US 20130290443A1

(19) United States

(12) Patent Application Publication

(10) Pub. No.: US 2013/0290443 A1

(43) Pub. Date: Oct. 31, 2013

Collins et al.

(54) **DISASSOCIATED CONTENT ELECTRONIC MESSAGE SYSTEM AND METHOD**

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(21) Appl. No.: **13/651,909**

(22) Filed: **Oct. 15, 2012**

Related U.S. Application Data

(63) Continuation of application No. 12/605,885, filed on Oct. 26, 2009, now Pat. No. 8,291,026, which is a continuation of application No. 11/401,148, filed on Apr. 10, 2006, now Pat. No. 7,610,345.

(60) Provisional application No. 60/703,367, filed on Jul. 28, 2005.

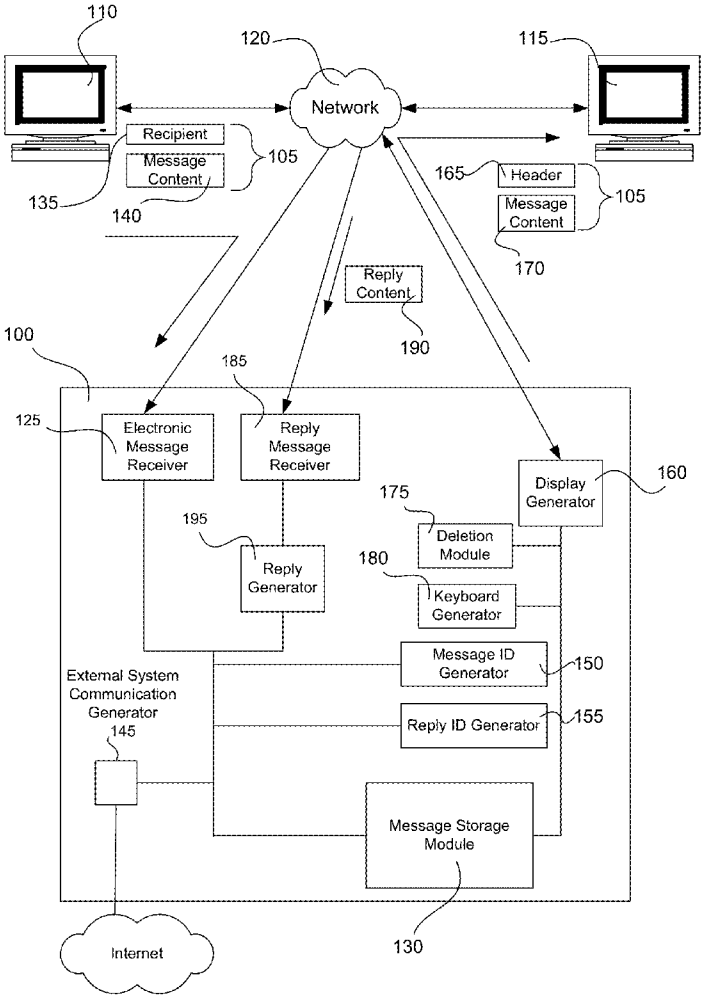
Publication Classification

(51) **Int. Cl.**
H04L 12/58 (2006.01)

(52) **U.S. Cl.**
CPC *H04L 51/18* (2013.01)
USPC **709/206**

(57) **ABSTRACT**

An electronic messaging system and method with reduced traceability. An electronic message is separated into a message content and a message header. The message content and header information are entered by a user separately and transmitted from the user computer separately. The message content and header information are stored and displayed separately throughout the process of entry by a sending user and reading by a recipient user. In yet another implementation, an electronic message is permanently automatically deleted from the system at a predetermined time.



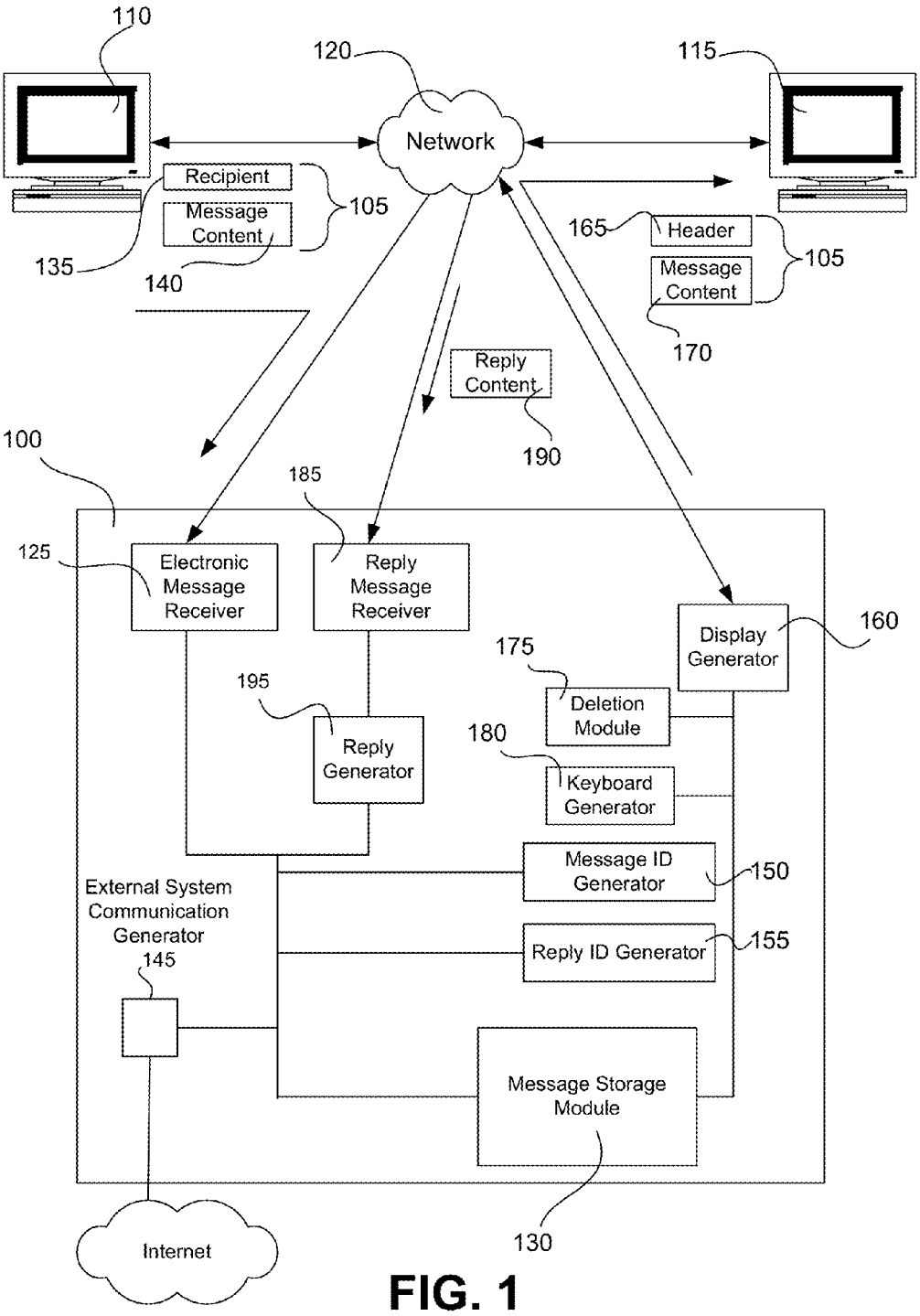

110
120
115
Network
Recipient
Message Content
105
135
140
165
Header
Message Content
105
170
Reply Content
190
100
185
125
Electronic Message Receiver
Reply Message Receiver
Display Generator
160
175
Deletion Module
195
Reply Generator
180
Keyboard Generator
Message ID Generator
150
External System Communication Generator
145
Reply ID Generator
155
Message Storage Module
Internet
130

FIG. 1

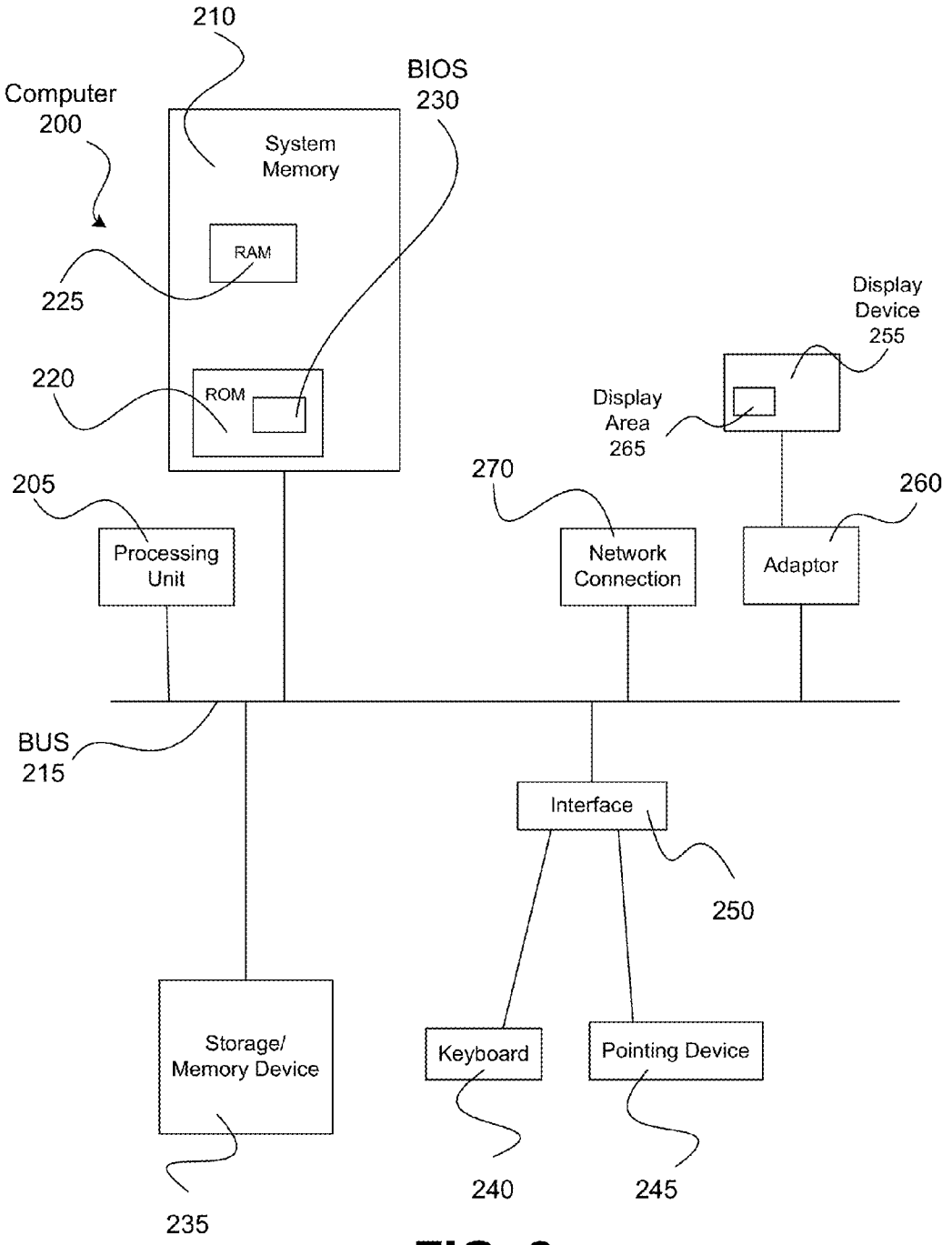

210
Computer
200
BIOS
230
System
Memory
RAM
225
220
ROM
Display
Device
255
Display
Area
265
205
270
260
Processing
Unit
Network
Connection
Adaptor
BUS
215
Interface
250
Storage/
Memory Device
Keyboard
Pointing Device
240
245
235

FIG. 2

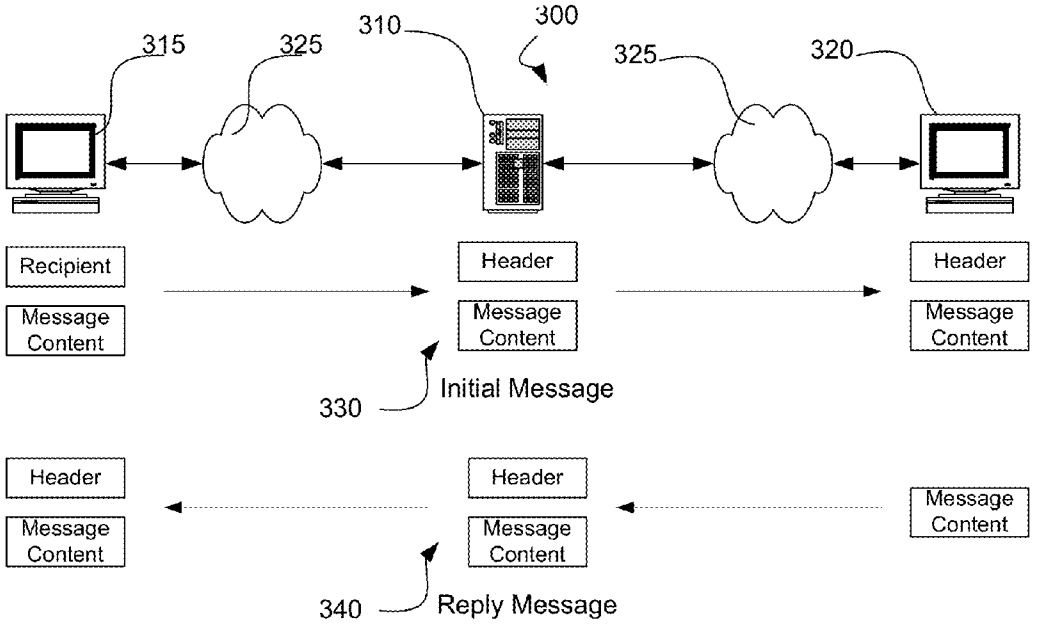

315
325
310
300
325
320
Recipient
Message Content
Header
Message Content
Header
Message Content
330
Initial Message
Header
Message Content
Header
Message Content
Message Content
340
Reply Message

FIG. 3

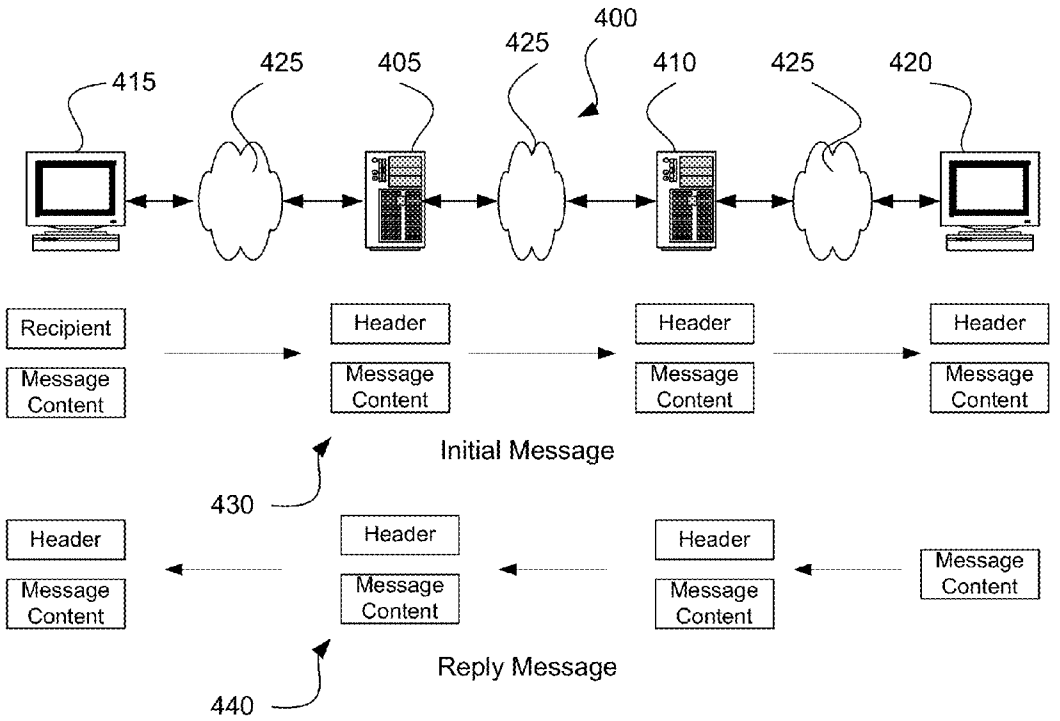

400
415
425
405
425
410
425
420
Recipient
Message Content
Header
Message Content
Header
Message Content
Header
Message Content
Initial Message
430
Header
Message Content
Header
Message Content
Header
Message Content
Message Content
Reply Message
440

FIG. 4

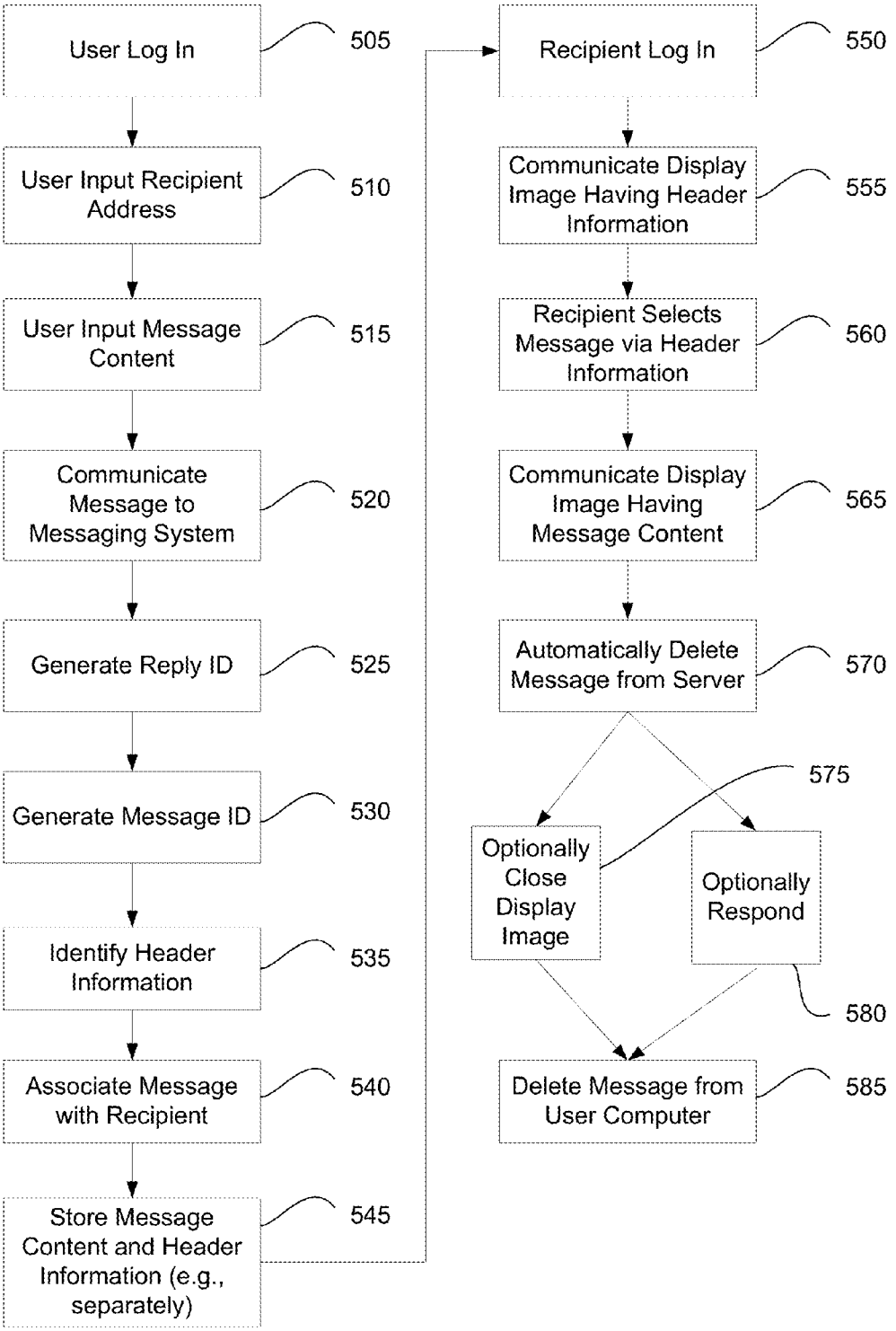

User Log In
505
User Input Recipient Address
510
User Input Message Content
515
Communicate Message to Messaging System
520
Generate Reply ID
525
Generate Message ID
530
Identify Header Information
535
Associate Message with Recipient
540
Store Message Content and Header Information (e.g., separately)
545
Recipient Log In
550
Communicate Display Image Having Header Information
555
Recipient Selects Message via Header Information
560
Communicate Display Image Having Message Content
565
Automatically Delete Message from Server
570
575
Optionally Close Display Image
Optionally Respond
580
Delete Message from User Computer
585

FIG. 5

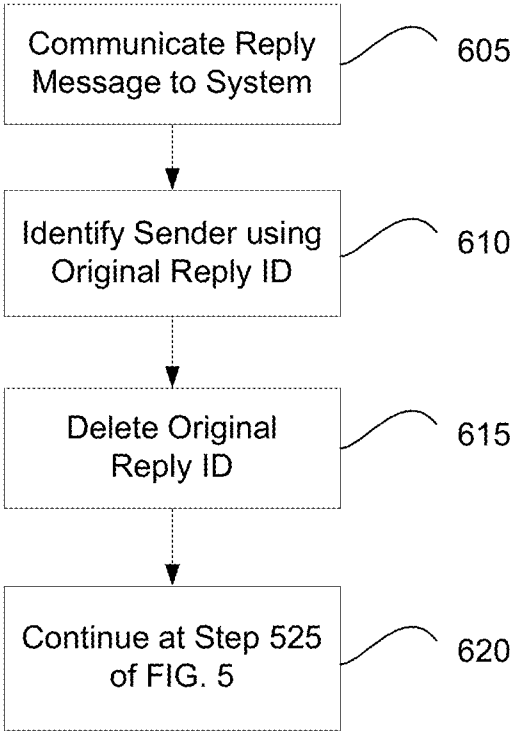

Communicate Reply Message to System
605
Identify Sender using Original Reply ID
610
Delete Original Reply ID
615
Continue at Step 525 of FIG. 5
620

FIG. 6

700

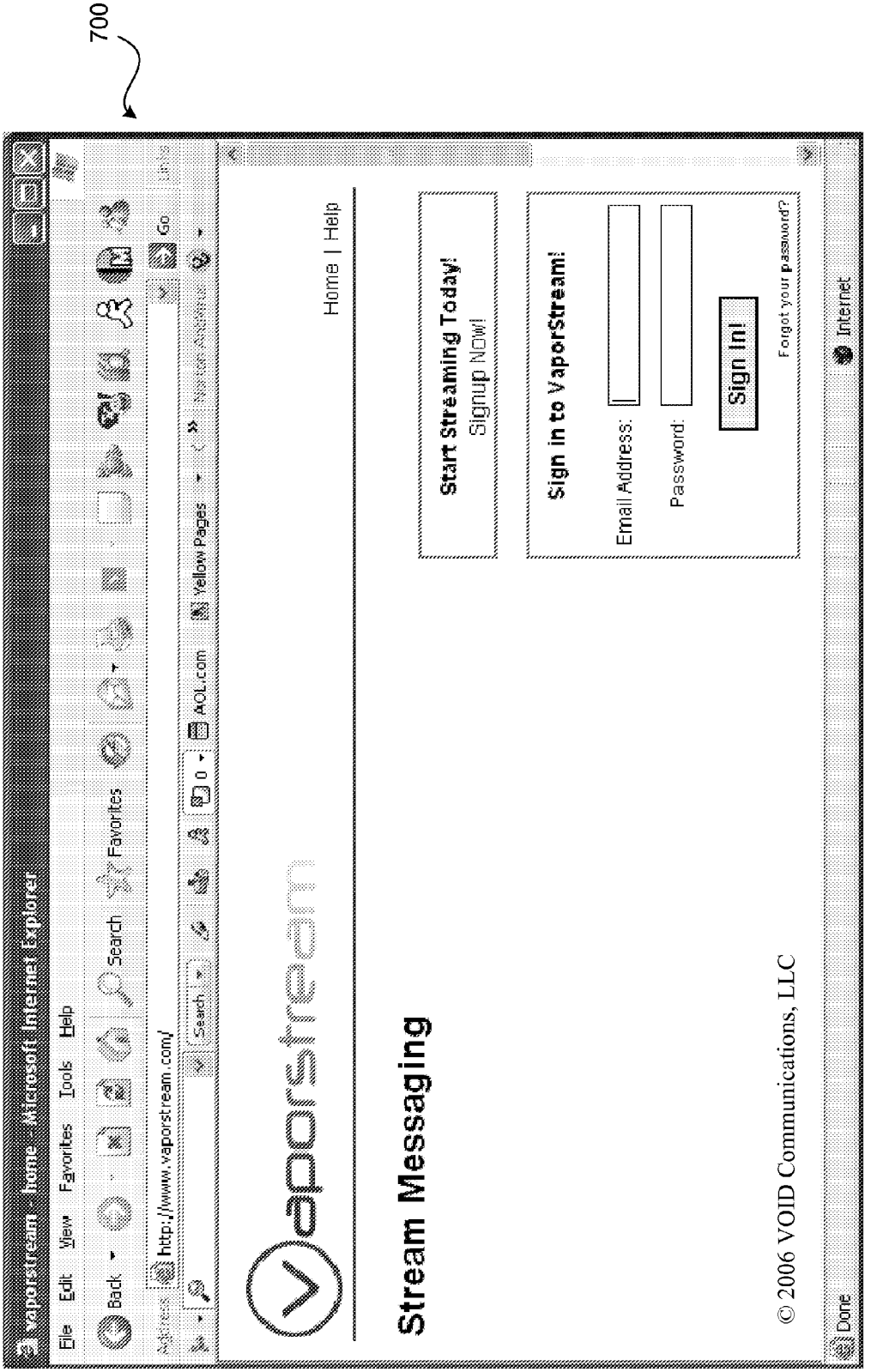

vaporstream - home - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back
Search
Favorites
http://www.vaporstream.com/
Go
Search
AOL.com
Yellow Pages
Home | Help
vaporstream
Stream Messaging
Start Streaming Today!
Signup Now!
Sign in to VaporStream!
Email Address:
Password:
Sign In!
Forgot your password?
© 2006 VOID Communications, LLC
Done
Internet

FIG. 7

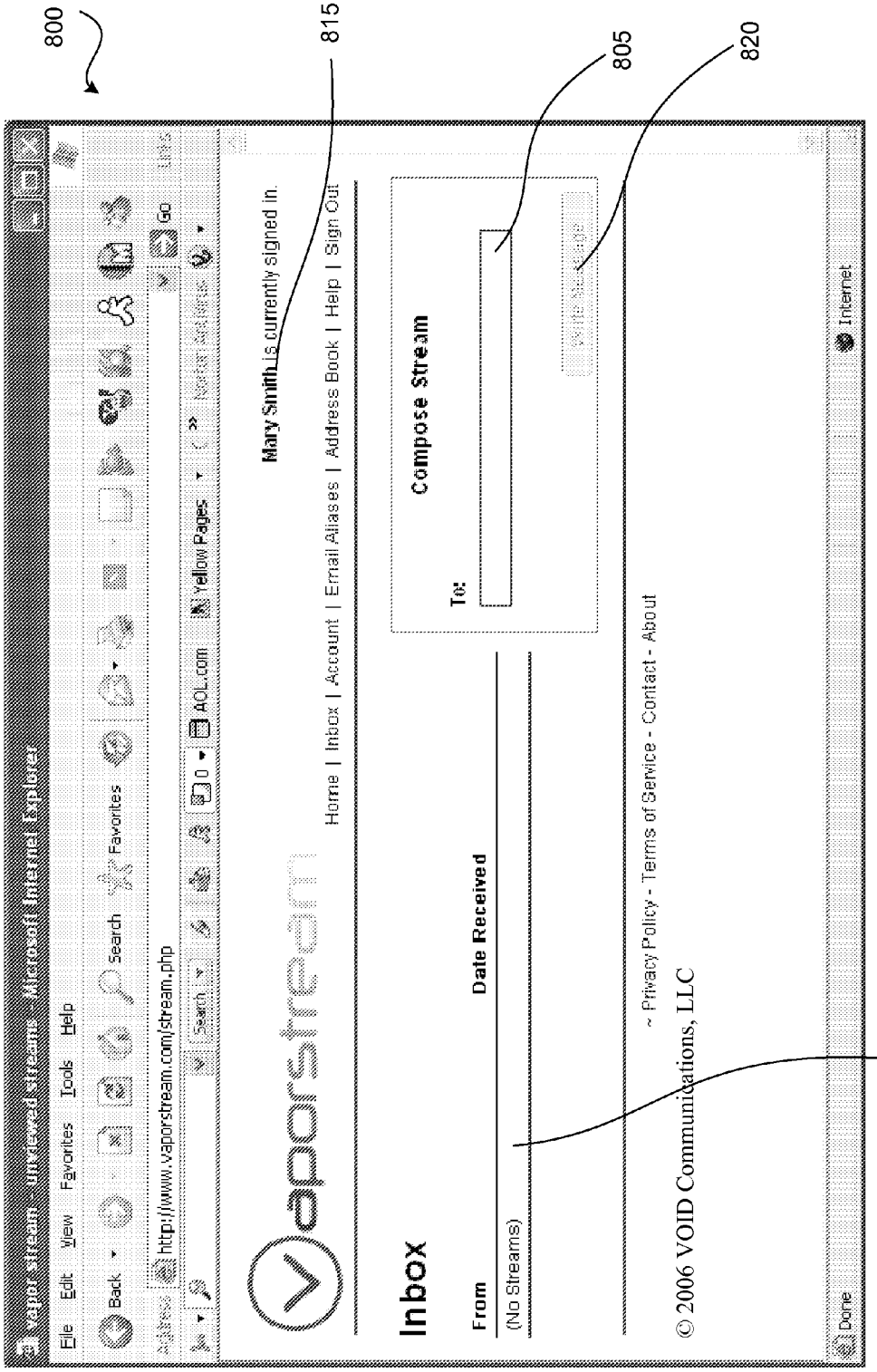

800
815
805
820
810
vapor stream - unviewed streams - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back
Search
Favorites
http://www.vaporstream.com/stream.php
Go
Links
AOL.com
Yellow Pages
Norton AntiVirus
vaporstream
Mary Smith is currently signed in.
Home | Inbox | Account | Email Aliases | Address Book | Help | Sign Out
Inbox
From
(No Streams)
Date Received
Compose Stream
To:
Write Message
~ Privacy Policy - Terms of Service - Contact - About
© 2006 VOID Communications, LLC
Done
Internet

FIG. 8

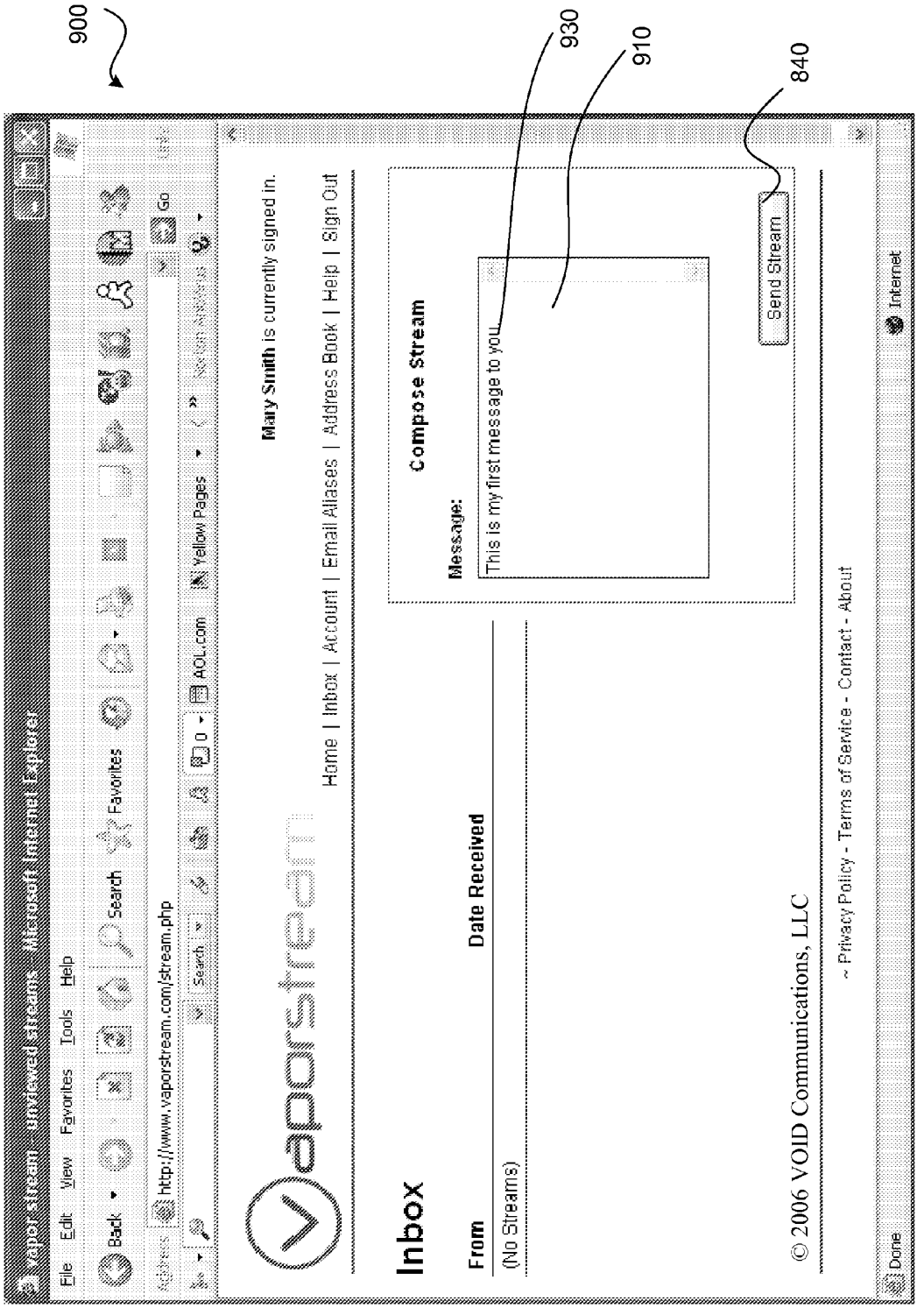

900
930
910
840
vaporstream
Home | Inbox | Account | Email Aliases | Address Book | Help | Sign Out
Mary Smith is currently signed in.
Inbox
From
Date Received
(No Streams)
Compose Stream
Message:
This is my first message to you.
Send Stream
© 2006 VOID Communications, LLC
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FIG. 9

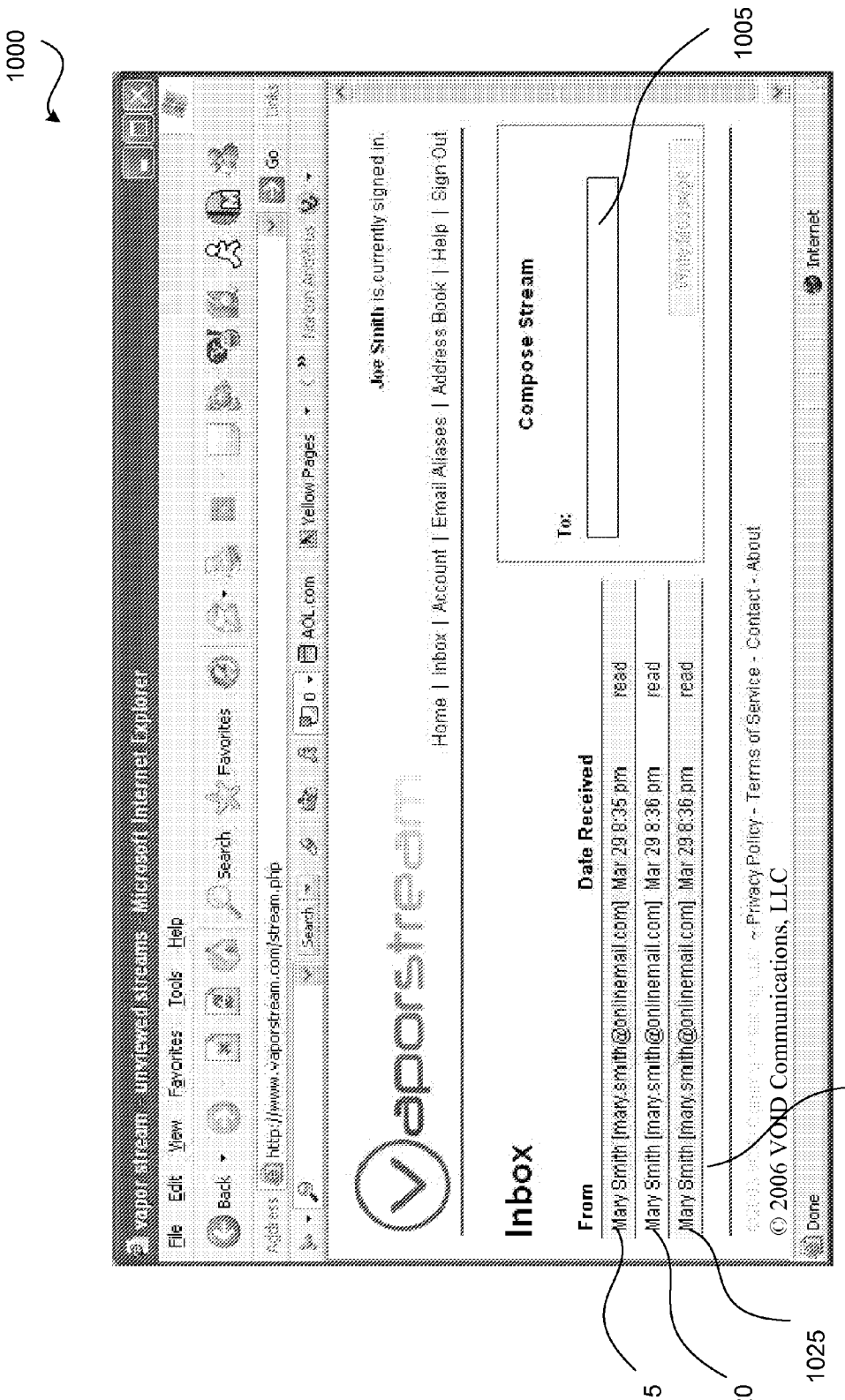
1000
1005
1010
1015
1020
1025
Vaporstream
Joe Smith is currently signed in.
Home | Inbox | Account | Email Aliases | Address Book | Help | Sign Out
Inbox
Compose Stream
To:
From
Date Received
Mary Smith [mary.smith@onlinemail.com] Mar 29 8:35 pm read
Mary Smith [mary.smith@onlinemail.com] Mar 29 8:36 pm read
Mary Smith [mary.smith@onlinemail.com] Mar 29 8:36 pm read
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FIG. 10

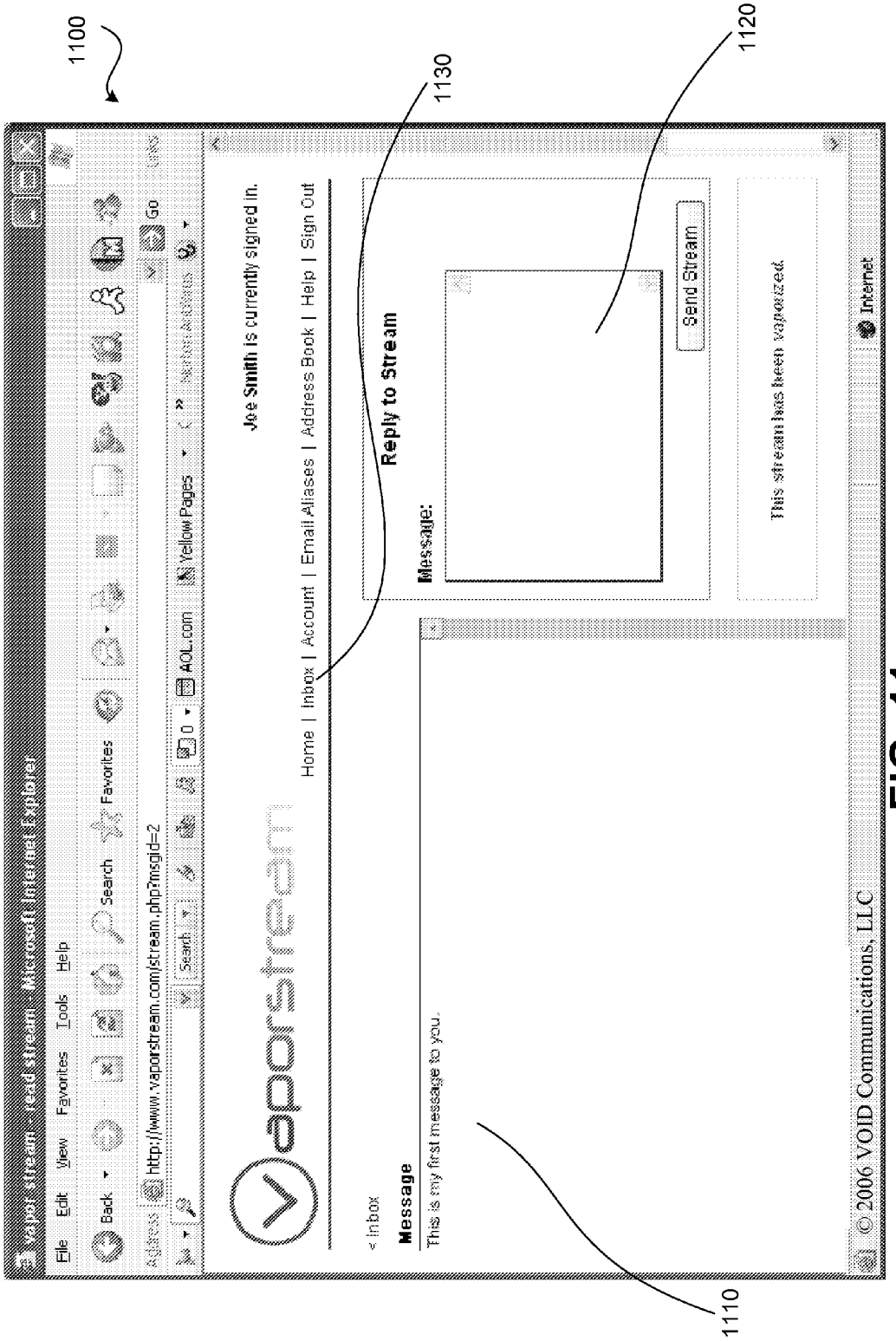
1100
1130
1120
1110
Joe Smith is currently signed in.
Home | Inbox | Account | Email Aliases | Address Book | Help | Sign Out
Reply to Stream
Message:
Send Stream
This stream has been vaporized.
< Inbox
Message
This is my first message to you.
© 2006 VOID Communications, LLC

FIG. 11

DISASSOCIATED CONTENT ELECTRONIC MESSAGE SYSTEM AND METHOD

RELATED APPLICATION DATA

[0001] This application is a continuation application of U.S. patent application Ser. No. 12/605,885, filed Oct. 26, 2009, and titled "Reduced Traceability Electronic Message System and Method For Sending Header Information Before Message Content," now allowed, which is a continuation application of U.S. patent application Ser. No. 11/401,148, filed Apr. 10, 2006, and titled "Reduced Traceability Electronic System and Method," now U.S. Pat. No. 7,610,345, each of which is incorporated by reference herein in its entirety. This application also claims the benefit of priority of U.S. Provisional Patent Application Ser. No. 60/703,367, filed Jul. 28, 2005, and titled "Method and System for Reducing Traceability of Electronic Messages," which is incorporated by reference herein in its entirety.

[0002] This application is also related to commonly-owned U.S. patent application Ser. No. 13/447,932, filed Apr. 16, 2012, and titled "Reduced Traceability Electronic Message System and Method," which is incorporated by reference herein in its entirety.

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FIELD OF THE INVENTION

[0004] The present invention generally relates to the field of electronic messaging. In particular, the present invention is directed to a reduced traceability electronic message system and method.

BACKGROUND

[0005] Typically, an electronic message between two people is not private. It may travel along a public network, such as the Internet, and be susceptible to interception by unintended third parties. Messages are also logged and archived by the communication systems themselves. They may also be copied, cut, pasted, printed, forwarded, blind copied, or otherwise manipulated. This may give a message a "shelf-life" that is often uncontrollable by the sender or even the recipient. Surreptitious logging (e.g., by keystroke and message recording software) may occur by third parties that have gained unauthorized access to either the computer of the sender and/or the recipient. Electronic messages include the message content itself coupled to identifying information regarding the sender, the recipient, the location of the message, times and dates associated with the message, etc. This allows a third party that is logging messages, intercepting messages, or simply gaining access to the messaging system's logs or inbox archives to associate the potentially important identifying information (typically referred to as header information) with the message content. These are only some of the ways in which electronic messages can be misused. There is a demand for a system and method for reducing the traceability of electronic messages.

SUMMARY OF THE DISCLOSURE

[0006] In one implementation, a computer-implemented method of reducing traceability of an electronic message is provided. The method includes a sender-side portion including: receiving an input of a recipient address of an electronic message at a first computer, the recipient address input by a first user; receiving from the first user an input of a message content of the electronic message at the first computer; and associating the recipient address with a message header for the electronic message; an intermediate portion including: transmitting the message header and message content from the first computer to a second computer; a recipient-side portion including: providing a display of the message header via the second computer; and providing a display of the message content via the second computer; wherein the message header and the message content are separated throughout the sender-side, intermediate, and recipient-side portions of the method.

[0007] In another implementation, a computer-implemented method of reducing traceability of an electronic message is provided. The method includes providing at a first computer a first display including a first interface for allowing a first user to input a recipient address of an electronic message; receiving an input of a recipient address by the first user; providing at the first computer a second display including a second interface for allowing the first user to input a message content; receiving a message content of the electronic message, wherein the recipient address and the message content are not displayed at the first computer at the same time; associating the recipient address with a message header for the electronic message; transmitting the message header and message content separately from the first computer to one or more server computers; storing the message header and message content at the one or more server computers such that the message header and message content are stored separately; transmitting the message header and message content separately from the one or more server computers to a second computer; providing at the second computer a third display including the message header; and providing at the second computer a fourth display including the message content, the third and fourth displays not being displayed at the same time; wherein the message header and message content are not allowed to be displayed at the first computer or the second computer at the same time, are stored separately, and are transmitted from the first computer to the second computer separately.

[0008] In yet another implementation, a computer readable hardware storage medium containing computer executable instructions implementing a method of reducing traceability of an electronic message is provided. The instructions include a set of instructions for receiving an input of a recipient address of an electronic message at a first computer, the recipient address input by a first user; a set of instructions for receiving from the first user an input of a message content of the electronic message at the first computer; and a set of instructions for associating the recipient address with a message header for the electronic message; a set of instructions for transmitting the message header and message content from the first computer to a second computer; a set of instructions for providing a display of the message header via the second computer; and a set of instructions for providing a display of the message content via the second computer; wherein the message header and message content are not allowed to be displayed at the first computer or the second

computer at the same time, are stored separately, and are transmitted from the first computer to the second computer separately.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] For the purpose of illustrating the invention, the drawings show aspects of one or more embodiments of the invention. However, it should be understood that the present invention is not limited to the precise arrangements and instrumentalities shown in the drawings, wherein:

[0010] FIG. **1** illustrates one example of a schematic diagram of an exemplary system for electronic messaging depicting an initial electronic message being communicating from one user to another;

[0011] FIG. **2** illustrates one example of a computer environment that may be utilized to implement various aspects of the present disclosure;

[0012] FIG. **3** illustrates another example of a schematic diagram of another exemplary system and method of the present disclosure;

[0013] FIG. **4** illustrates another example of a schematic diagram of another exemplary system and method of the present disclosure;

[0014] FIG. **5** illustrates one example of a flow chart depicting one exemplary method according to the present disclosure;

[0015] FIG. **6** illustrates another example of a flow chart depicting another exemplary method according to the present disclosure;

[0016] FIG. **7** depicts an exemplary login display image;

[0017] FIG. **8** depicts an exemplary display image including a recipient address input portion;

[0018] FIG. **9** depicts an exemplary display image including an electronic message content input portion;

[0019] FIG. **10** depicts an exemplary display image including an electronic message listing portion; and

[0020] FIG. **11** depicts an exemplary display image including a reply message input portion.

DETAILED DESCRIPTION

[0021] The present disclosure provides a system and method reducing traceability of an electronic message. In one embodiment, header information and message content of an electronic message are displayed by a system and method of the present disclosure so that header information and message content are not displayed at the same time. As will be clear to one skilled in the art from the disclosure below, separation of header information from message content reduces the traceability of the electronic message. To further reduce traceability of an electronic message, header information may be automatically deleted at a first predetermined time and message content may be automatically deleted at a second predetermined time (e.g., after message content is viewed). In one example, the first and second predetermined times may occur sequentially (e.g., deleting header information upon displaying message content and deleting message content upon closing a display of message content), simultaneously (e.g., deleting message content and associated header information upon closing a display of message content), or out of order such that the second predetermined time occurs before the first predetermined time (e.g., displaying message content first, deleting message content, displaying header information, then deleting header information). These and other aspects of the present disclosure will be described in greater detail below with respect to various exemplary embodiments illustrated in FIGS. **1** to **11**.

[0022] FIG. **1** illustrates one embodiment of a system **100** for electronic messaging depicting an electronic message **105** being sent from one user to another. System **100** may include any number of computers, such as the two user computers **110** and **115**, coupled to a network **120**. Network **120** facilitates communication between computer **110** and computer **115**. In one example, system **100** may be a closed system that may utilize open network structures (e.g., the Internet) for communication with users, but that does not utilize open or third-party messaging systems (e.g., industry standard email) that may increase the chance of message logging and impact the recordless nature of an electronic message of the present disclosure. System **100** allows users of computers **110** and **115** to communicate with each other via one or more electronic messages, such as electronic message **105** over network **120**. As will be described in further detail hereinafter, several aspects of system **100** reduce traceability of electronic messages, such as electronic message **105**. In one example, electronic message **105** is automatically deleted from system **100** after it is viewed by the recipient to ensure that electronic message **105** cannot be forensically recreated and to ensure there is no record of electronic message **105** ever existing on system **100** thereafter.

[0023] Although computers **110** and **115** are illustrated as workstation computers, any well known computer may be utilized in creating and/or viewing electronic messages. Example computers include, but are not limited to, a personal computer, a workstation computer, a server computer, a laptop computer, a handheld device, a mobile telephone, a personal digital assistant (PDA), another computing device capable of communicating an electronic message via network **120**, and any combinations thereof. System **100** may include one or more server computers. In one example, system **100** may reside substantially on a single server computer. In another example, system **100** may be distributed across two or more server computers. In yet another example, system **100** may be distributed across a plurality of user computers without a server computer, such as in a peer-to-peer environment. In one such example, components of a messaging system according to the present disclosure and/or their functionality (e.g., storage of header information and message content, display generation, reply generation, etc.) may occur at a recipient's user computer In still another example, system **100** may be distributed across one or more server computers and one or more user computers. One or more relay servers or other systems may be utilized between server computers and/or user computers.

[0024] FIG. **2** illustrates one example of a computing environment in the exemplary form of a computer **200** within which a set of instructions, for causing the computer to perform any one of the methodologies of the present disclosure, may be executed. Computer **200** may include a processing unit **205**, a system memory **210**, and a system bus **215** that couples various components including system memory **210** to processing unit **205**. System bus **215** may be any of several types of bus structures including, but not limited to, a memory bus, a memory controller, a peripheral bus, a local bus, and any combinations thereof, using any of a variety of bus architectures. System memory **210** may include a read only memory (ROM) **220** and a random access memory (RAM) **225**.

[0025] A basic input/output system **230** (BIOS), including basic routines that help to transfer information between elements within computer **200**, such as during start-up, may be stored in ROM **220**. Computer **200** may also include a storage/memory device **235** for reading and/or writing information. Example storage devices include, but are not limited to, a hard disk drive for reading from and/or writing to a hard disk, a magnetic disk drive for reading from and/or writing to a removable magnetic disk, an optical disk drive for reading from and/or writing to an optical media (e.g., a compact disc), and any combinations thereof. Storage/memory device **235** may be connected to bus **215** by an interface. In one example, storage/memory device **235** and associated computer-readable media provide nonvolatile storage of computer readable instructions, data structures, program modules, and/or other data for computer **200**. It will be appreciated by those skilled in the art that other types of computer-readable media that can store data that is accessible by a computer in a volatile and/or non-volatile manner may also be used in an example operating environment. Examples of other types of computer-readable media include, but are not limited to, a magnetic cassette, a flash memory media (e.g., a card and a thumb-drive), a digital video disk, a Bernoulli cartridge, a random access memory (RAM), a read only memory (ROM), and any combinations thereof. A computer-readable medium, as used herein, is intended to include a single medium as well as a collection of physically separate media, such as, for example, a collection of compact disks or one or more hard disk drives in combination with a computer memory.

[0026] A number of program modules can be stored on storage/memory device **235**, including, but not limited to, an operating system, one or more application programs, other program modules, program data, computer implemented instructions for carrying out the system and methodologies of the present disclosure, and any combinations thereof. A user may enter commands and information into computer **200** through one or more input devices, such as a keyboard **240** and/or a pointing device **245**. Other examples of an input device include, but are not limited to a microphone, a joystick, a game pad, a satellite dish, a scanner, and any combinations thereof. These and other input devices may be connected to processing unit **205** through an interface **250** that is coupled to bus **215**. Example interfaces for connecting an input device include, but are not limited to, a serial interface, a parallel interface, a game port, a universal serial bus (USB), an IEEE 1394 (Firewire) interface, a direct interface to system bus **215**, and any combinations thereof.

[0027] A display device **255** may be connected to system bus **215** via an interface, such as a display generator/video adaptor **260**. Example display devices include, but are not limited to, a cathode-ray tube (CRT) monitor, a plasma display, an LCD display, and any combinations thereof. In addition to a display device, a computer may include one or more other peripheral output devices, such as a speaker and a printer. A pen digitizer and an accompanying pen/stylus may be included in order to digitally capture freehand input. A pen digitizer may be separately configured or coextensive with a display area **265** of display device **255**. Accordingly, a pen digitizer may be integrated with display device **255**, or may exist as a separate device overlaying or otherwise appended to display device **255**.

[0028] Computer **200** may include a network connection **270** for connecting to one or more of a variety of networks, such as network **120** of FIG. **1**, and remote computer devices thereon. Example network connections may include, but are not limited to, a network interface card, a modem, and any combinations thereof. Example networks include, but are not limited to, a wide area network (e.g., the Internet, an enterprise network), a local area network (e.g., a network associated with an office, a building, a campus or other relatively small geographic space), a telephone network, a direct connection between two computing devices, and any combinations thereof. A network, such as network **120** may employ a wired and/or a wireless mode of communication. In general, any network topology may be used. It will be appreciated that FIG. **1** depicts only one instance of a system **100**, and that other instances may be created where one or more computers utilize system **100**. One or more communication protocols may be utilized with system **100** and/or with network **120**. Example protocols include, but are not limited to, TCP/IP, Ethernet, FTP, HTTP, HTTPS, and any combinations thereof. In one example, a user of a computer, such as computers **110**, **115** may access system **100** (e.g., on one or more server computers) utilizing a secure protocol as is well-known. A user computer, such as computers **110**, **115** may utilize one or more software applications and/or one or more system based applications in communicating with system **100**. Example software applications include, but are not limited to, a web browser (e.g., INTERNET EXPLORER, MOZILLA, and NETSCAPE), Java (e.g., J2ME), BREW, a direct access client (e.g., CITRIX), and any combinations thereof. Example system applications include, but are not limited to, MICROSOFT WINDOWS, UNIX, LINUX, APPLE operating system, X-WINDOWS, COCOA, POCKETPC, and PALM.

[0029] Referring to FIG. **1** an exemplary electronic message **105** is communicated by a sending user utilizing computer **110** to system **100** for further communication to a recipient user. Exemplary system **100** includes an electronic message receiver **125** for receiving one or more electronic messages, such as electronic message **105**. Electronic message receiver **125** is in communication with an electronic message storage module **130**. An electronic message storage module, such as electronic message storage module **130**, stores electronic messages received by electronic message receiver **125** utilizing one or more particular data storage methodologies. Many data storage methodologies will be recognized by those skilled in the art and those chosen for use with an electronic message storage module according to the present disclosure may be based on the particular implementation of the messaging system and method. Example data storage methodologies may include, but are not limited to, one or more tables, a database, a file system, and any combinations thereof. In one example, as will be described in greater detail below, electronic message storage module **130** stores header ("container") information and message content separate from each other to minimize correlation by a third party between identifying information regarding the electronic message (e.g., identification of sender, recipient, date/time of message, location of message) in the header information and the content of the message. In an alternate example, message content and header information may be stored together and separated during display. In one embodiment of the present disclosure, header information and message content are never stored or displayed together. In such a case, a correlation (e.g., a non-identifying message ID described in detail below) may be utilized to associate the two components.

[0030] Electronic message **105** as communicated to system **100** in the example of FIG. **1** includes a recipient address **135** and a message content **140**. A recipient address, such as recipient address **135** may be an indicator that identifies a particular desired recipient of an electronic message, such as electronic message **105**. In one example, a recipient address may be a unique identifier (e.g., a screen name, a login name, a messaging name, etc.) established specifically for use with system **100** at user registration with the system. In another example, a recipient address may be a pre-established electronic mail (email) address, text messaging address, instant messaging address, Short Messaging Service (SMS) address, a telephone number (e.g., a home, work, mobile telephone number), BLACKBERRY personal identification number (PIN), or the like, that is associated with the recipient and provided by a third-party provider. Example third-party providers include, but are not limited to, a web-based commercial fee and fee-free provider (e.g., YAHOO, HOTMAIL, AMERICA ONLINE, etc.), an Internet service provider (e.g., AMERICA ONLINE, MSN, cable operator, telephone company, etc.), a telephone provider (e.g., VERIZON, CINGULAR, etc.), BLACKBERRY provider, an employer, an educational institution, and other email providers. The third-party address may be chosen by a user as their unique identifier at registration. In an alternative embodiment, a sending user may know a third-party address of an intended recipient and use it as a recipient address when generating electronic message **105**. In such an embodiment, it is possible that the intended recipient is not a registered user of system **100**. In one example, system **100** may optionally include an external system communication generator **145** configured to send a notification message to the third-party system associated with the recipient address used with electronic message **105**. External system communication generator **145** is in communication with the appropriate network for communication with the corresponding third-party address for delivering the notification message. In one example shown in FIG. **1**, external system communication generator **145** is shown connected to the Internet. In one example, a notification message may include an indication that someone has sent the desired recipient an electronic message on system **100** and that the intended recipient may register to use system **100**. The notification message may include directions (e.g., a hyperlink) to a publicly available portion of system **100** for registration.

[0031] An electronic message may be any electronic file, data, and/or other information transmitted between one or more user computers. An electronic message may include (e.g., as part of a message content) any of a wide variety of information including, but not limited to, text, an image, video (e.g., single play video utilizing an application, such as MACROMEDIA FLASH), binary, tabular data (e.g., a spreadsheet), rich text including variable font color, tables, etc.), audio (e.g., single play audio utilizing an application, such as MACROMEDIA FLASH), other types of data, and any combinations thereof. In one example, a message content of an electronic message may include embedded information. In another example, a message content of an electronic message may include an attached and/or linked file. In such an example with an attached and/or linked file, the attached and/or linked file may be automatically deleted from the messaging system after being viewed by a recipient. Typically, a message content, such as message content **140** does not include information that in itself identifies the message sender, recipient, location of the electronic message, or time/date associated with the electronic message.

[0032] System **100** may optionally include a message ID generator **150**. As described in further detail below, message ID generator **150** may generate a message ID for each electronic message received by system **100**. The message ID is associated with the corresponding message. A message ID is used to associate a container (i.e., header) information with a corresponding separately-stored message content. In one example, a message ID may be created using a unique 128 bit, randomly generated number. System **100** may include a correlation between header information and message content in a variety of ways including, but not limited to, a database, a lookup table, an entry in a file system, and any combinations thereof. Utilizing a message ID associated with an electronic message, such as electronic message **105**, system **100** may handle (e.g., store, deliver, display, etc.) a header information and a message content of a particular electronic message separately with the ability to correlate the two at a later time. Thus, a message content may be handled without any of the identifying header information. A message ID may contain unique and/or non-unique information. For example, a message ID may include a sequence number (e.g., 1, 2, 3, 4, etc.) identifying a number of a message amongst a group of messages. A sequence number may be re-used. For example, when an electronic message with a sequence number of "1" is viewed and subsequently deleted, sequence numbers for remaining electronic messages may be adjusted so that the electronic message having sequence number "2" is renumbered to number "1" and so forth. In another example, a message ID may include a sequence number and a unique user identifier (e.g., a user ID, a login ID, etc.).

[0033] System **100** may optionally include a reply ID generator **155**. As described further below, reply ID generator **155** generates a reply ID for each electronic message received by system **100**. The reply ID associates an electronic message, such as electronic message **105**, with the sender of the electronic message. In one example, a reply ID may include no information that in itself would identify a sender of an electronic message to a third party that does not have access to the correlation maintained by the messaging system. System **100** may include a correlation between a reply ID and a corresponding message sender in a variety of ways, including, but not limited to, a database, a lookup table, an entry in a file system, and any combinations thereof. In one aspect, a reply ID associated with an electronic message allows the header information and/or the message content of the electronic message to include no information about the sender of the message that itself provides a traceable identity of the sender. As described in more detail below, a recipient may still send a reply electronic message to the original sender. Additionally, a third-party that may intercept, log, or otherwise come in possession of the header information and/or the message content will not be able to trace the electronic message to the sender without also gaining access to the correlation maintained by system **100**. A reply ID may include a variety of different identifiers that allow a messaging system, such as system **100**, to direct a reply electronic message back to a sender of the original electronic message. In one example, a reply ID may be created using a randomly generated number (e.g., a 128 bit, randomly generated number).

[0034] System **100** includes a display generator **160** in communication with electronic message storage module **130**. Display generator **160** is configured to provide information

representing a display image for display on a user computer, such as user computers **110**, **115**. Example display images include, but are not limited to, a user login display, a display listing information representing available electronic messages for viewing, a display for entering an electronic message, a display of a message content of an electronic message, a display for entering a reply electronic message, and any combinations thereof. In one example, display generator **160** may be configured to utilize a message ID in generating a first information **165** representing a first display image including at least some of the header information for electronic message **105**. Display generator **160** may also be configured to generate a second information **170** representing a second display image including message content **140** of electronic message **105**. FIG. **1** illustrates first and second information **165**, **170** communicated with computer **115** for display to a recipient user. In this example, display generator **160** generates first and second information **165**, **170** in a manner that does not allow the first and second display images to be displayed at the same time. Separate display of header information and message content for an electronic message reduces traceability of the electronic message. In one aspect, screenshot logging at a computer, such as computer **115**, may not capture both header information and message content simultaneously. Additionally, separation of header information and message content physically and/or temporally during communication to a user computer over an open network, such as the Internet, can thwart misuse of the electronic message by reducing the ability of intercepting both components of the electronic message.

[0035] Display generator **160** may utilize any of a variety of well known display generation methodologies and/or protocols for creating information representing a displayable image. Example methodologies/protocols include, but are not limited to, hypertext markup language (HTML), extensible markup language (XML), direct graphic generation, and any combinations thereof. In one example, system **100** resides on one or more server computers and display generator **160** includes and/or utilizes a web server application to generate information representing web-browser-displayable images that may be viewed by a user computer including a web browser. In another example, display generator **160** may be configured to instruct a browser or other application of a user computer displaying a display image according to the present invention to not cache any of the information related to the display image.

[0036] System **100** may further include a deletion module **175** in communication with electronic message storage module **130**. Deletion module **175** is configured to delete header information and/or message content from system **100** after a predetermined amount of time. In one example, deletion module **175** is configured to automatically delete header information and corresponding message content immediately after the message content is displayed. In another example, a deletion module (e.g., deletion module **175**) is configured to automatically delete header information upon display of a corresponding message content. In yet another example, a deletion module (e.g., deletion module **175**) is configured to automatically delete message content upon a display of the message content being closed. In still another example, a deletion module is configured to automatically delete header information and/or message content, whether or not they have been viewed, after a predetermined time (e.g., twenty-four hours after being received). In still yet another example, a deletion module is configured to automatically delete header information and/or message content a predetermined time (e.g., twenty-four hours) after first being displayed. In a further example, a predetermined amount of time may include a predetermined number of viewings (other than a single viewing) of a particular electronic message (e.g., an electronic message is deleted after 20 views). In still a further example, a deletion module (e.g., deletion module **175**) is configured to automatically delete header information upon display of a corresponding message content and to automatically delete message content upon a display of the message content being closed. Combinations of deletion protocols, such as these examples, are also contemplated.

[0037] In an alternate embodiment, system **100** may include a display-based keyboard generator **180**. Display-based keyboard generator **180** is configured to generate a display-based keyboard that may be included with a display image generated by display generator **160**. A display-based keyboard can be utilized by a user (e.g., through mouse click or touch screen depression) to input information (e.g., username, password, recipient address, message content) without the use of the standard keyboard associated with the user computer. In this way interception by keyboard (keystroke) logging hardware and/or software resident on the user computer, such as computers **110**, **115**, can be avoided. In one example, a display-based keyboard generator may utilize FLASH technology commercially available from Macromedia Inc. In another example, a display-based keyboard generator may utilize Java technology commercially available from Sun Microsystems. In one aspect a FLASH-based keyboard may randomly place spaces between characters in the on-screen keyboard to further prevent interception of the message. Although this is a relatively slow data entry method, a user can be more assured that their information is not being logged and/or intercepted.

[0038] System **100** may also optionally include a reply message receiver **185**. Reply message receiver **185** is configured to receive a reply message to one or more original electronic messages viewed by a recipient. In one aspect, a sender of an original electronic message may be determined from an identifying characteristic included, or associated, with the electronic message. Example identifying characteristics include, but are not limited to, a reply ID, an email address, a username, a display name, login ID, and any combination thereof. In one example, a reply ID of the original electronic message may be utilized in generating a reply message. In one example, a reply message as communicated by computer **115** to system **100** need only include a message content **190**. System **100** may include a reply generator **195**. Reply generator **195** may be configured to utilize the original reply ID to associate message content **190** and any corresponding header information with the original electronic message sending user. Message ID generator **150** may be configured to generate a message ID for the reply electronic message (i.e., message content **190** and corresponding header information). Reply ID generator **155** may be configured to generate a new reply ID for the reply message and electronic message storage module **130** may store message content **190** and corresponding header information separately for later display to the user (original sender).

[0039] FIG. **1** illustrates only an exemplary embodiment of a messaging system and networking environment according to the present disclosure. As will be appreciated by those skilled in the art and as described herein, variations to system

100 and the network environment may be utilized in implementing the various aspects and methodologies of the present disclosure. FIGS. 3 and 4 illustrate alternate computing environments. FIG. 3 illustrates one embodiment of a messaging system 300 according to the present disclosure. System 300 includes a computing environment having a single server computer 310. User computers 315 and 320 communicate with server computer 310 via network 325. An electronic message 330 is communicated utilizing system 300. A reply electronic message 340 is also illustrated. FIG. 4 illustrates another embodiment of a messaging system 400 according to the present disclosure. System 400 includes a computing environment having two server computers 405, 410. User computers 415 and 420 communicate with server computers 405, 410 via network 425. An electronic message 430 is communicated utilizing system 400. A reply electronic message 440 is also illustrated. Server computers 405, 410 together perform the functionality of the single server computer 310 of FIG. 3.

[0040] Referring to FIGS. 3 and 5, an exemplary operation of a messaging system according to the present disclosure, such as system 300, can be described. A user may log into system 300 at computer 315 (step 505 of FIG. 5). For example, a user may access a web site or other networked interface associated with server 310. Server 310 may then provide information representing a display image (e.g., a web page) for display on computer 315 that allows the user to log into the system. In one aspect, a user of system 300 may have associated therewith a login ID and password for logging into system 300. FIG. 7 depicts an example login display 700 that may be used. In one aspect, system 300 may provide an instruction to a browser or other application on computer 315, or other computer viewing a display image according to the present disclosure, to not cache the information contained in the display image. Upon entry of a valid login ID and password, server 310 establishes a communications link with computer 315 (e.g., a key infrastructure, secure sockets layer (SSL), secure HTTP (HTTPS) or other secure or non-secure communications link). In one example, system 300 may utilize an email address as a login ID.

[0041] In one aspect, while a user is logged into system 300, a session may be established including the establishment of a session ID. A session and a corresponding memory may be utilized by system 300 to maintain certain information regarding the session and the user (e.g., user's identification information, a reply ID).

[0042] Upon proper login, the user may be presented with a session starting display image. One of skill in the art will appreciate that a variety of starting display images (i.e., pages) may be available for display to a user upon initial login to system 300. In one example, a display image for inputting an electronic message may be displayed. FIG. 8 illustrates one example of a starting display image 800. Display image 800 includes a first portion 805 for entering a recipient address or other identifier for one or more recipients of a message. Display image 800 also illustrates an "inbox" portion 810 for listing unread electronic messages on the system for the logged in user. In this example, an optional display name 815, "Mary Smith" for the logged in user is displayed. A display name may be the same or different from a corresponding login name and/or user address, and may or may not include identifying information regarding the user.

[0043] Upon entering a recipient address (step 510 of FIG. 5) and activating a button 820 or other trigger, a message content display screen, such as message content display screen 900 of FIG. 9 may be displayed. Display screen 900 includes a first portion 910 for inputting (step 515 of FIG. 5) a message content corresponding to the recipient address input at portion 805 of FIG. 8. In this example, the recipient address and the message content are entered on separate display screens.

[0044] In another example, the recipient address and message content may be input on a single display image screen. Separation of the entry of the recipient address and message content further reduces the traceability of an electronic message by, in part, reducing the ability of logging at computer 315.

[0045] In an alternative embodiment, a display-based keyboard (as discussed above) may be included in an electronic message input displays, such as display images 700, 800, and 900. A user may use a mouse or other pointing device (e.g., a touchscreen display) to select characters being entered.

[0046] FIG. 9 illustrates an example message content 930 having been entered in portion 910. Upon completion of message content entry, a user may select button 840, or other indicator, to communicate message content 930 to server 310 (step 520 of FIG. 5). In one example, the recipient address may be communicated to server 310 separately from a corresponding message content at the time of entry. This may reduce the ability to intercept the entire electronic message during communication to server 310. In another example, the recipient address may be retained at computer 315 until the entry of corresponding message content in a subsequent display image. In one example, upon communication of the recipient address and message content 930, computer 315 retains no trace of the either the recipient address or message content 930. For example, each may exist only in random access memory (RAM), and possibly in virtual memory (e.g., a page file) established in a disk drive, at computer 315 from the time the user types the information until the loading of the next display image at computer 315, after which the information is effectively deleted. Referring to FIG. 3, electronic message 330 is illustrated as including a recipient address and message content that is communicated from computer 315 to server 310.

[0047] In an alternate embodiment, upon server 310 receiving electronic message 330, instructions associated with system 300 (e.g., instruction stored at server 310) generates a reply ID and associates the reply ID with electronic message 330 (step 525 of FIG. 5). Server 310 maintains a correspondence between the reply ID and the sending user. In one example, a new reply ID is created for each electronic message regardless of whether the sending user is the same as another electronic message. This enhances the reduced traceability of the electronic message.

[0048] In another alternate embodiment, at step 530, system 300 generates a message ID for associating the separated message content and header information of electronic message 330. Server 310 maintains a correspondence between the message content and header information.

[0049] At step 535, header information associated with electronic message 330 is identified for separation from message content 930. In one aspect, separation of information that identifies the sending user, recipient user, location of the electronic message, timing of electronic message from the message content may be implemented by associating such information with a container or header information component of the electronic message. In one example, utilization of

a reply ID and a message ID can further facilitate the removal of information that itself identifies a sending user or recipient. A display name for the sending user may be generated and associated with the header information. The display name for the user need not be unique, thus maintaining the anonymity of the user when electronic message **330** is ultimately communicated to computer **320** or otherwise viewed by the recipient. In one example, system **300** replaces all information associated with electronic message **330** that could itself identify the sending user. In one embodiment, a predetermined display name for the sending user that does not provide unique identification of the sending user may be generated and associated with corresponding header information. In another example, system **300** may utilize a display name that includes information that uniquely identifies the sending user (e.g., login name, email address, etc.).

[0050] In one example, header information for a particular electronic message, such as header information, may include, but is not limited to, a reply ID, a message ID, a date/time associated with the electronic message (e.g., date/time of creation, date/time of delivery, etc.), a display name representing a sender of the electronic message, and any combinations thereof.

[0051] At step **540**, an electronic message **330** is associated with a recipient represented by the recipient address. In one example, a location of the recipient is determined. As used herein, a location may include a message mailbox, a message server associated with the recipient, a computer associated with the recipient, an electronic address of the recipient, a display name for the recipient in system **300**, or the like. For example, system **300** may identify a user by a variety of identities (e.g., display name, login ID, associated email address, text messaging address, instant messaging address, SMS address, mobile number, BLACKBERRY PIN, or the like) to determine a routing for electronic message **330**. As discussed above, if the recipient is not a registered user of system **300**, a notification may be sent to a third-party system of the existence of electronic message **330**. For example, if the recipient is identified by a third-party email address, a notification may go to the e-mail recipient over the third-party email network. Similarly, if the recipient is identified by a Blackberry PIN, a notification may go to the recipient over the Blackberry network.

[0052] At step **545**, header information and message content are stored. In one example, header information and message content are stored separately from each other (e.g., in separate files, in separate databases, in separate tables, etc.). A message ID may be used to maintain a correspondence between the separated components of electronic message **330**. Storage may occur in a variety of ways including, but not limited to, storage at a location of the recipient and storage at server **310**. In one example, the header information and message content of electronic message **330** are stored in a storage medium of server **310** in separate tables.

[0053] In another example, each user of system **310** is assigned a storage directory (e.g., on a server, on a user computer such as in a peer-to-peer arrangement, etc.). Upon association of a user with the recipient address, the message content and header information for any electronic messages to that user may be stored in that user's storage directory. The following XML file definition illustrates an example of header information for two electronic messages stored in a user storage directory.

```
<?xml version="1.0" encoding="UTF-8" ?>
<streams>
<streamsummary id="8C515D3B6A3A99C6C1A1F1DE019C7AB0"
        from="user one" datereceived="1143660969"
        replyid="6C04279318E53F61A9D7984ADD4C3E1A />
<streamsummary id="98F78AD49BFC35B36357850C107460DF"
from="user four
        [mike.smith@onlinemail.com]" datereceived="1143665437"
        replyid="0648B99BE6F9E5AB21F3A163AD242173" />
</streams>
```

[0054] The above file definition includes a message ID ("streamsummary id"), a display name ("from"), date received, and reply ID for each message in the recipients storage directory. Note that as an implementation variation, the sending user of the second message has associated therewith a display name, "user four", which includes a reference to an email address, mike.smith@onlinemail.com. This email address may or may not be associated with an actual email account of a third-party system, and may or may not provide actual identifying information related to the sending user. The following message content XML file is stored separately in the storage directory from the above header information.

```
<?xml version="1.0" encoding="UTF-8" ?>
<message id="8C515D3B6A3A99C6C1A1F1DE019C7AB0"
" subject="">
<text>This is my first message to you.</text>
</message>
```

[0055] The following second message content XML file is stored separately in the storage directory from the header information.

```
<?xml version="1.0" encoding="UTF-8" ?>
<message id="98F78AD49BFC35B36357850C107460DF" subject="">
<text>This is a reply message to your message from Monday.</text>
</message>
```

[0056] Each of the message content XML files includes the corresponding message ID for correlation back to the corresponding header information. Each message content XML file also includes the message content. One skilled in the art would recognize other storage methodologies for separating header information from message content that are consistent with the present disclosure.

[0057] Referring again generally to FIG. **5** at step **550** to describe the retrieval of an electronic message by a user, a recipient user logs into system **300** using computer **320**. A display image similar to that in FIG. **7** may be utilized as a login display. In one example, upon entry of a valid login ID and password, a communication link between computer **320** and server **310** is established. At step **555** of FIG. **5**, a display image having header information is communicated (e.g., from server **310** to computer **320**. System **300** provides a display image to computer **320** representing at least some of the header information associated with any electronic messages associated with the recipient user. FIG. **10** illustrates an example display image **1000** including a recipient address input portion **1005** and a message listing portion **1010**. Message listing portion **1010** includes a list of header information

1015, **1020**, **1025** of three electronic messages. Message listing portion **1010** includes a display name and a date/time received for each of header information **1015**, **1020**, **1025**. Each message container (or header information) **1015**, **1020**, **1025** may also includes an association to a message ID and an association to a reply ID (although, not displayed in display image **1000**). Message content for each electronic message is not displayed via display image **1000**.

[0058] FIG. **3** illustrates header information and a message content for electronic message **330** being communicated to computer **320**. In this example, header information **1015** represents electronic message **330**.

[0059] In an alternate embodiment, the header information communicated to computer **320** may include a sequence number (ex: 1, 2, 3, etc.) assigned to each electronic message associated with a particular user and/or sent to a particular computer. In such an embodiment, each sequence number may be associated in system **300** with the corresponding message ID. The message ID may be removed from the corresponding header information and/or message content. In this manner, system **300** may avoid sending a message ID to a user computer and instead may send the sequence number, which may be reused when a message is deleted and is, therefore, less traceable from the user computer.

[0060] At step **560**, a user may select one of the electronic messages indicated by header information **1015**, **1020**, **1025** (e.g., by selecting a corresponding "read" indicator in message listing **1010**). At the time of selection, the message content for each electronic message may not have been communicated to computer **320**. In one example, message content may be communicated to computer **320** along with corresponding header information (but, not displayed). In another example, message content may be retained at server **310** until a second request from a user is sent to server **310** to view a message content of a particular electronic message. In such an example, computer **320** requests a message content for a selected electronic message (e.g., electronic message **330** via header information **1015**) from server **310**. In response to this action, server **310** may associate a message ID from the selected header information and communicate the message content having the corresponding message ID to computer **320**. Alternatively, where a sequence number is utilized for each electronic message, server **310** associates the sequence number of the selected electronic message with a corresponding message content and communicates the message content to computer **320**.

[0061] At step **565**, a display image including the message content, but none of the header information, is provided at computer **320**. FIG. **11** illustrates one example display image **1100** presenting message content, independent of header information, for electronic message **330** upon the selection of header information **1015** in display image **1000** of FIG. **10**. Display image **1100** includes a message content portion **1110** including the message content of electronic message **330**. Display image **1100** also includes a reply message input portion **1120**.

[0062] In one alternate embodiment, display image **1100** may employ FLASH technology to display the message content. For example, display image **1100** may require the user to "park" the on-screen cursor in an area in display image **1100** to see the message content, which may be displayed as a Flash movie. Should the cursor be moved, the displayed message content will be hidden from view on the screen to allow the user to quickly prevent the message content from being seen by onlookers. Also, this technology may also be utilized to prevent the message content from being printed using the web browser or application print because the message content will be hidden as soon as the user moves the mouse in attempt to print. In another example, the use of Cascading Style Sheets (CSS) may allow the portion of the display image including the message content to be not shown or hidden during printing.

[0063] Referring to FIG. **5**, at step **570**, the electronic message, such as electronic message **330**, is automatically permanently deleted from server **310** at a predetermined time at step **565**. In one example, header information is deleted from server **310** upon its communication to computer **320**, and then the corresponding message content is deleted from server **310** upon its communication to computer **320**. In such an example, once message list **1010** is displayed to a user, the user must view the message content during that session. To achieve the ability to view one message content and return to message list **1010**, the header information for non-viewed electronic messages may be retained in memory at computer **320**. In another example, header information is retained at server **310** until the corresponding message content is viewed, at which point both the header information and the message content is deleted from server **310**. A reply ID for a particular electronic message may be retained in memory of server **310** (e.g., in response to a request for viewing a message content, server **310** may associate a current session ID with the reply ID) until the display image that displays the corresponding message content is closed by the user. This will allow a user to utilize reply message portion **1120** of display image **1100** to reply to the current message content without having to have a unique address for the original sender associated with the message content on computer **320**. FIG. **3** illustrates a server-based system. Deletion from an alternate system, such as a peer-to-peer system, may include deletion of an electronic message from storage at a user computer.

[0064] As discussed above, other examples of deletion times for deletion from a system, such as system **300**, include, but are not limited to, automatic deletion of header information and corresponding message content immediately after the message content is displayed, automatic deletion of header information upon display of a corresponding message content, automatic deletion of message content upon a display of the message content being closed, automatic deletion of header information and/or message content (whether or not they have been viewed) after a predetermined time (e.g., twenty-four hours after being received), automatic deletion of header information and/or message content a predetermined time (e.g., twenty-four hours) after first being displayed, and any combinations thereof. In one example, system **300** is configured to require a given deletion scheme (e.g., automatic permanent deletion of an electronic message upon displaying the electronic message and/or one or more of its components) regardless of a desire of a sending and/or recipient user.

[0065] One example of a deletion algorithm appropriate for deletion of electronic messages from system **300** include, but is not limited to, US Department of Defense (DoD) clearing and sanitizing standard DoD 5220.22-M. In an alternative embodiment, server computer **310** may delete an electronic message, such as electronic message **330** and the corresponding reply ID from its own memory if the recipient fails to retrieve the electronic message within a predetermined amount of time.

[0066] In one example, after viewing the message content, the user may select a button **1130** on display image **1100** to return to the message listing (e.g., message listing **1010** of FIG. **10**), or otherwise close the display image (step **575** of FIG. **5**). In another example, after viewing the message content, the user may choose to respond to electronic message (step **580** of FIG. **5**), as will be described in further detail hereinafter. If the user fails to respond to the message content within a predetermined amount of time (e.g., 1 hour) an associated reply ID may be deleted from server **310**. If the user chooses to return to the listing of messages, the message content may be automatically deleted from the recipient's computer **320** after viewing (step **585** of FIG. **5**). For example, the message content will exist only in RAM, and possibly in virtual memory established in the disk drive, in computer **320** from the time the user views the message content until the loading of the next screen into computer **320**, after which the message is effectively deleted. Furthermore, in one example, the listing of messages (e.g., message listing **1010** of FIG. **10**), will no longer include the header information for a particular electronic message (e.g., header information **1015** of electronic message **330**) that has been deleted from server **310**, and the session ID will no longer include reference to the reply ID. In other words, the user will not be able to view that message again or reply to the message once it has been deleted. For example, FIG. **12** illustrates message list **1010** after electronic message **330** has been deleted from server **310** and computer **320**.

[0067] In an alternative embodiment, electronic messages may be sent, stored, and/or retrieved using encryption technology. Various encryption technologies are known to those skilled in the art. For example, a combination of public and private encryption keys may be utilized by users and the system to further ensure security and reduce traceability of electronic messages until deletion.

[0068] Referring to FIGS. **3** and **6**, operation of system **310** in optionally sending a reply message **340** from user computer **320** to user computer **315** can be described. As shown for example in FIG. **11**, the recipient user of the original electronic message (e.g., electronic message **330**) may choose to reply to the message utilizing reply message input portion **1120**. Reply message input portion **1120** allows a user to input a message content for a reply message. In this example, there is no need to input a recipient address as an original reply ID may be utilized by system **300** in determining the routing of the reply electronic message. After the user completes reply message input portion **1120**, he or she may select the "send stream" button **1140**. In response, computer **320** communicates the reply message content to server computer **310** (step **605** of FIG. **6**). After the reply message content is communicated, computer **320** retains no trace of the message's existence. For example, the message will exist only in RAM, and possibly in virtual memory established in the disk drive, in computer **320** from the time the user types the message until the loading of the next screen into computer **320**, after which the message is effectively deleted. In an alternative embodiment, a display-based keyboard, as discussed above, may be utilized as part of display image **1100** for inputting reply message content.

[0069] In one example, upon receipt of the reply message content, server **310** determines the reply ID for the original message (e.g., from the current session ID), and uses the reply ID to associate the electronic message with the user that sent the original message **330** (step **610** of FIG. **6**). This may be accomplished in a variety of ways including, but not limited to, a lookup table, a database, or the like, which provides a correlation between the reply ID and the sender of the initial message. At step **615**, system **300** then deletes the initial reply ID (e.g., the reply ID for message **330**) from server **310**'s memory. In an alternate embodiment, the identity of the sender of an original electronic message may be determined from another identifier associated with the electronic message (e.g., display name, login ID, associated email address, text messaging address, instant messaging address, SMS address, mobile number, BLACKBERRY PIN, or the like).

[0070] Next at step **620**, the server **310** may generate another reply ID and associate the reply ID with reply message **340** in a similar fashion as discussed above for electronic message **330**. Server **310** may also generate another message ID, which establishes a correlation between the message content of reply message **340** and header information for reply message **340**. Header information and message content for reply message **340** are handled and stored similarly as described above with respect to electronic message **330**. Reply message **340** may be viewed by its recipient in the same manner as original electronic message **330** was viewed.

[0071] Advantageously, the system **300** allows the users of the computers **315** and **320** to have a private conversation over network **325**. After messages, such as electronic message **330** and reply message **340**, are communicated the sender leaves no proof of the message on his or her computer. In one example, after the recipient views the message (or at another predetermined time), the message no longer exists on system **300**, thus ensuring that the message cannot be forensically recreated and ensuring that there is no record of the message remaining on system **300**. In another example, no copies of an electronic message are ever delivered to a user computer. In such an example, only non-caching display images of header information and message content are displayed separately. The header information and message content may be immediately, automatically, and permanently deleted from the system upon display. Once each display image is closed, the information is gone forever. Thus, in this example, there is never a copy on the user computer to be archived, forwarded, copied, pasted, etc. In another aspect, separate display of header information and message content prevents a single screen capture at a user computer from creating a complete record of the electronic message. In yet another aspect, a system and method according to the present disclosure may provide an end-to-end recordless electronic messaging system that upon the deletion of the electronic message leaves no trace of the message content, header information, or the fact that it was created, existed, delivered, viewed, etc.

[0072] FIG. **4** is a schematic diagram depicting a system **400** having an alternative network topology. The embodiment of FIG. **4** is substantially similar to that of FIG. **3**, except that system **400** of FIG. **4** employs two message servers **405** and **410** operably coupled to user computers **415** and **420** by one or more networks **425**. In the embodiment of FIG. **4**, the two message servers **415** and **420** together perform the tasks previously described for the single message server **310** of FIG. **3**. For example, in the method for sending the initial message **330**, message server **405** may perform steps **505** to **535** and a portion of step **540** of FIG. **5**, while message server **410** acts as the "recipient location" and performs a portion of step **540** and steps **545** to **585** of FIG. **5**. It will be appreciated that both servers **405** and **410** may keep track of the reply ID and both servers **405** and **410** delete the message after it has been

passed along. This arrangement is particularly useful where message servers **405** and **410** are each associated with a different enterprise, business organization, LAN, or the like.

[0073] It is to be noted that the above described aspects and embodiments may be conveniently implemented using a conventional general purpose computer programmed according to the teachings of the present specification, as will be apparent to those skilled in the computer art. Appropriate software coding can readily be prepared by skilled programmers based on the teachings of the present disclosure, as will be apparent to those skilled in the software art.

[0074] Such software can be a computer program product which employs a storage medium including stored computer code which is used to program a computer to perform the disclosed function and process of the present invention. The storage medium may include, but is not limited to, any type of conventional floppy disks, optical disks, CD-ROMs, magneto-optical disks, ROMs, RAMs, EPROMs, EEPROMs, magnetic or optical cards, or any other suitable media for storing electronic instructions.

[0075] Exemplary embodiments have been disclosed above and illustrated in the accompanying drawings. It will be understood by those skilled in the art that various changes, omissions and additions may be made to that which is specifically disclosed herein without departing from the spirit and scope of the present invention.

What is claimed is:

1. A computer-implemented method of reducing traceability of an electronic message, the method comprising:

a sender-side portion including:

receiving an input of a recipient address of an electronic message at a first computer, the recipient address input by a first user;

receiving from the first user an input of a message content of the electronic message at the first computer; and

associating the recipient address with a message header for the electronic message;

an intermediate portion including:

transmitting the message header and message content from the first computer to a second computer;

a recipient-side portion including:

providing a display of the message header via the second computer; and

providing a display of the message content via the second computer;

wherein the message header and the message content are separated throughout the sender-side, intermediate, and recipient-side portions of the method.

2. A computer-implemented method according to claim **1**, wherein the message header and message content are not allowed to be displayed at the first computer or the second computer at the same time, are stored separately, and are transmitted from the first computer to the second computer separately.

3. A computer-implemented method according to claim **1**, wherein after said providing a display of the message content via the second computer, no indication of the message header or message content remains on the first or second computers.

4. A computer-implemented method according to claim **1**, wherein:

said receiving an input of a recipient address includes providing at the first computer a first display including an interface for allowing the first user to input the recipient address;

said receiving an input of a message content includes providing at the first computer a second display including an interface for allowing the first user to input the message content, the recipient address and the message content not being displayed at the first computer at the same time;

said transmitting the message header and message content includes transmitting the message header from the first computer separately from the message content;

said providing a display of the message header includes providing at the second computer a third display including the message header; and

said providing a display of the message content includes providing at the second computer a fourth display including the message content, the third and fourth displays not being displayed at the same time.

5. A computer-implemented method according to claim **4**, wherein the message header is transmitted from the first computer before the completion of said receiving an input of a message content.

6. A computer-implemented method according to claim **4**, wherein said recipient-side portion includes automatically deleting the message header at a first time that occurs before the termination of said providing a display of the message content and automatically deleting the message content at a second time that occurs after the first time.

7. A computer-implemented method according to claim **6**, wherein said first time is upon displaying said fourth display.

8. A computer-implemented method according to claim **6**, wherein said second time is upon closing of said fourth display.

9. A computer-implemented method according to claim **4**, wherein said recipient-side portion includes automatically deleting the message header after the start of said providing a display of the message header and automatically deleting the message content after the start of said providing a display of the message content.

10. A computer-implemented method according to claim **9**, wherein after said automatically deleting the message header and said automatically deleting the message content, the message header and message content no longer exist on the first computer, the second computer, or any of one or more server computers associated with said transmitting the message header and message content.

11. A computer-implemented method according to claim **4**, wherein said interfaces of the first and second displays are displayed at the first computer at the same time such that the message header and message content are not displayed at the first computer at the same time.

12. A computer-implemented method according to claim **1**, wherein said transmitting the message header and message content includes storing the message header and message content at one or more servers prior to transmitting the message header and message content to the second computer.

13. A computer-implemented method according to claim **12**, wherein said storing the message header and message content includes:

storing the message header in a first data table; and

storing the message content in a second data table, such that the message header and message content are maintained separately during storage.

14. A computer-implemented method according to claim **12**, wherein said transmitting the message header and message content includes transmitting the message header from the one or more servers to the second computer separately from the message content.

15. A computer-implemented method according to claim **1**, wherein said transmitting the message header and message content includes storing the message header and message content separately until each is displayed at the second computer.

16. A computer-implemented method according to claim **1**, further comprising associating a unique message ID with each of the message header and message content.

17. A computer-implemented method of reducing traceability of an electronic message, the method comprising:

providing at a first computer a first display including a first interface for allowing a first user to input a recipient address of an electronic message;

receiving an input of a recipient address by the first user;

providing at the first computer a second display including a second interface for allowing the first user to input a message content;

receiving a message content of the electronic message, wherein the recipient address and the message content are not displayed at the first computer at the same time;

associating the recipient address with a message header for the electronic message;

transmitting the message header and message content separately from the first computer to one or more server computers;

storing the message header and message content at the one or more server computers such that the message header and message content are stored separately;

transmitting the message header and message content separately from the one or more server computers to a second computer;

providing at the second computer a third display including the message header; and

providing at the second computer a fourth display including the message content, the third and fourth displays not being displayed at the same time;

wherein the message header and message content are not allowed to be displayed at the first computer or the second computer at the same time, are stored separately, and are transmitted from the first computer to the second computer separately.

18. A computer-implemented method according to claim **17**, wherein the message header is transmitted from the first computer before the completion of said receiving an input of a message content.

19. A computer-implemented method according to claim **17**, further comprising automatically deleting the message header at a first time that occurs before the termination of said providing a fourth display and automatically deleting the message content at a second time that occurs after the first time.

20. A computer-implemented method according to claim **17**, further comprising automatically deleting the message header after the start of said providing a fourth display and automatically deleting the message content after the start of said providing a fourth display.

21. A computer-implemented method according to claim **20**, wherein after said automatically deleting the message header and said automatically deleting the message content, there remains no indication of the message header and message content on the first computer, the second computer, or any of one or more server computers associated with said transmitting the message header and message content.

22. A computer readable hardware storage medium containing computer executable instructions implementing a method of reducing traceability of an electronic message, the instructions comprising:

a set of instructions for receiving an input of a recipient address of an electronic message at a first computer, the recipient address input by a first user;

a set of instructions for receiving from the first user an input of a message content of the electronic message at the first computer; and

a set of instructions for associating the recipient address with a message header for the electronic message;

a set of instructions for transmitting the message header and message content from the first computer to a second computer;

a set of instructions for providing a display of the message header via the second computer; and

a set of instructions for providing a display of the message content via the second computer;

wherein the message header and message content are not allowed to be displayed at the first computer or the second computer at the same time, are stored separately, and are transmitted from the first computer to the second computer separately.

23. A computer readable hardware storage medium according to claim **22**, wherein:

said set of instructions for receiving an input of a recipient address includes a set of instructions for providing at the first computer a first display including an interface for allowing the first user to input the recipient address;

said set of instructions for receiving an input of a message content includes a set of instructions for providing at the first computer a second display including an interface for allowing the first user to input the message content, the recipient address and the message content not being displayed at the first computer at the same time;

said set of instructions for transmitting the message header and message content includes a set of instructions for transmitting the message header from the first computer separately from the message content;

said set of instructions for providing a display of the message header includes a set of instructions for providing at the second computer a third display including the message header; and

said set of instructions for providing a display of the message content includes a set of instructions for providing at the second computer a fourth display including the message content, the third and fourth displays not being displayed at the same time.

24. A computer readable hardware storage medium according to claim **23**, wherein the message header is transmitted from the first computer before the completion of said receiving an input of a message content.

25. A computer readable hardware storage medium according to claim **23**, further comprising a set of instructions for

automatically deleting the message header at a first time that occurs before the termination of said providing a display of the message content and a set of instructions for automatically deleting the message content at a second time that occurs after the first time.

26. A computer readable hardware storage medium according to claim **23**, further comprising a set of instructions for automatically deleting the message header after the start of said providing a display of the message header and a set of instructions for automatically deleting the message content after the start of said providing a display of the message content.

27. A computer readable hardware storage medium according to claim **26**, wherein after said automatically deleting the message header and said automatically deleting the message content, the message header and message content no longer exist on the first computer, the second computer, or any of one or more server computers associated with said transmitting the message header and message content.

28. A computer readable hardware storage medium according to claim **22**, wherein said set of instructions for transmitting the message header and message content includes a set of instructions for storing the message header and message content separately until each is displayed at the second computer.

29. A computer readable hardware storage medium according to claim **28**, wherein said set of instructions for storing the message header and message content includes:

a set of instructions for storing the message header in a first data table; and

a set of instructions for storing the message content in a second data table, such that the message header and message content are maintained separately during storage.

30. A computer readable hardware storage medium according to claim **22**, wherein after said providing a display of the message content via the second computer, no indication of the message header or message content remains on the first or second computers.

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