mobile station 102. An RF channel is a limited resource that must be conserved, typically due to limits in overall bandwidth and a limited battery power of mobile station 102. Those skilled in art will appreciate that a wireless network in actual practice may include hundreds of cells depending upon desired overall expanse of network coverage. All pertinent components may be connected by multiple switches and routers (not shown), controlled by multiple network controllers.

[0026] For all mobile stations 102 registered with a network operator, permanent data (such as mobile station 102 user's profile) as well as temporary data (such as mobile station's 102 current location) are stored in a HLR/AC 138. In case of a voice call to mobile station 102, HLR/AC 138 is queried to determine the current location of mobile station 102. A Visitor Location Register (VLR) of MSC 130 is responsible for a group of location areas and stores the data of those mobile stations that are currently in its area of responsibility. This includes parts of the permanent mobile station data that have been transmitted from HLR/AC 138 to the VLR for faster access. However, the VLR of MSC 130 may also assign and store local data, such as temporary identifications. Mobile station 102 is also authenticated on system access by HLR/AC 138. In order to provide packet data services to mobile station 102 in a CDMA2000-based network, RN 128 communicates with PDSN 132. PDSN 132 provides access to the Internet 144 (or intranets, Wireless Application Protocol (WAP) servers, etc.) through IP network 134. PDSN 132 also provides foreign agent (FA) functionality in mobile IP networks as well as packet transport for virtual private networking. PDSN 132 has a range of IP addresses and performs IP address management, session

maintenance, and optional caching. RADIUS server 136 is responsible for performing functions related to authentication, authorization, and accounting (AAA) of packet data services, and may be referred to as an AAA server.

[0027] Wireless communication network 104 also includes a Push-to-talk over Cellular (PoC) server 137 which may be coupled to IP network 134. PoC server 137 operates to facilitate PoC individual and group communication sessions between mobile stations within network 104. A conventional PoC communication session involves a session connection between end users of mobile stations, referred to as session "participants", who communicate one at a time in a half-duplex manner much like conventional walkie-talkies or two-way radios.

[0028] Those skilled in art will appreciate that wireless network 104 may be connected to other systems, possibly including other networks, not explicitly shown in Fig. 1. A network will normally be transmitting at very least some sort of paging and system information on an ongoing basis, even if there is no actual packet data exchanged. Although the network consists of many parts, these parts all work together to result in certain behaviours at the wireless link.

[0029] Fig. 2 is a detailed block diagram of a preferred mobile station 202. Mobile station 202 is preferably a two-way communication device having at least voice and advanced data communication capabilities, including the capability to communicate with other computer systems. Depending on the functionality provided by mobile station 202, it may be referred to as a data messaging device, a two-way pager, a cellular telephone with data messaging capabilities, a wireless Internet appliance, or a data communication device (with or without telephony capabilities). Mobile station 202 may communicate with any one of a plurality of base station transceiver systems 200 within its geographic coverage area.

[0030] Mobile station 202 will normally incorporate a communication subsystem 211, which includes a receiver 212, a transmitter 214, and associated components, such as one or more (preferably embedded or internal) antenna elements 216 and 218, local oscillators (LOs) 213, and a processing module such as a digital signal processor (DSP) 220. Communication subsystem 211 is analogous to RF transceiver circuitry 108 and antenna 110

shown in Fig. 1. As will be apparent to those skilled in field of communications, particular design of communication subsystem 211 depends on the communication network in which mobile station 202 is intended to operate.

[0031] Mobile station 202 may send and receive communication signals over the network after required network registration or activation procedures have been completed. Signals received by antenna 216 through the network are input to receiver 212, which may perform such common receiver functions as signal amplification, frequency down conversion, filtering, channel selection, and like, and in example shown in Fig. 2, analog-to-digital (A/D) conversion. A/D conversion of a received signal allows more complex communication functions such as demodulation and decoding to be performed in DSP 220. In a similar manner, signals to be transmitted are processed, including modulation and encoding, for example, by DSP 220. These DSP-processed signals are input to transmitter 214 for digital-to-analog (D/A) conversion, frequency up conversion, filtering, amplification and transmission over communication network via antenna 218. DSP 220 not only processes communication signals, but also provides for receiver and transmitter control. For example, the gains applied to communication signals in receiver 212 and transmitter 214 may be adaptively controlled through automatic gain control algorithms implemented in DSP 220.

[0032] Network access is associated with a subscriber or user of mobile station 202, and therefore mobile station 202 requires a memory module 262, such as a Subscriber Identity Module or "SIM" card or a Removable User Identity Module (R-UIM), to be inserted in or connected to an interface 264 of mobile station 202 in order to operate in the network. Alternatively, memory module 262 may be a non-volatile memory which is programmed with configuration data by a service provider so that mobile station 202 may operate in the network. Since mobile station 202 is a mobile battery-powered device, it also includes a battery interface 254 for receiving one or more rechargeable batteries 256. Such a battery 256 provides electrical power to most if not all electrical circuitry in mobile station 202, and battery interface 254 provides for a mechanical and electrical connection for it. The battery interface 254 is coupled to a regulator (not shown in Fig. 2) which provides power $V+$ to all of the circuitry.

[0033] Mobile station 202 includes a microprocessor 238 (which is one implementation

of controller 106 of Fig. 1) which controls overall operation of mobile station 202. This control includes network selection techniques of the present application. Communication functions, including at least data and voice communications, are performed through communication subsystem 211. Microprocessor 238 also interacts with additional device subsystems such as a display 222, a flash memory 224, a random access memory (RAM) 226, auxiliary input/output (I/O) subsystems 228, a serial port 230, a keyboard 232, a speaker 234, a microphone 236, a short-range communications subsystem 240, and any other device subsystems generally designated at 242. Some of the subsystems shown in Fig. 2 perform communication-related functions, whereas other subsystems may provide "resident" or on-device functions. Notably, some subsystems, such as keyboard 232 and display 222, for example, may be used for both communication-related functions, such as entering a text message for transmission over a communication network, and device-resident functions such as a calculator or task list. Operating system software used by microprocessor 238 is preferably stored in a persistent store such as flash memory 224, which may alternatively be a read-only memory (ROM) or similar storage element (not shown). Those skilled in the art will appreciate that the operating system, specific device applications, or parts thereof, may be temporarily loaded into a volatile store such as RAM 226.

[0034] Microprocessor 238, in addition to its operating system functions, preferably enables execution of software applications on mobile station 202. A predetermined set of applications which control basic device operations, including at least data and voice communication applications, will normally be installed on mobile station 202 during its manufacture. A preferred application that may be loaded onto mobile station 202 may be a personal information manager (PIM) application having the ability to organize and manage data items relating to user such as, but not limited to, e-mail, calendar events, voice mails, appointments, and task items. Naturally, one or more memory stores are available on mobile station 202 and SIM 262 to facilitate storage of PIM data items and other information.

[0035] The PIM application preferably has the ability to send and receive data items via the wireless network. In a preferred embodiment, PIM data items are seamlessly integrated, synchronized, and updated via the wireless network, with the mobile station user's corresponding data items stored and/or associated with a host computer system thereby

creating a mirrored host computer on mobile station 202 with respect to such items. This is especially advantageous where the host computer system is the mobile station user's office computer system. Additional applications may also be loaded onto mobile station 202 through network, an auxiliary I/O subsystem 228, serial port 230, short-range communications subsystem 240, or any other suitable subsystem 242, and installed by a user in RAM 226 or preferably a non-volatile store (not shown) for execution by microprocessor 238. Such flexibility in application installation increases the functionality of mobile station 202 and may provide enhanced on-device functions, communication-related functions, or both. For example, secure communication applications may enable electronic commerce functions and other such financial transactions to be performed using mobile station 202.

[0036] In a data communication mode, a received signal such as a text message, an e-mail message, or web page download will be processed by communication subsystem 211 and input to microprocessor 238. Microprocessor 238 will preferably further process the signal for output to display 222 or alternatively to auxiliary I/O device 228. A user of mobile station 202 may also compose data items, such as e-mail messages, for example, using keyboard 232 in conjunction with display 222 and possibly auxiliary I/O device 228. Keyboard 232 is preferably a complete alphanumeric keyboard and/or telephone-type keypad. These composed items may be transmitted over a communication network through communication subsystem 211.

[0037] For voice communications, the overall operation of mobile station 202 is substantially similar, except that the received signals would be output to speaker 234 and signals for transmission would be generated by microphone 236. Alternative voice or audio I/O subsystems, such as a voice message recording subsystem, may also be implemented on mobile station 202. Although voice or audio signal output is preferably accomplished primarily through speaker 234, display 222 may also be used to provide an indication of the identity of a calling party, duration of a voice call, or other voice call related information, as some examples.

[0038] Serial port 230 in Fig. 2 is normally implemented in a personal digital assistant (PDA)-type communication device for which synchronization with a user's desktop computer is a desirable, albeit optional, component. Serial port 230 enables a user to set

preferences through an external device or software application and extends the capabilities of mobile station 202 by providing for information or software downloads to mobile station 202 other than through a wireless communication network. The alternate download path may, for example, be used to load an encryption key onto mobile station 202 through a direct and thus reliable and trusted connection to thereby provide secure device communication.

[0039] Short-range communications subsystem 240 of Fig. 2 is an additional optional component which provides for communication between mobile station 202 and different systems or devices, which need not necessarily be similar devices. For example, subsystem 240 may include an infrared device and associated circuits and components, or a Bluetooth™ communication module to provide for communication with similarly-enabled systems and devices. Bluetooth™ is a registered trademark of Bluetooth SIG, Inc.

[0040] One function of PIM is to provide a GUI for accessing messages received or sent by station 202. A message collection application is an example of a user interface for displaying different types of messages received and sent by mobile station 202.

[0041] Fig. 5 illustrates an example view 500 of a message collection application adapted in accordance with an embodiment of the disclosure. View 500 comprises a device status portion 502 for showing various device status information such as battery level, wireless network signal level, current time and date, etc., in contrast to message collection application specific information. View 500 further comprises message collection application information 504 including a list of messages sent or received by station 202 such as exemplary message 506. Each message entry in the list typically comprises an icon 508 representative of the type of message comprising the entry, a time of action 510 (e.g. time sent or received), an opposite message party 512 (e.g. sender for a received messages and intended recipient for a sent message) and a brief portion of the message or description thereof 514. Less or additional information may also be provided (e.g. message importance, attachment indicator, size, etc.). Messages in the list may be navigated and selected for operations by moving a focus about the list such as via a thumb wheel or other input device 228. The focus may be represented in various ways such as reverse display mode 516.

[0042] In accordance with one feature, messages from a common communication session

may be grouped and represented in the message collection with as a single entry via a dynamic placeholder for the session. Fig. 6 illustrates an instant messaging (IM) session between a user "John" of mobile station 202 and an opposite IM party "Mike" in accordance with the prior art. Representative IM view 600 shows a plurality of IM messages in a conversation with user "Mike" 602 in a similar linear mode 604 to prior art message collection applications. Rather than represent each message of an IM conversation in a unified message collection such as view 500, a single dynamic message collection entry may be defined and maintained during the message session. Fig. 7 illustrates a view 700 of the message collection application showing a dynamic session placeholder 702 as a single entry of the messages list for representing the entire IM session. As new messages are received or sent via station 202, corresponding message entries may be added for presenting to the user via the message collection application. Fig. 8 shows the receipt of a new SMS message 802 subsequent to the last time or a message represented by dynamic session placeholder 702. Thus a dynamic session placeholder may age in a similar manner to regular message entries. Older conversations move down the list while newer messages and sessions are at the top of the list.

[0043] However, should new activity occur with a session (e.g. receiving or sending of a message), the time stamp of the dynamic session placeholder is updated and its position in the message collection changed accordingly. Fig. 9 shows a view 900 of the message collection with an updated dynamic session placeholder 902 in order ahead of aged SMS message 802. Message 702 (now message 902) is "removed" accordingly.

[0044] As noted previously, particular message entries may be selected individually or in a group for action. Fig. 10 illustrates a view 1000 of the message collection application showing a dynamic session placeholder message entry 1002 selected for action. A pop-up selection list 1004 is activated to present a user with choices for the particular message entry (e.g. Open, Mark Unopened, Delete) as well as various actions which may be invoked from the message collection application (e.g. various message compose options, search options, message collection preference options, etc.). Open option 1006 may be invoked to launch an IM application (e.g. view 600) to open the particular session associated with the dynamic placeholder to view or otherwise maintain the conversation. Further messages may be

composed and sent (not shown) or received messages reviewed, etc. as is well known.

[0045] Should a session terminate, the dynamic session placeholder is preferably removed from the message collection. Fig. 11 shows a view 1100 of an IM session having a pop-up list 1102 of actions for the IM application. One action is End Conversation 1104 to terminate the IM session. Invoking this action preferably updates the dynamic session placeholder to have it removed from display by the message collection application. In this way only active sessions are maintained in the message collection GUI to free storage space and entries in the list. Optionally, a session which become inactive may be archived or otherwise persisted for viewing, printing etc. if desired. Fig. 12 illustrates a view 1200 with dynamic session entry 902 removed following an End Conversation 1104 action.

[0046] With reference to Figs. 3 and 4 there is illustrated operations for using a dynamic session placeholder in accordance with an embodiment of the disclosure. Persons of ordinary skill in the art will appreciate that such operations may be embodied within computer instructions (software) for configuring mobile station 202. With reference to operations 300, an IM session is initiated 302 between a user of device 202 and another remote user (not shown). A dynamic session placeholder is defined 304 for representing the session as an entry within a message collection application. The placeholder may comprise a data structure (not shown) for storing session data including a time stamp, other party, etc. The data structure may include the message data of the session or a link associating the placeholder to such data (e.g. as maintained by another application (i.e. an IM application) for conducting the session). At step 306, the conversation of the IM session is conducted as messages are sent and received and the dynamic placeholder is updated in response 308. If the conversation is not terminated (310), operations 306-308 are repeated as necessary. If at step 310 the conversation is ended (e.g. see view 1100) the dynamic placeholder may be removed 312 (or marked inactive for further re-use in some storage re-use embodiments).

[0047] With reference to operations 400, meanwhile, the message collection application GUI may be invoked to display messages including any dynamic placeholders for any active sessions (step 402). Example views are view 500, 700, 800 and 900. If a message is selected (404) the actions associated therewith may be displayed (406) (e.g. view 1000) otherwise operations loop to step 402. An action may be selected by a user (e.g. Open 1006) and

invoked (step 408). Some actions will change control of mobile station 202 to end the current view of the message collection application such as by invoking another application. A determination of such may be made at step 410 so that operations 400 may then end or otherwise in response to the selected action of step 408, operations may loop to step 402. As the dynamic placeholder is updated by message activity of a session, the message collection application automatically displays the updated placeholder in response to the activity. As the time stamp changes or not, the placeholder's relative position in the list is changed. No change results in an aging placeholder and a new change moves the placeholder up the list.

[0048] While this application is primarily described as a method, a person of ordinary skill in the art will understand that the application is also directed to an apparatus for carrying out the disclosed method and including apparatus parts for performing each described method step, be it by way of hardware components, a computer programmed by appropriate software to enable the practice of the disclosed method, by any combination of the two, or in any other manner. Moreover, an article of manufacture for use with the apparatus, such as a pre-recorded storage device or other similar computer readable medium including program instructions recorded thereon, or a computer data signal carrying computer readable program instructions, may direct an apparatus to facilitate the practice of the disclosed method. It is understood that such apparatus, articles of manufacture, and computer data signals also come within the scope of the application.

[0049] The embodiments of the application described above are intended to be examples only. Those of skill in the art may effect alterations, modifications and variations to the particular embodiments without departing from the scope of the application. The subject matter described herein in the recited claims intends to cover and embrace all suitable changes in technology.

CLAIMS:

1. A method of representing a conversation of related messages in a message collection user interface, comprising the steps of:

defining a dynamic session placeholder for a respective conversation of related messages, said dynamic session placeholder representing as a single entry a collection of messages constituting a common communication session; and

displaying the message collection user interface comprising the dynamic session placeholder in a list of messages.

2. The method of claim 1 wherein messages comprise both sent messages and received messages.

3. The method of claim 1 wherein the conversation is an instant messaging conversation and the related messages are instant messages.

4. The method of claim 3 wherein the related messages comprise both sent instant messages and received instant messages.

5. The method of claim 4 wherein the dynamic session placeholder includes a representation of a most recent message in the conversation.

6. The method of claim 5 wherein the most recent message is a sent message.

7. The method of claim 3 further comprising:

detecting a selection of the dynamic session placeholder; and

opening an instant messaging application pursuant to the detected selection of the dynamic session placeholder, the instant messaging application being opened to the particular conversation to which the dynamic session placeholder relates.

8. The method of claim 3 further comprising:

automatically updating the displayed dynamic session placeholder as a result of messaging activity.

9. The method of claim 8 wherein the messaging activity comprises sending messages and receiving messages.

10. The method of claim 3 wherein the dynamic session placeholder is automatically updated upon receipt of an instant message.

11. The method of claim 3 wherein the dynamic session placeholder is automatically updated upon transmission of an instant message.

12. The method of claim 3 wherein the dynamic session placeholder includes a name of an opposite instant messaging party.

13. The method of claim 3 wherein the list of messages comprises entries indicating e-mail messages, voice messages, instant messages, short messaging service messages and administrative messages.

14. The method of claim 3 wherein the dynamic session placeholder includes an icon associated with an opposite instant messaging party.

15. The method of claim 3 further comprising:

detecting a selection of the dynamic session placeholder;

presenting a pop-up selection list in response to the detected selection, the pop-up selection list including an option to open the conversation of related messages.

16. The method of claim 3 further comprising:

detecting a selection of the dynamic session placeholder; and

accessing an instant messaging application in response to the detected selection, the accessing going directly to the conversation.

17. The method of claim 16 wherein the instant messaging application includes a list of communicated messages of the particular conversation.

18. The method of claim 17 wherein the list of messages communicated in the particular session comprises a representation of a status of each of the messages in the list of messages communicated.

19. The method of claim 18 wherein the status includes a graphical representation signifying that the associated message has been read.

20. The method of claim 3 wherein the dynamic session placeholder comprises a data structure of instant messaging information.

21. The method of claim 8, further comprising the step of updating a time stamp of the dynamic session placeholder in accordance with a last message time of the related messages.

22. The method of claim 8 or 21, wherein the displaying displays the dynamic session placeholder in response to the updating thereby to change the order of the dynamic session placeholder in the message collection.

23. The method of any one of claims 1 to 22, further comprising the step of removing the dynamic session placeholder in response to an interruption of a respective conversation of related messages; and wherein the displaying is responsive to the removing.

24. The method of any one of claims 1 to 23 further comprising, in response to a selection of the dynamic session placeholder, the step of invoking an application associated with a message type of the related messages thereby to maintain the conversation.

25. A method of representing a conversation of related messages in a message collection user interface, comprising the steps of:

defining a conversation placeholder for a respective conversation of related messages, said conversation placeholder representing as a single entry a collection of messages constituting a common communication session; and

displaying the message collection user interface comprising the conversation placeholder in a list of messages.

26. The method of claim 25 wherein messages comprise both sent messages and received messages.

27. The method of claim 25 wherein the conversation is an instant messaging conversation and the related messages are instant messages.

28. The method of claim 27 wherein the related messages comprise both sent instant messages and received instant messages.

29. The method of claim 28 wherein the conversation placeholder includes a representation of a most recent message in the conversation.

30. The method of claim 29 wherein the most recent message is a sent message.

31. The method of claim 27 further comprising:

detecting a selection of the conversation placeholder; and

accessing an instant messaging application in response to the detected selection, the accessing going directly to the conversation.

32. The method of claim 26 further comprising:

automatically updating the displayed conversation placeholder as a result of messaging activity.

33. The method of claim 32 wherein the messaging activity comprises sending messages and receiving messages.

34. The method of claim 27 wherein the conversation placeholder is automatically updated upon receipt of an instant message.

35. The method of claim 27 wherein the conversation placeholder is automatically updated upon transmission of an instant message.

36. The method of claim 27 wherein the conversation placeholder includes a name of an opposite instant messaging party.

37. The method of claim 27 wherein the list of messages comprises entries indicating e-mail messages, voice messages, instant messages, short messaging service messages and administrative messages.

38. The method of claim 27 wherein the conversation placeholder includes an icon associated with an opposite instant messaging party.

39. The method of claim 27 further comprising:

detecting a selection of the conversation placeholder;

presenting a pop-up selection list in response to the detected selection, the pop-up selection list including an option to open the conversation of related messages.

40. The method of claim 26 further comprising:

detecting a selection of the conversation placeholder; and

opening an instant messaging application pursuant to the detected selection of the conversation placeholder, the instant messaging application being opened to the particular conversation to which the conversation placeholder relates.

41. The method of claim 39 wherein the instant messaging application includes a list of communicated messages of the particular conversation.

42. The method of claim 40 wherein the list of messages communicated in the particular session comprises a representation of a status of each of the messages in the list of messages communicated.

43. The method of claim 41 wherein the status includes a graphical representation signifying that the associated message has been delivered.

44. The method of claim 27 wherein the conversation placeholder comprises a data structure of instant messaging information.

45. A computer readable medium having instructions comprising computer executable instructions embedded thereon for execution by a processor of an electronic device for representing a

conversation of related messages in a message collection user interface such that when executed, the processor:

defines a dynamic session placeholder for a respective conversation of related messages, said dynamic session placeholder representing as a single entry a collection of messages constituting a common communication session; and

displays the message collection user interface comprising the dynamic session placeholder in a list of messages.

46. The computer readable medium of claim 45 wherein messages comprise both sent messages and received messages.

47. The computer readable medium of claim 45 wherein the conversation is an instant messaging conversation and the related messages are instant messages.

48. The computer readable medium of claim 47 wherein the related messages comprise both sent instant messages and received instant messages.

49. The computer readable medium of claim 48 wherein the dynamic session placeholder includes a representation of a most recent message in the conversation.

50. The computer readable medium of claim 49 wherein the most recent message is a sent message.

51. The computer readable medium of claim 47 further comprising:

detecting a selection of the dynamic session placeholder; and

accessing an instant messaging application in response to the detected selection, the accessing going directly to the conversation.

52. The computer readable medium of claim 47 further comprising:

automatically updating the displayed dynamic session placeholder as a result of messaging activity.

53. The computer readable medium of claim 52 wherein the messaging activity comprises sending messages and receiving messages.

54. The computer readable medium of claim 47 wherein the dynamic session placeholder is automatically updated upon receipt of an instant message.

55. The computer readable medium of claim 47 wherein the dynamic session placeholder is automatically updated upon transmission of an instant message.

56. The computer readable medium of claim 48 wherein the dynamic session placeholder includes a name of an opposite instant messaging party.

57. The computer readable medium of claim 48 wherein the list of messages comprises entries indicating e-mail messages, voice messages, instant messages, short messaging service messages and administrative messages.

58. The computer readable medium of claim 48 wherein the dynamic session placeholder includes an icon associated with an opposite instant messaging party.

59. The computer readable medium of claim 48 further comprising:

detecting a selection of the dynamic session placeholder;

presenting a pop-up selection list in response to the detected selection, the pop-up selection list including an option to open the conversation of related messages.

60. The computer readable medium of claim 48 further comprising:

detecting a selection of the dynamic session placeholder; and

opening an instant messaging application pursuant to the detected selection of the dynamic session placeholder, the instant messaging application being opened to the particular conversation to which the dynamic session placeholder relates.

61. The computer readable medium of claim 60 wherein the instant messaging application includes a list of communicated messages of the particular conversation.

62. The computer readable medium of claim 61 wherein the list of messages communicated in the particular session comprises a representation of a status of each of the messages in the list of messages communicated.

63. The computer readable medium of claim 62 wherein the status includes a graphical representation signifying that the associated message has been delivered.

64. The computer readable medium of claim 62 wherein the status includes a graphical representation signifying that the associated message has been read.

65. The computer readable medium of claim 63 wherein the graphical representation comprises a 'D'.

66. The computer readable medium of claim 64 wherein the graphical representation comprises an 'R'.

67. The computer readable medium of claim 60 wherein the dynamic session placeholder comprises a data structure of instant messaging information.

68. A computer readable medium having instructions comprising computer executable instructions embedded thereon for execution by a processor of an electronic device for representing a conversation of related messages in a message collection user interface such that when executed, the processor:

defines a first conversation placeholder for a first conversation of related data communications, said first conversation placeholder representing the first conversation of related data communications as a first single entry; and

displays the message collection user interface comprising the first conversation placeholder in a list of data communications wherein the data communications comprise both sent data communications and received data communications.

69. The computer readable medium of claim 68 further comprising computer executable instructions such that, when executed, the processor:

defines a second conversation placeholder for a second conversation of related data communications, said second conversation placeholder representing the second conversation of related data communications as a second single entry; and

displays the message collection user interface comprising the second conversation placeholder in a list of data communications wherein the data communications comprise both sent data communications and received data communications.

70. The computer readable medium of any of claims 68 and 69 wherein the data communications are messages.

71. The computer readable medium of claim 68 wherein the first conversation is an instant messaging conversation and the related data communications are instant messages.

72. The computer readable medium of claim 71 wherein the related data communications comprise both sent instant messages and received instant messages.

73. The computer readable medium of claim 68 wherein the first conversation placeholder includes a representation of a most recent data communication in the first conversation.

74. The computer readable medium of claim 73 wherein the most recent data communication is a sent message.

75. The computer readable medium of claim 68 further comprising computer executable instructions such that, when executed, the processor:

detects a selection of the first conversation placeholder; and

accesses an instant messaging application in response to the detected selection, the accessing going directly to the first conversation of related data communications.

76. The computer readable medium of claim 68 further comprising computer executable instructions such that, when executed, the processor:

automatically updates the displayed first conversation placeholder as a result of messaging activity.

77. The computer readable medium of claim 76 wherein the messaging activity comprises sending messages and receiving messages.

78. The computer readable medium of claim 68 wherein the first conversation placeholder is updated upon receipt of an instant message.

79. The computer readable medium of claim 71 wherein the first conversation placeholder includes a name of an opposite instant messaging party.

80. The computer readable medium of claim 68 wherein the list of data communications comprises entries indicating e-mail messages, voice messages, instant messages, short messaging service messages and administrative messages.

81. The computer readable medium of claim 71 wherein the first conversation placeholder includes an icon associated with an opposite instant messaging party.

82. The computer readable medium of claim 68 further comprising computer executable instructions such that, when executed, the processor:

detects a selection of the first conversation placeholder; and

presents a pop-up selection list in response to the detected selection, the pop-up- selection list including an option to open the first conversation of related data communications.

83. The computer readable medium of claim 68 further comprising computer executable instructions such that, when executed, the processor:

detects a selection of the conversation placeholder; and

opens an instant messaging application pursuant to the detected selection of the conversation placeholder, the instant messaging application being opened to the particular conversation to which the conversation placeholder relates.

84. The computer readable medium of claim 83 wherein the instant messaging application includes a list of communicated messages of the first conversation.

85. The computer readable medium of claim 84 wherein the list of messages communicated in the first conversation comprises a representation of a status of each of the messages in the list of messages communicated.

86. The computer readable medium of claim 85 wherein the status includes a graphical representation signifying that an associated message has been delivered.

87. The computer readable medium of claim 85 wherein the status includes a graphical representation signifying that an associated message has been read.

88. The computer readable medium of claim 86 wherein the graphical representation comprises a 'D'.

89. The computer readable medium of claim 87 wherein the graphical representation comprises an 'R'.

90. The computer readable medium of claim 83 wherein the conversation placeholder comprises a data structure of instant messaging information.

91. A communications apparatus for communicating messages, the apparatus comprising:

a communications subsystem for sending and receiving messages;

means adapted to associate related messages as a conversation of related messages;

means adapted to define a dynamic session placeholder for a respective conversation of related messages, said dynamic session placeholder representing as a single entry a collection of messages constituting a common communication session; and

means adapted to display a list of messages sent and received by the communications subsystem, the list of messages being displayed in a message collection user interface comprising the dynamic session placeholder for representing the conversation of related messages.

92. The communications apparatus of claim 91 wherein the related messages are both sent messages and received messages.

93. The communications apparatus of claim 91 wherein the related messages are instant messages and the conversation is an instant messaging conversation.

94. The communications apparatus of claim 93 wherein the instant messages comprise both sent instant messages and received instant messages.

95. The communications apparatus of claim 94 wherein the displayed conversation placeholder includes a representation of a most recent message in the instant message conversation.

96. The apparatus of claim 91, further comprising means adapted to update the dynamic session placeholder in response to an activity of the respective conversation of related messages.

97. The apparatus of claim 96, further comprising means adapted to update a time stamp of the dynamic session placeholder in accordance with a last message time of the related messages.

98. The apparatus of any one of claims 96 to 97, wherein the display means is further adapted to display the dynamic session placeholder in response to an update thereby to change the order of the dynamic session placeholder in the message collection.

99. The apparatus of any one of claims 96 to 98, wherein the display means is further adapted to remove the dynamic session placeholder in response to an interruption of a respective conversation of related messages, and the display means is further adapted to display the message collection in response to a removal of the dynamic session placeholder.

100. The apparatus of claim 99, further comprising means adapted to archive a conversation of related messages in response to the interruption.

101. The apparatus of any one of claims 96 to 99, wherein the display means is further adapted to display the message collection in response to the message unrelated to the conversation comprising

any dynamic session placeholder in response to at least one of the steps of receiving and sending a message unrelated to the conversation.

102. The apparatus of any one of claims 96 to 101, wherein the defining means is further adapted to define the dynamic session placeholder comprising data representative of the conversation and an association with the related messages.

103. The apparatus of any one of claims 96 to 102, further comprising means adapted to, in response to a selection of the dynamic session placeholder in the list of messages, invoke an application associated with a message type of the related messages thereby to maintain the conversation.

104. A communications apparatus for communicating messages, the apparatus comprising:

a communications subsystem for sending and receiving messages;

means adapted to associate related messages as a conversation of related messages;

means adapted to define a conversation placeholder for a respective conversation of related messages, said dynamic session placeholder representing as a single entry a collection of messages constituting a common communication session; and

means adapted to display a list of messages sent and received by the communications subsystem, the list of messages being displayed in a message collection user interface comprising the conversation placeholder for representing the conversation of related messages.

105. The communications apparatus of claim 104 wherein the related messages are both sent messages and received messages.

106. The communications apparatus of claim 104 wherein the related messages are instant messages and the conversation is an instant messaging conversation.

107. The communications apparatus of claim 106 wherein the instant messages comprise both sent instant messages and received instant messages.

108. The communications apparatus of claim 107 wherein the displayed conversation placeholder includes a representation of the most recent message in the instant message conversation.

109. A method of representing a conversation of related messages in a message collection user interface displayed on a computing device, the message collection user interface displaying a list of messages from one or more communications applications on the computing device, the method comprising the steps of:

defining at least one dynamic session placeholder representing a conversation of related messages; and

displaying the dynamic session placeholder in the list of messages displayed in the message collection user interface.

110. The method of claim 109 wherein the related messages comprise sent instant messages and received instant messages.

111. The method of claim 110 wherein the displayed dynamic session placeholder comprises a representation of a most recent message in the instant message conversation.

112. The method of claim 109, further comprising updating the dynamic session placeholder in response to an activity in respect of the conversation of related messages.

113. The method of claim 112, wherein the updating comprises updating a time stamp of the dynamic session placeholder in accordance with a last message time of the conversation of related messages.

114. The method of claim 112, wherein the updating changes the order in which the dynamic session placeholder is displayed in the message collection user interface.

115. The method of claim 109, further comprising removing the dynamic session placeholder in response to an interruption of the respective conversation of related messages.

116. The method of claim 109, further comprising archiving the conversation of related messages in response to the interruption.

117. The method of claim 109, further comprising:

at least one of receiving and sending one or more messages unrelated to the conversation of related messages; and

in response to the at least one of receiving and sending one or more messages unrelated to the conversation of related messages, displaying a message entry in the message collection user interface.

118. The method of claim 109, wherein the dynamic session placeholder comprises data representative of the conversation of related messages and an iconic representation associated with the conversation of related messages.

119. The method of claim 109, further comprising, in response to receiving user input comprising selection of the dynamic session placeholder, invoking an application associated with a message type of the conversation of related messages.

120. A method of representing a conversation of related messages in a message collection user interface displayed on a computing device, the message collection user interface displaying a list of messages from one or more communications applications on the computing device, the method comprising the steps of:

defining at least one conversation placeholder representing a conversation of related messages;
and

displaying the dynamic session placeholder in the list of messages displayed in the message collection user interface.

121. The method of claim 120 wherein the related messages comprise sent instant messages and received instant messages.

122. The method of claim 121 wherein the displayed conversation placeholder comprises a representation of a most recent message in the instant message conversation.

123. An apparatus for communicating messages, the apparatus comprising:
a communications subsystem for sending and receiving messages;

a display screen and one or more input devices for receiving input from a user;

a storage device for storing instructions and data; and

a processor coupled to the display screen, storage device and communications subsystem, the storage device storing instructions and data to configure the processor to:

associate related messages as a conversation of related messages;

define at least one dynamic session placeholder representing a conversation of related messages;

display the dynamic session placeholder in a list of messages displayed in a message collection user interface displayed on the display screen.

124. The apparatus of claim 123 wherein the related messages comprise both sent messages and received messages.

125. The apparatus of claim 124 wherein the sent messages are instant messages and the received messages are instant messages.

126. The apparatus of claim 123, wherein the instructions and data configure the processor to update the dynamic session placeholder in response to an activity in respect of the conversation of related messages.

127. The apparatus of claim 124, wherein the instructions and data configure the processor to update a time stamp of the dynamic session placeholder in accordance with a last message time of the conversation of related messages.

128. The apparatus of claim 124, wherein the instructions and data configure the processor to change the order in which the dynamic session placeholder is displayed in the message collection user interface.

129. The apparatus of claim 123, wherein the instructions and data configure the processor to remove the dynamic session placeholder in response to an interruption of the respective conversation of related.

130. The apparatus of claim 127 wherein the instructions and data configure the processor to archive the conversation of related messages in response to the interruption.

131. The apparatus of claim 123 wherein the instructions and data configure the processor to, in response to at least one of receiving and sending one or more messages unrelated to the conversation of related messages, display a message entry in the message collection user interface.

132. The apparatus of claim 123, wherein the instructions and data configure the processor to define the dynamic session placeholder comprising data representative of the conversation of related messages and an iconic representation associated with the conversation of related messages.

133. The apparatus of claim 123, wherein the instructions and data configure the processor to, in response to receiving user input comprising selection of the dynamic session placeholder in the list of messages, invoke an application associated with a message type of the conversation of related messages.

134. A message entry list user interface comprising:

a first conversation session placeholder for a first conversation session of related data communications, said first conversation session placeholder reflecting the first conversation session of related data communications as a single entry; and

a message entry list comprising sent messages and received messages, wherein the first conversation session placeholder is displayed in the message entry list.

135. The message entry list user interface of claim 134 further comprising:

a second conversation session placeholder for a second conversation session of related data communications, said second conversation session placeholder reflecting the second conversation session of related data communications as a single entry, wherein the second conversation session placeholder is displayed in the message entry list.

136. The message entry list user interface of claim 134 wherein the related data communications are instant messages.

137. The message entry list user interface of claim 134 wherein the first conversation session placeholder comprises a representation of a most recent message in the first conversation session of related data communications.

138. The message entry list user interface of claim 137 wherein the most recent message is a sent message.

139. The message entry list user interface of claim 138 wherein the message entry list user interface is displayed on a mobile device.

140. The message entry list user interface of claim 134 further comprising a plurality of different types of messages.

141. The message entry list user interface of claim 140 wherein the plurality of different types of messages comprise e-mail messages, short messaging service (SMS) messages and instant messages.

142. The message entry list user interface of claim 134 wherein upon selection of the first conversation session placeholder a messaging application corresponding to a message type of the first conversation session is opened.

143. A method of representing a conversation of related instant messages in a message collection graphical user interface (GUI) of a mobile phone, the method comprising the steps of:

displaying the message collection GUI comprising a plurality of received entries, some of the plurality of received entries representing a received email message, and a plurality of sent entries, some of the plurality of sent entries representing a sent email message; and

displaying a first single conversation entry amongst the plurality of received and sent message entries in the message collection GUI, the first single conversation entry representing an active instant messaging session between a first and second user.

144. The method of claim 143 further comprising:

displaying a second single conversation entry amongst the plurality of received and sent message entries in the message collection GUI, the second single conversation entry representing an active instant messaging session between the first user and a third user.

145. The method of claim 144 further comprising:

displaying the plurality of received entries, sent entries, the first single conversation entry and the second single conversation entry as a vertical list of messages in the message collection GUI;

wherein the newest conversation entry of the plurality of conversation entries is displayed higher in the vertical list of messages.

146. The method of claim 144 further comprising:

receiving instructions to launch the first single conversation entry; and

displaying an active instant messaging session GUI comprising a plurality of received and sent instant messages between the first and second user.

147. The method of claim 144 further comprising some of the plurality of received entries further representing a received SMS message, and some of the plurality of sent entries further representing a sent SMS message.

148. A computer-readable media comprising stored electronic data structures representing executable instructions which, when executed by a processor of a wireless communication device, cause the wireless communication device to:

represent a conversation of related instant messages in a message collection graphical user interface (GUI) of the wireless communication device;

display the message collection GUI comprising a plurality of received entries, some of the plurality of received entries representing a received email message, and a plurality of sent entries, some of the plurality of sent entries representing a sent email message; and

display a first single conversation entry amongst the plurality of received and sent message entries in the message collection GUI, the first single conversation entry representing an active instant messaging session between a first and second user.

149. The computer-readable media of claim 148 comprising stored electronic data structures representing executable instructions which, when executed by a processor of a wireless communication device, cause the wireless communication device to:

display a second single conversation entry amongst the plurality of received and sent message entries in the message collection GUI, the second single conversation entry representing an active instant messaging session between the first user and a third user.

150. The computer-readable media of claim 149 comprising stored electronic data structures representing executable instructions which, when executed by a processor of a wireless communication device, cause the wireless communication device to:

display the plurality of received entries, sent entries, first and second single conversation entry as a vertical list of messages in the message collection GUI;

wherein the newest conversation entry of the plurality of conversation entries is displayed higher in the vertical list of messages.

151. The computer-readable media of claim 149 comprising stored electronic data structures representing executable instructions which, when executed by a processor of a wireless communication device, cause the wireless communication device to:

receive instructions to launch the first single conversation entry; and

display an active instant messaging session GUI comprising a plurality of received and sent instant messages between the first and second user.

152. The computer-readable media of claim 149 wherein the some of the plurality of received entries further represent a received SMS message, and some of the plurality of sent entries further represent a sent SMS message.