US008601080B2

(12) **United States Patent**
O'Sullivan et al.

(10) **Patent No.: US 8,601,080 B2**
(45) **Date of Patent: *Dec. 3, 2013**

(54) **SHARING EMAIL**

(71) Applicant: **International Business Machines Corporation**, Armonk, NY (US)

(72) Inventors: **Patrick Joseph O'Sullivan**, Ballsbridge (IE); **Liam Harpur**, Skerries (IE); **Fred Raguillat**, Meath (IE); **Daniel Terlizzi**, Mulhuddart (IE); **Carol Sue Zimmet**, Boxborough, MA (US)

(73) Assignee: **International Business Machines Corporation**, Armonk, NY (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **13/628,459**

(22) Filed: **Sep. 27, 2012**

(65) **Prior Publication Data**

US 2013/0024534 A1 Jan. 24, 2013

Related U.S. Application Data

(63) Continuation of application No. 12/345,943, filed on Dec. 30, 2008, now Pat. No. 8,321,514.

(51) **Int. Cl.**
G06F 15/16 (2006.01)

(52) **U.S. Cl.**
USPC **709/206**; 709/202; 709/203; 709/205; 709/207

(58) **Field of Classification Search**
USPC 709/206, 202, 203, 205, 207
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,530,861	A	6/1996	Diamant et al.
5,944,787	A	8/1999	Zoken
6,012,066	A	1/2000	Discount et al.
6,026,410	A	2/2000	Allen et al.
6,175,831	B1	1/2001	Weinreich et al.
6,185,603	B1	2/2001	Henderson et al.
6,205,432	B1	3/2001	Gabbard et al.
6,263,064	B1	7/2001	O'Neal et al.
6,301,607	B2	10/2001	Barraclough et al.
6,324,587	B1	11/2001	Trenbeath et al.
6,421,678	B2	7/2002	Smiga et al.
6,463,145	B1	10/2002	O'Neal et al.
6,477,240	B1	11/2002	Lim et al.
6,489,980	B1	12/2002	Scott et al.
6,525,747	B1	2/2003	Bezos
6,535,228	B1	3/2003	Bandaru et al.
6,574,599	B1	6/2003	Lim et al.
6,581,105	B2	6/2003	Miloslavsky et al.
6,615,241	B1	9/2003	Miller et al.
6,618,748	B1	9/2003	Bates et al.
6,622,147	B1	9/2003	Smiga et al.
6,643,687	B1	11/2003	Dickie et al.
6,668,281	B1	12/2003	Ayyadurai
6,675,205	B2	1/2004	Meadway et al.
6,691,155	B2	2/2004	Gottfried
6,697,824	B1	2/2004	Bowman-Amuah

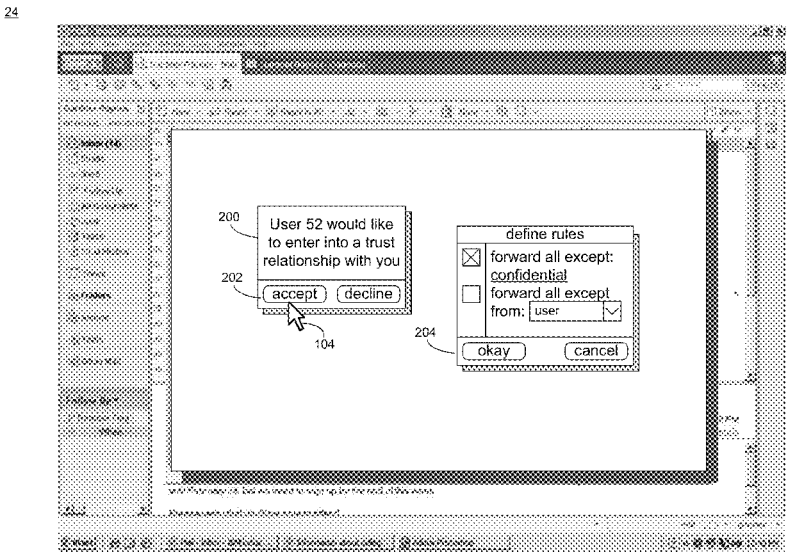
(Continued)

Primary Examiner — Lan-Dai T Truong
Assistant Examiner — Thu Nguyen
(74) *Attorney, Agent, or Firm* — Holland & Knight, LLP; Brian J. Colandreo, Esq.; Jeffrey T. Placker, Esq.

(57) **ABSTRACT**

A trust relationship may be established between a first email user and at least a second email user. At least one email message received by the second user is automatically propagated to the first user based upon, at least in part, the trust relationship.

23 Claims, 5 Drawing Sheets



(56) **References Cited**

U.S. PATENT DOCUMENTS

6,728,690	B1	4/2004	Meek et al.
6,732,090	B2	5/2004	Shanahan et al.
6,732,156	B2	5/2004	Miloslavsky
6,732,157	B1	5/2004	Gordon et al.
6,757,830	B1	6/2004	Tarbotton et al.
6,772,196	B1	8/2004	Kirsch et al.
6,822,940	B1	11/2004	Zavalkovsky et al.
6,874,023	B1	3/2005	Pennell et al.
6,938,065	B2	8/2005	Jain
7,028,075	B2	4/2006	Morris
7,058,543	B2	6/2006	Takahashi et al.
7,079,275	B2	7/2006	Henry et al.
7,117,210	B2	10/2006	DeSalvo
7,136,920	B2	11/2006	Castell et al.
7,146,381	B1	12/2006	Allen et al.
2004/0221012	A1	11/2004	Heumesser
2006/0294192	A1	12/2006	Mao et al.
2008/0307063	A1	12/2008	Caughey
2009/0006572	A1	1/2009	Fuisz
2009/0254625	A1	10/2009	Levy
2009/0276467	A1	11/2009	Scholtes et al.
2010/0313243	A1	12/2010	Bansal et al.

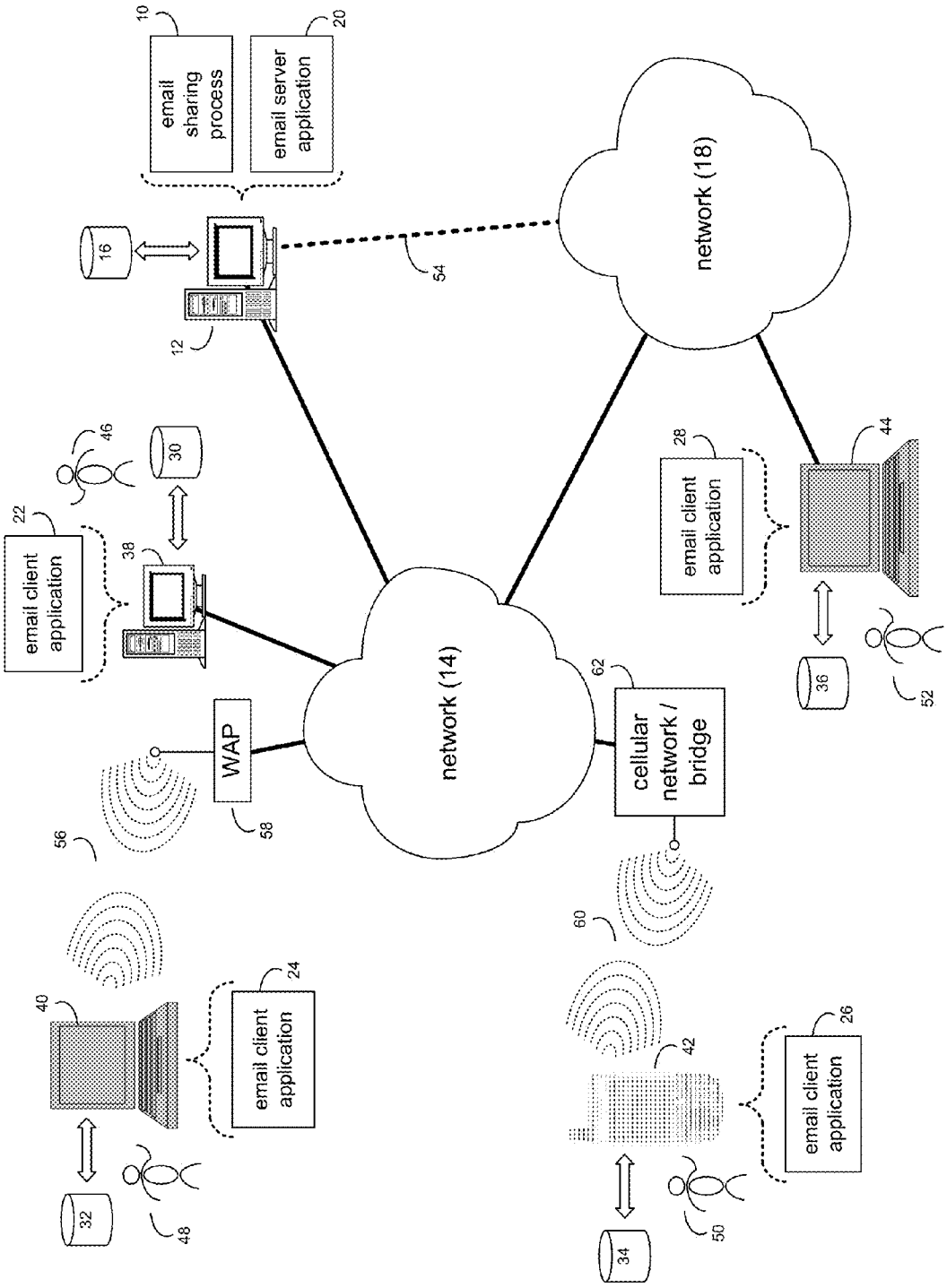

email sharing process
email server application
10
20
16
12
54
network (18)
46
30
22
email client application
38
28
email client application
44
network (14)
62
cellular network / bridge
36
52
WAP
58
56
60
40
email client application
24
42
email client application
26
32
48
34
50

FIG. 1

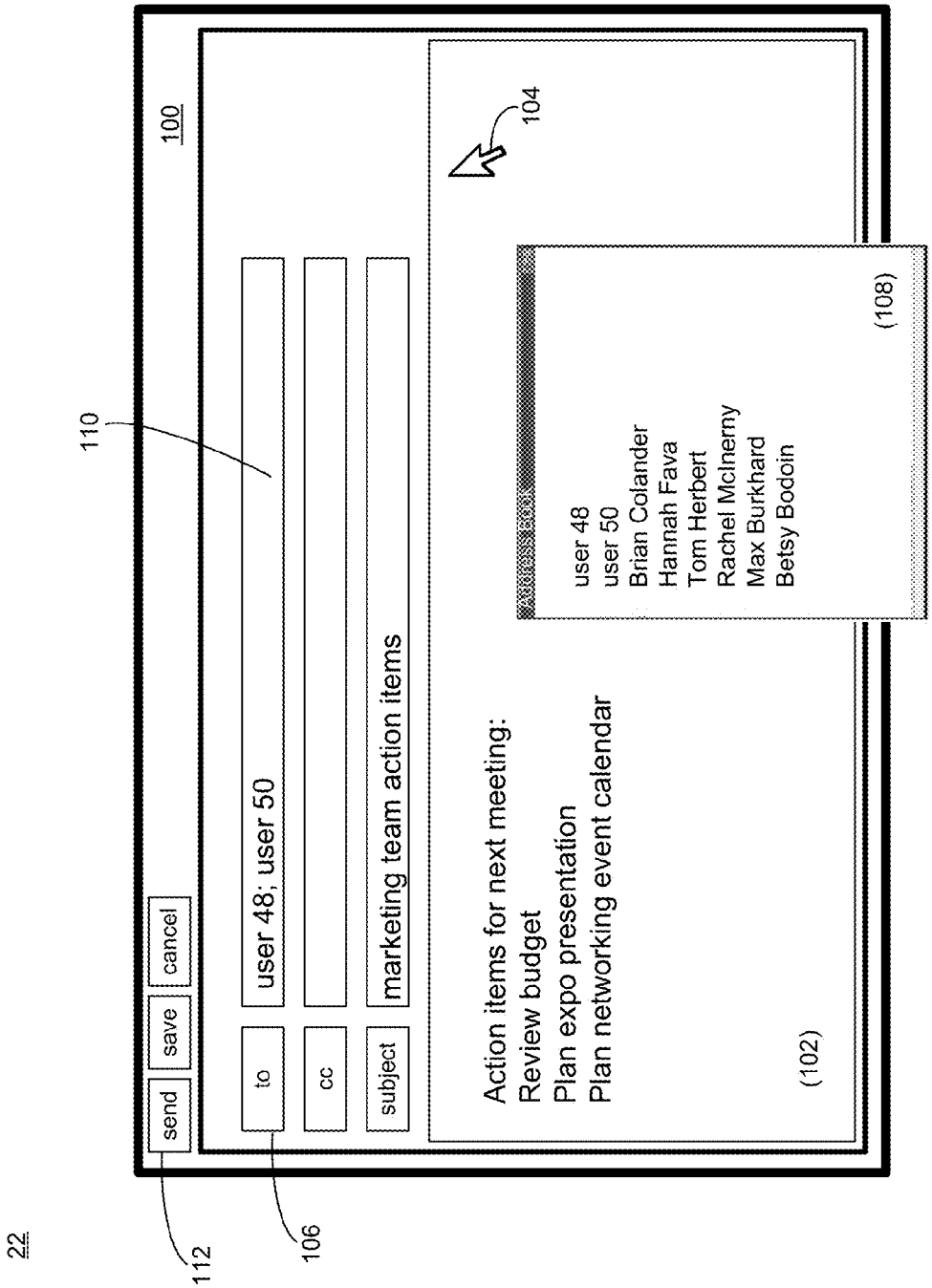

22
100
send
save
cancel
to
user 48; user 50
cc
subject
marketing team action items
Action items for next meeting:
Review budget
Plan expo presentation
Plan networking event calendar
(102)
104
ADDRESS BOOK
user 48
user 50
Brian Colander
Hannah Fava
Tom Herbert
Rachel McInerny
Max Burkhard
Betsy Bodoin
(108)
110
112
106

FIG. 2

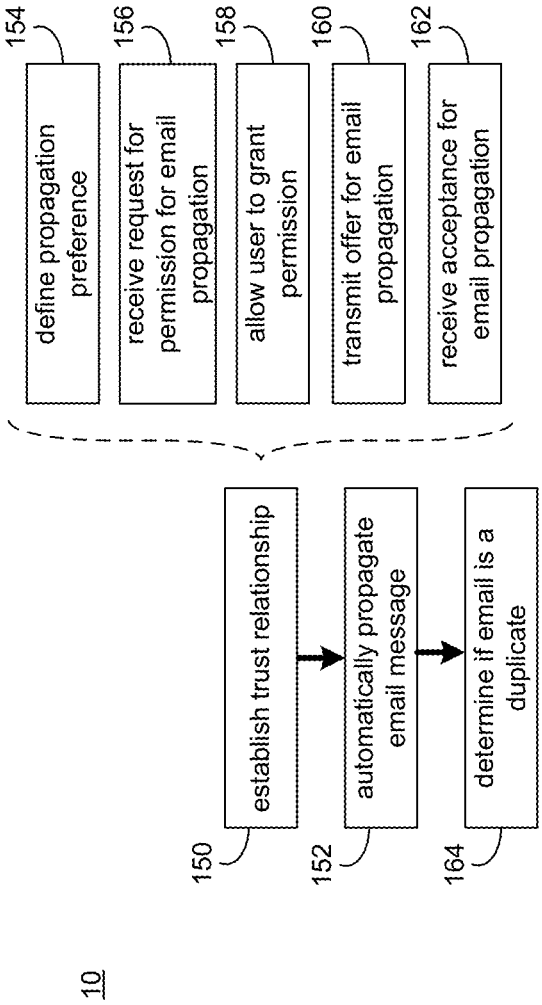
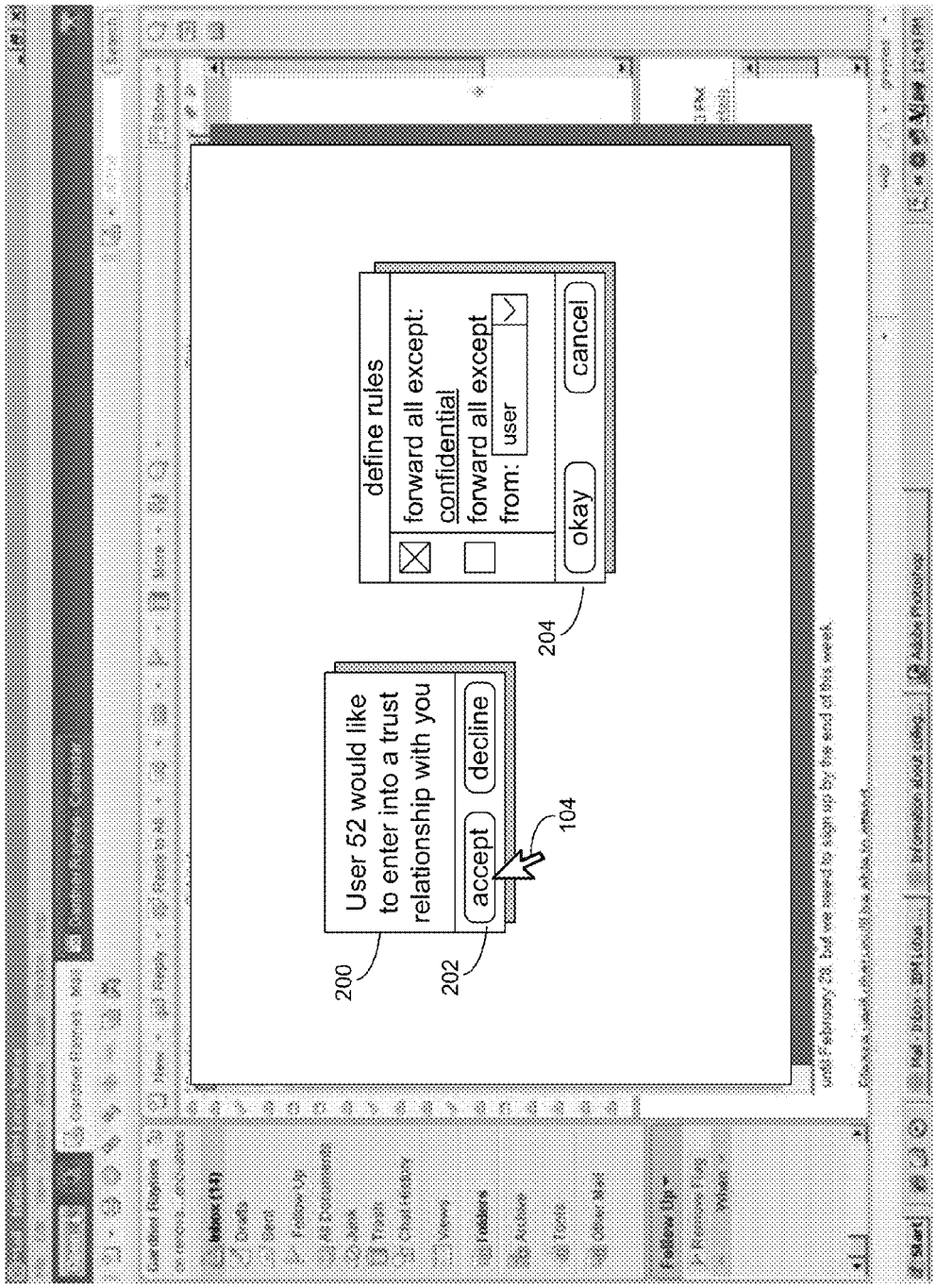

154
define propagation preference
156
receive request for permission for email propagation
158
allow user to grant permission
160
transmit offer for email propagation
162
receive acceptance for email propagation
150
establish trust relationship
152
automatically propagate email message
164
determine if email is a duplicate
10

FIG. 3


User 52 would like to enter into a trust relationship with you
accept
decline
200
202
104
define rules
forward all except: confidential
forward all except from: user
okay
cancel
204

24

FIG. 4

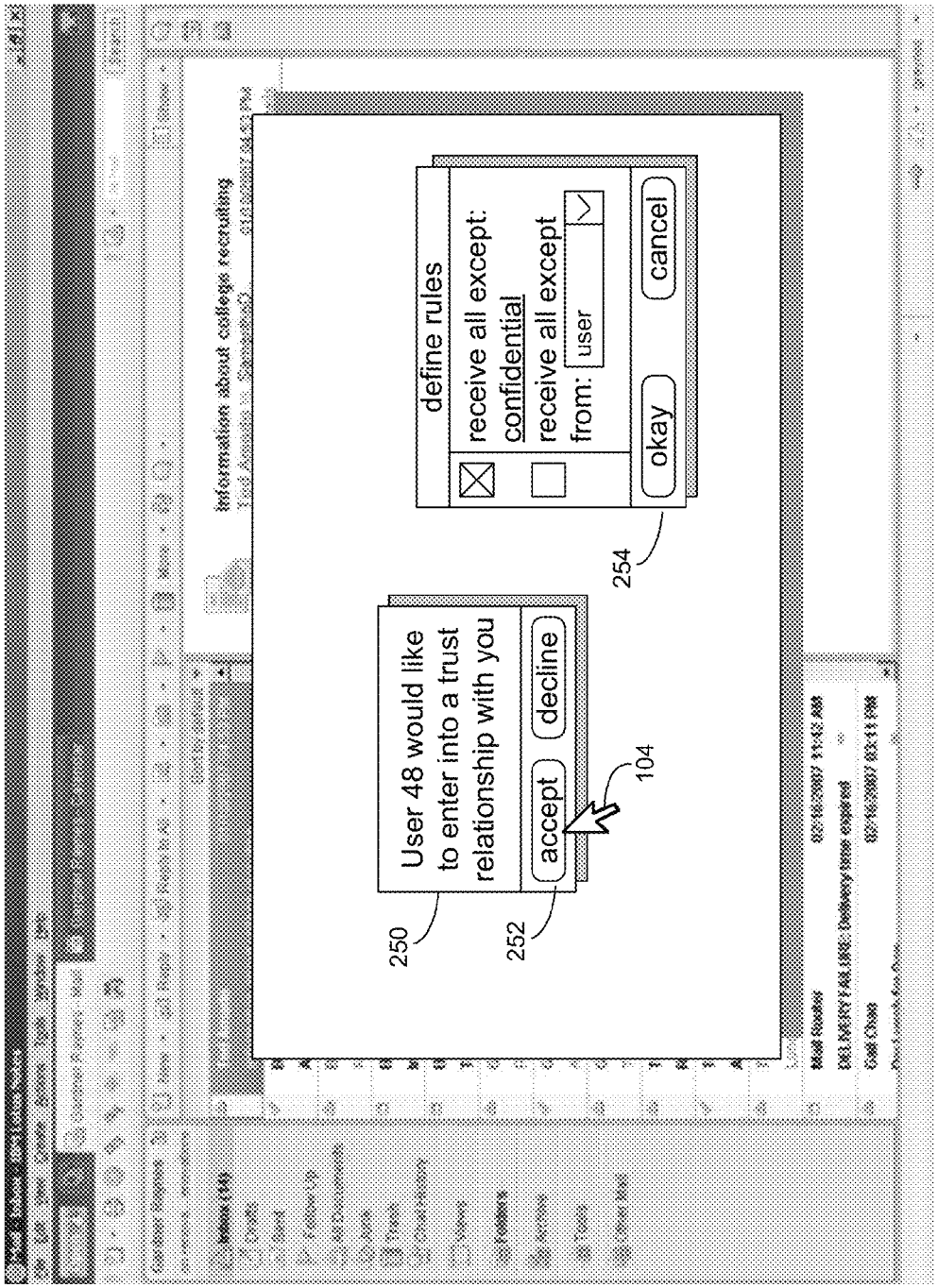

User 48 would like to enter into a trust relationship with you
accept
decline
250
252
104
define rules
receive all except: confidential
receive all except from:
user
okay
cancel
254

FIG. 5

28

SHARING EMAIL

RELATED APPLICATIONS

The subject application is a continuation application of U.S. patent application with Ser. No. 12/345,943, filed on Dec. 30, 2008, the entire content of which is herein incorporated by reference.

BACKGROUND OF THE INVENTION

This disclosure relates to sharing email and, more particularly, to sharing emails amongst multiple users.

Situations may arise in organizations in which individuals miss key correspondences simply because they were not included on an email. Often, the email originator simply forgets to add the person to the email list or the email originator does not have a clear grasp on who should be included on the email list.

Conventional email systems may provide rudimentary workarounds. For example, an email recipient can forward the email to the omitted person, who was left off of the email list, or the omitted person, who was left off of the email list, may ask the email originator to update the email list. Unfortunately, forwarding an email has a point in time benefit and subsequent emails associated with the original email may not be forwarded to the omitted person, who was left off of the email list. Further, asking the email originator to add recipients to an email list requires manual interaction and steps.

In situations where an organization manages multiple emails and email threads, this situation may be frustrating for the email originator who has to cope with multiple requests for additions to email lists. Further, while an originally omitted person may review the email communications of another person, this is a manual procedure that requires the omitted person to proactively police the email communications of another.

SUMMARY OF DISCLOSURE

In a first implementation, a method includes establishing a trust relationship between a first email user and at least a second email user. At least one email message received by the second user is automatically propagated to the first user based upon, at least in part, the trust relationship.

According to another implementation, a computer program product resides on a computer readable medium having a plurality of instructions on it. When executed by a processor, the instructions cause the processor to perform operations including establishing a trust relationship between a first email user and at least a second email user. At least one email message received by the second user is automatically propagated to the first user based upon, at least in part, the trust relationship.

In another implementation, a computing system includes at least one processor and at least one memory architecture coupled with the at least one processor. A first software module is executed on the at least one processor and the at least one memory architecture. The first software module is configured to establish a trust relationship between a first email user and at least a second email user. A second software module is executed on the at least one processor and the at least one memory architecture. The second software module is configured to automatically propagate at least one email message received by the second user to the first user based upon, at least in part, the trust relationship.

The details of one or more implementations are set forth in the accompanying drawings and the description below. Other features will become apparent from the description, the drawings, and the claims.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

FIG. **1** is a diagrammatic view of an email sharing process, an email client application and an email server application coupled to a distributed computing network;

FIG. **2** is a diagrammatic view of a display screen rendered by the email client application and/or the email server application of FIG. **1**;

FIG. **3** is a flowchart of the email sharing process of FIG. **1**;

FIG. **4** is a diagrammatic view of a display screen rendered by the email sharing process, the email client application and/or the email server application of FIG. **1**; and

FIG. **5** is a diagrammatic view of a display screen rendered by the email sharing process, the email client application and/or the email server application of FIG. **1**.

Like reference symbols in the various drawings indicate like elements.

DETAILED DESCRIPTION OF THE INVENTION

As will be appreciated by one skilled in the art, the present invention may be embodied as a method, system, or computer program product. Accordingly, the present invention may take the form of an entirely hardware embodiment, an entirely software embodiment (including firmware, resident software, micro-code, etc.) or an embodiment combining software and hardware aspects that may all generally be referred to herein as a "circuit," "module" or "system." Furthermore, the present invention may take the form of a computer program product on a computer-usable storage medium having computer-usable program code embodied in the medium.

Any suitable computer usable or computer readable medium may be utilized. The computer-usable or computer-readable medium may be, for example but not limited to, an electronic, magnetic, optical, electromagnetic, infrared, or semiconductor system, apparatus, device, or propagation medium. More specific examples (a non-exhaustive list) of the computer-readable medium would include the following: an electrical connection having one or more wires, a portable computer diskette, a hard disk, a random access memory (RAM), a read-only memory (ROM), an erasable programmable read-only memory (EPROM or Flash memory), an optical fiber, a portable compact disc read-only memory (CD-ROM), an optical storage device, a transmission media such as those supporting the Internet or an intranet, or a magnetic storage device. Note that the computer-usable or computer-readable medium could even be paper or another suitable medium upon which the program is printed, as the program can be electronically captured, via, for instance, optical scanning of the paper or other medium, then compiled, interpreted, or otherwise processed in a suitable manner, if necessary, and then stored in a computer memory. In the context of this document, a computer-usable or computer-readable medium may be any medium that can contain, store, communicate, propagate, or transport the program for use by or in connection with the instruction execution system, apparatus, or device. The computer-usable medium may include a propagated data signal with the computer-usable program code embodied therewith, either in baseband or as part of a carrier wave. The computer usable program code may be

transmitted using any appropriate medium, including but not limited to the Internet, wireline, optical fiber cable, RF, etc.

Computer program code for carrying out operations of the present invention may be written in an object oriented programming language such as Java, Smalltalk, C++ or the like. However, the computer program code for carrying out operations of the present invention may also be written in conventional procedural programming languages, such as the "C" programming language or similar programming languages. The program code may execute entirely on the user's computer, partly on the user's computer, as a stand-alone software package, partly on the user's computer and partly on a remote computer or entirely on the remote computer or server. In the latter scenario, the remote computer may be connected to the user's computer through a local area network (LAN) or a wide area network (WAN), or the connection may be made to an external computer (for example, through the Internet using an Internet Service Provider).

The present invention is described below with reference to flowchart illustrations and/or block diagrams of methods, apparatus (systems) and computer program products according to embodiments of the invention. It will be understood that each block of the flowchart illustrations and/or block diagrams, and combinations of blocks in the flowchart illustrations and/or block diagrams, can be implemented by computer program instructions. These computer program instructions may be provided to a processor of a general purpose computer, special purpose computer, or other programmable data processing apparatus to produce a machine, such that the instructions, which execute via the processor of the computer or other programmable data processing apparatus, create means for implementing the functions/acts specified in the flowchart and/or block diagram block or blocks.

These computer program instructions may also be stored in a computer-readable memory that can direct a computer or other programmable data processing apparatus to function in a particular manner, such that the instructions stored in the computer-readable memory produce an article of manufacture including instructions which implement the function/act specified in the flowchart and/or block diagram block or blocks.

The computer program instructions may also be loaded onto a computer or other programmable data processing apparatus to cause a series of operational steps to be performed on the computer or other programmable apparatus to produce a computer implemented process such that the instructions which execute on the computer or other programmable apparatus provide steps for implementing the functions/acts specified in the flowchart and/or block diagram block or blocks.

Referring to FIG. **1**, there is shown email sharing process **10** that may reside on and may be executed by server computer **12**, which may be connected to network **14** (e.g., the Internet or a local area network). Examples of server computer **12** may include, but are not limited to: a personal computer, a server computer, a series of server computers, a mini computer, and a mainframe computer. Server computer **12** may be a web server (or a series of servers) running a network operating system, examples of which may include but are not limited to: Microsoft® Windows® XP Server; Novell® Netware®; or Red Hat® Linux®, for example (Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States, other countries, or both; Novell and NetWare are registered trademarks of Novell Corporation in the United States, other countries, or both; Red Hat is a registered trademark of Red Hat Corporation in the United States, other countries, or both; and Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both).

As will be discussed below in greater detail, email sharing process **10** may establish a trust relationship between a first email user and at least a second email user. At least one email message received by the second user may be automatically propagated to the first user based upon, at least in part, the trust relationship.

The instruction sets and subroutines of email sharing process **10**, which may be configured as one or more software modules, and which may be stored on storage device **16** coupled to server computer **12**, may be executed by one or more processors (not shown) and one or more memory architectures (not shown) incorporated into server computer **12**. Storage device **16** may include but is not limited to: a hard disk drive; a solid state drive; a tape drive; an optical drive; a RAID array; a random access memory (RAM); and a read-only memory (ROM).

Server computer **12** may execute a web server application, examples of which may include but are not limited to: Microsoft IIS, Novell Webserver™, or Apache® Webserver, that allows for HTTP (i.e., HyperText Transfer Protocol) access to server computer **12** via network **14** (Webserver is a trademark of Novell Corporation in the United States, other countries, or both; and Apache is a registered trademark of Apache Software Foundation in the United States, other countries, or both). Network **14** may be connected to one or more secondary networks (e.g., network **18**), examples of which may include but are not limited to: a local area network; a wide area network; or an intranet, for example.

Server computer **12** may execute email server application **20**, examples of which may include but are not limited to Lotus Domino® Server and Microsoft Exchange Server® (Domino is a trademark of International Business Machines Corporation in the United States, other countries, or both; and Microsoft Exchange Server is a registered trademark of Microsoft Corporation in the United States, other countries, or both). Email server application **20** may be a messaging and collaboration software platform that may allow for user collaboration via email client applications **22**, **24**, **26**, **28**, examples of which may include but are not limited to Lotus Notes® and Microsoft Outlook® (Lotus Notes is a trademark of International Business Machines Corporation in the United States, other countries, or both; and Outlook is a registered trademark of Microsoft Corporation in the United States, other countries, or both). Email sharing process **10** may be a stand alone application that interfaces with email server application **20** or an applet/application that is executed within email server application **20**.

The instruction sets and subroutines of email server application **20**, which may be configured as one or more software modules, and which may be stored on storage device **16** coupled to server computer **12** may be executed by one or more processors (not shown) and one or more memory architectures (not shown) incorporated into server computer **12**.

While the email sharing process is shown and described as residing on, and being executed by, server computer **12**, other implementations may equally be utilized. For example, the email sharing process may be a client-side process stored on one or more storage devices (e.g., storage devices **30**, **32**, **34**, **36**) coupled to one or more client electronic devices (e.g., client electronic devices **38**, **40**, **42**, **44**; respectively). In such an implementation, the email sharing process may be a stand alone application that interfaces with an email client application (e.g., one or more of email client application **22**, **24**, **26**, **28**) or an applet/application that is executed within an email

client application. As such, the email sharing process may be a server-side process executed on server computer **12**, a client-side process executed by one or more client electronic device (e.g., one or more of client electronic devices **38**, **40**, **42**, **44**), or a hybrid client-side/server-side process, executed in part by server computer **12** and one or more client electronic device (e.g., one or more of client electronic devices **38**, **40**, **42**, **44**).

The instruction sets and subroutines of email client applications **22**, **24**, **26**, **28**, which may be configured as one or more software modules, and which may be stored on storage devices **30**, **32**, **34**, **36** (respectively) coupled to client electronic devices **38**, **40**, **42**, **44** (respectively), may be executed by one or more processors (not shown) and one or more memory architectures (not shown) incorporated into client electronic devices **38**, **40**, **42**, **44** (respectively). Storage devices **30**, **32**, **34**, **36** may include but are not limited to: hard disk drives; solid state drives; tape drives; optical drives; RAID arrays; random access memories (RAM); read-only memories (ROM), compact flash (CF) storage devices, secure digital (SD) storage devices, and memory stick storage devices. Examples of computing devices **38**, **40**, **42**, **44** may include, but are not limited to, personal computer **38**, laptop computer **40**, personal digital assistant **42**, notebook computer **44**, a data-enabled, cellular telephone (not shown), and a dedicated network device (not shown), for example. Using email client applications **22**, **24**, **26**, **28**, users **46**, **48**, **50**, **52** may access email server application **20** and may allow users to e.g., created, receive, and manage email messages.

Users **46**, **48**, **50**, **52** may access email server application **20** directly through the device on which the email client application (e.g., email client applications **22**, **24**, **26**, **28**) is executed, namely client electronic devices **38**, **40**, **42**, **44**, for example. Users **46**, **48**, **50**, **52** may access email server application **20** directly through network **14** or through secondary network **18**. Further, server computer **12** (i.e., the computer that executes email server application **20**) may be connected to network **14** through secondary network **18**, as illustrated with phantom link line **54**.

The various client electronic devices may be directly or indirectly coupled to network **14** (or network **18**). For example, personal computer **38** is shown directly coupled to network **14** via a hardwired network connection. Further, notebook computer **44** is shown directly coupled to network **18** via a hardwired network connection. Laptop computer **40** is shown wirelessly coupled to network **14** via wireless communication channel **56** established between laptop computer **40** and wireless access point (i.e., WAP) **58**, which is shown directly coupled to network **14**. WAP **58** may be, for example, an IEEE 802.11a, 802.11b, 802.11g, Wi-Fi, and/or Bluetooth device that is capable of establishing wireless communication channel **56** between laptop computer **40** and WAP **58**. Personal digital assistant **42** is shown wirelessly coupled to network **14** via wireless communication channel **60** established between personal digital assistant **42** and cellular network/bridge **62**, which is shown directly coupled to network **14**.

As is known in the art, all of the IEEE 802.11x specifications may use Ethernet protocol and carrier sense multiple access with collision avoidance (i.e., CSMA/CA) for path sharing. The various 802.11x specifications may use phase-shift keying (i.e., PSK) modulation or complementary code keying (i.e., CCK) modulation, for example. As is known in the art, Bluetooth is a telecommunications industry specification that allows e.g., mobile phones, computers, and personal digital assistants to be interconnected using a short-range wireless connection.

Client electronic devices **38**, **40**, **42**, **44** may each execute an operating system, examples of which may include but are not limited to Microsoft® Windows®, Microsoft Windows CE®, Red Hat® Linux®, or a custom operating system (Windows CE is a registered trademark of Microsoft Corporation in the United States, other countries, or both).

Referring also to FIG. **2**, email client application **22** may allow an email user, e.g., user **46**, to compose, via visual emailing interface **100**, email message **102**. Through visual emailing interface **100**, user **46** may compose email message **102** and address email message **102** to one or more email users (e.g. user **48**, user **50**). When composing emails, user **46** may select the email users to whom the email is directed. For example, user **46** may select, via on-screen pointer **104** (which is controlled by a pointing device such as a mouse; not shown), the desired recipients of email message **102**, e.g., from an address book or corporate directory associated with one or more of email client application **22** and email server application **20**. For example, user **46** may select, via on-screen pointer **104**, "to" button **106** on visual emailing interface **100**. Once selected, email server application **20** and/or email client application **22** may render pop-up window **108**. While pop-up window **108** is shown to include only the names of seven email users, this is for illustrative purposes only and is not intended to be a limitation of this disclosure, as the number of email users included within pop-up window **108** may be increased or decreased depending on the design criteria and user need. User **46** may select, e.g., via on-screen pointer **104**, the email users for receiving email message **102**. Accordingly, for example, email message **102**, regarding marketing team action items, may be directed to email users who are members of the marketing team, e.g., user **48** and user **50**.

Email client application **22** (alone or in combination with email sharing process **10** and/or email server application **20**) may enable user **46** to send email message **102** to the above-described intended email users. Via email client application **22** (alone or in combination with email sharing process **10** and/or email server application **20**), user **46** may send email **102** to user **48** and user **50**, as defined within "to" field **110** of email message **102**, e.g., by selecting, via on-screen pointer **104**, "send" button **112**. Upon user **46** selecting "send" button **112**, email client application **22** (alone or in combination with email sharing process **10** and/or email server application **20**) may send email **102** to the intended email users, e.g., user **48** and user **50**.

As discussed above, upon selecting "send" button **112**, email message **102** from user **46** may be sent to e.g., user **48** and user **50**. However, an email message was not sent to user **52**, who was not included as a recipient of email message **102**. Assume for illustrative purposes that user **52** is a new employee of Company X and, unfortunately, many users forget to include user **52** on emails. Further, assume that user **46**, user **48**, user **50**, and user **52** all work within the same marketing group of Company X. Therefore, user **52** should most likely receive the emails that user **46**, user **48** and user **50** receive. Additionally, assume that user **48** is the mentor of user **52**, who is a new hire of Company X and mentee of user **48**.

Referring also to FIG. **3** and as discussed above, email sharing process **10** may allow for the establishment **150** of a trust relationship between a first email user (user **52**) and at least a second email user (user **48**). Email sharing process **10** may automatically propagate **152** email messages for the second user (e.g., user **48**) to the first user (e.g., user **52**) based upon, at least in part, the trust relationship.

Once a trust relationship is established **150** between the two users (e.g. user **48** and user **52**), email sharing process **10** may allow one or more of the users, an administrator, or the like, to define **154** one or more propagation preferences (to be discussed below in greater detail) that may allow for the automated propagation **152** of email messages from, e.g., user **48** to user **52**. Since, as discussed above, user **52** is the mentee of user **48**, it may be desirable for mentee user **52** to receive the same emails as mentor user **48**. Accordingly, it may be desirable for all (or some) of the email messages received by user **48** to be automatically propagated **152** (e.g., be forwarded) to user **52**, thus allowing user **52** to review and (if desired) respond to one or more of the email messages which user **48** has received. Further, it may be desirable for user **52** to receive all (or some) of the email messages that are sent by user **48**.

When establishing **150** a trust relationship between e.g. user **48** and user **52**, email sharing process **10** may receive **156** a request from the first user (e.g., from user **52**), requesting that the second user (e.g., user **48**) grant permission for at least a portion of user **48**'s email messages to be automatically propagated **152** to user **52**. Further, when establishing **150** the trust relationship, email sharing process **10** may allow user **48** to grant permission **158** for at least a portion of his email messages to be automatically propagated **152** to user **52**.

For example, if user **52** would like to have email messages of user **48** automatically propagated **152**, user **52** may send a request (e.g., which may be received **156** by email sharing process **10**, and forwarded to user **48**) that user **48** grant permission for at least a portion of email messages to be automatically propagated **152** to user **52**. Accordingly, and referring also to FIG. **4**, email sharing process **10** may render (alone or in conjunction with one or more of email client application **24** and/or email server application **20**) request window **200** that, e.g., informs user **48** that user **52** would like to receive at least a portion of the email messages of user **48**. Further, prior to user **48** granting **158** permission to user **52**, no such email messages will be automatically propagated **152** to user **52**. If user **48** finds this trust relationship acceptable, user **48** may enter into the trust relationship by selecting "accept" button **202**. In the event that user **48** selects, via on-screen pointer **104**, "accept" button **202**, email sharing process **10** may render propagation preference definition window **204** that allows user **48** to define **154** propagation preferences (to be discussed below in greater detail) concerning which email messages may be automatically propagated **152** to user **52**.

Additionally, trust relationships need not be unidirectional. For example, a bidirectional trust relationship may be established between user **48** and user **52** in which all (or a portion of) email messages of user **48** may be automatically propagated **152** to user **52** and all (or a portion of) email messages of user **52** may be automatically propagated **152** to user **48**.

Additionally, when establishing **150** a trust relationship between the first user (e.g., user **52**) and the second user (e.g. user **48**), email sharing process **10** may transmit **160** an offer to the first user (e.g., user **52**) for at least one email message to be automatically propagated **152** from the second user (e.g., user **48**). Further, when establishing **150** the trust relationship, email sharing process **10** may receive **162** an acceptance from the first user (e.g., user **52**) for at least one email message to be automatically propagated **152** from the second user (e.g., user **48**).

For example and referring also to FIG. **5**, if user **48** would like to automatically propagate email messages to user **52**, user **48** may make an offer (e.g., via email sharing process **10** and/or email server application **20**) that at least a portion of user **48**'s email messages be automatically propagated **152** to user **52**. Accordingly, email sharing process **10** may transmit **160** user **48**'s offer of email propagation to user **52**. For example, email sharing process **10** (alone or in conjunction with email client application **28** and/or email server application **20**) may render offer window **250** that, e.g., informs user **52** that user **48** would like to propagate at least a portion of user **48**'s email messages to user **52**. If user **52** finds this trust relationship acceptable, user **52** may enter into the trust relationship by selecting, via on-screen pointer **104**, "accept" button **252**. In the event that user **52** selects, via on-screen pointer **104**, "accept" button **252**, email sharing process **10** may render propagation preference definition window **254** that may allow user **52** to define **154** propagation preferences (to be discussed below in greater detail) concerning which email messages may be automatically propagated **152** to user **52**. Further, prior to email sharing process **10** receiving **162** user **52**'s acceptance of email message propagation from user **48**, no such email messages will be automatically propagated **152** to user **52**.

In addition to automatically propagating email messages to one or more individual users, an email recipient may wish to automatically propagate email to groups of users. For example, a supervisor may wish to propagate email to his entire team. Email sharing process **10** may establish **150** a trust relationship between the supervisor and the members of his team, either via the above-discussed offer-acceptance mechanism (e.g., wherein the various members of the team must affirmatively accept the offer to receive email from the supervisor), and/or may establish **150** the trust relationship based upon the supervisors hierarchical status relative to his team (e.g., which may be discerned from a corporate directory, such as an LDAP directory that may include title, rank/pay grade, and/or other information denoting relative hierarchical position). As such, a trust relationship may be established **150** between the supervisor and his team (e.g., which may be defined as individuals reporting to the supervisor). As such, changes in the supervisor's team (e.g., as people are added to the team and/or leave the team) may be automatically reflected in the established **150** trust relationship. For example, a new member of the team may be reflected in the LDAP directory as an individual who reports to the supervisor. As such, email sharing process **10** may establish **150** a trust relationship between the new member of the team and the supervisor, e.g., without the need for the supervisor to take any action relative to the new member. As discussed below, the supervisor may define **154** propagation preferences, e.g., which may, at least in part, determine which emails may be forwarded to the supervisor's team (e.g., propagate all email from client ABC).

As discussed above, when establishing **150** a trust relationship between e.g. user **48** and user **52**, email sharing process **10** may enable the users to define **154** at least one propagation preference. The at least one email message may be automatically propagated **152** based upon, at least in part, the at least one propagation preference. Accordingly, email sharing process **10** may allow user **48** and/or user **52** to define **154** propagation preferences concerning the manner in which email messages are automatically propagated **152** between the users.

For example, email sharing process **10** may allow user **48** and/or user **52** to define **154** propagation preferences based upon, at least in part, an attribute of the at least one email message. Attributes of the at least one email message may include, but are not limited to, for example, attributes relating to individuals associated with the email (e.g., sender, recipients, carbon copy recipients, or the like), email status (e.g.,

high priority, confidential, restricted distribution, and the like), categorization of the email (e.g., based upon a tag associated with the email, such as "personal," "marketing," or the like; and/or based upon a subject of the email, discerned from the subject field of the email, or from text of the email).

For example, one or more of user **48** and user **52** may select, via preference definition windows **204**, **254**, respectively, to automatically propagate **152** all email messages except those indicated as being confidential. While preference definition windows **204**, **254** are only shown including a single email attribute-based propagation preference (namely "all except confidential"), this is only intended for illustrative purposes, and should not be construed as a limitation of this disclosure, as the number and nature of email attribute-based propagation preferences may vary according to user need and design criteria. For example, email sharing process **10** may allow user **48** and/or user **52** to define category-based propagation preferences (e.g., based upon, at least in part the subject field of the email message, and/or key words within the body of the email message, and/or tags associated with the email). Accordingly, propagation preferences may be defined **154** concerning specific topics or subjects (e.g. marketing, company administration, meetings, etc.), such that email messages adhering to certain topic-defined criteria may be e.g. filtered prior to transmission or filtered upon receipt.

Additionally, email sharing process **10** may allow user **48** and/or user **52** to define **154** propagation preferences based upon, at least in part, an attribute of an original sender of the at least one email message. For example, email sharing process **10** may allow user **48** to define **154** (e.g., via a pull-down menu, or the like, in preference definition window **204**) a propagation preference that automatically propagates **152** all email messages to user **52** except email messages from user **52**'s supervisor, or email messages from Betsy Bodoin or Max Burkhard who are personal friends of user **48**. Further, if the established **150** trust relationship is a bidirectional relationship, email sharing process **10** may allow user **52** to define **154** (e.g., via a pull-down menu, or the like, in preference definition window **254**) one or more propagation preferences that automatically forwards to user **48** email messages except those from John Browning, Tom Coleman, and Seth Pressman, who are all members of the mentee group to which user **52** was assigned when he was hired by Company X.

In addition to defining **154** propagation preferences to automatically propagate **152** email messages from one or more individual users, user **48** and/or user **52** may define **154** a propagation preference to automatically propagate **152** all email messages sent from a defined group of users and/or included a defined group of users as recipients. Such groups of users may include, for example, email distribution groups (i.e., which may be defined by an individual user, a system administrator, or system-wide, e.g., in a corporate directory such as an LDAP directory), organizational groups (e.g., a corporate departments which may be defined in a corporate directory such as an LDAP directory), and/or groups based upon one or more user attributes (e.g., title, organizational connection, rank/pay grade, etc.), which may, for example, be discerned based upon, at least in part, information which may be contained in a directory, such as a corporate LDAP directory.

In addition/as an alternative to the above-described groups of users that may be based upon, at least in part, groups and/or attributes defined within an LDAP directory, email sharing process **10** may allow propagation preferences to be defined **154** based upon, at least in part, a social network defined for one or more of the first email user and the second email user. The social network for the first email user and/or the second email user may include those individuals with whom the respective email users interact. Such interactions may include, but are not limited to, a history of communications across various communication channels (e.g., email, instant messaging, telephone, and the like), inclusion on the email users respective instant messaging buddy list, attendance at the same meetings (e.g., as indicated by commonly scheduled events in respective calendaring applications), working together on the same projects, and so on. Various interactions of the respective email users may be monitored, and a social network defined by, various social networking applications and/or suites, such as, for example IBM Lotus Connections, Microsoft SharePoint®, Facebook®, LinkedIn®, MySpace®, Twitter® (SharePoint is a registered trademark of Microsoft Corporation in the United States, other countries, or both; Facebook is a registered trademark of Facebook, Inc. in the United States, other countries, or both; LinkedIn is a registered trademark of LinkedIn, Ltd. in the United States, other countries, or both; MySpace is a registered trademark of MySpace, Inc., in the United States, other countries, or both; Twitter is a registered trademark of Twitter, Inc. in the United States, other countries or both).

For example, user **48** and/or user **52** may define **154** a propagation preference to automatically propagate **152** all email messages sent from a defined group of users and/or including a defined group of users as recipients, in which the group of users is based upon, at least in part, a social network defined for user **48** and/or user **52**. The group of users may include a subset of the social network defined for user **48** and/or user **52**. For example, the group of users may only include those people within the social network that also work for the same company as user **48** and user **52**, that have a specified degree of closeness to user **48** and/or user **52** (e.g., who communicate with user **48** and/or user **52** with a specified frequency), or the like.

Further, while the above-discussed propagation preferences concern sender-side propagation preferences that filter the outgoing email messages stream, other configurations are possible and are considered to be within the scope of this disclosure. For example, email sharing process **10** may allow user **48** and/or user **52** to define **154** receiver-side propagation preferences that filter the incoming email message stream. For example, suppose user **48** failed to define **154** the above-described propagation preference in which email messages from Betsy Bodoin or Max Burkhard are filtered prior to being automatically propagated **152** to user **52**, user **52** may define **154** a receiver-side propagation preference that filters email messages from Betsy Bodoin and Max Burkhard upon receipt by user **52**.

While preference definition windows **204**, **254** are only shown including one sender-based preference (namely to automatically propagate all email "except from"), this is for illustrative purposes only and should not be construed as a limitation of this disclosure, and the number and nature of sender-based preferences included within preference definition windows **204**, **254** may vary according to user need and design criteria. Further, while email sharing process has been described as allowing email attribute-based, and sender-based preferences to be defined, this is also only intended for illustrative purposes. The number and nature of parameters that may be considered for defining automatic propagation preferences may vary according to user need and design criteria. Additionally, chaining preferences may also be implemented, including "and", "or", and/or "not" statements. For example, email sharing process **10** may automatically propagate **152** email including: Tom Smith AND Susan Jones as recipients OR including Client ABC in the email message

subject. Other variations of propagation preferences utilizing "and", "or", "not" statements may also be defined **154**. Propagation preferences may also be defined **154** utilizing email attributes other than email recipients. For example, propagation preferences may be defined **154** based upon, at least in part, email subject, originating domain, email priority, time/date during which propagation should occur, and the like.

Additionally, email sharing process **10** may allow user **48** and/or user **52** to define **154** propagation preferences based upon, at least in part, an event, status, or the like. For example, user **48** may define **154** a propagation preference to automatically propagate **152** email when user **48** has set an email out of office notification, e.g., via email client application **24**. As such, whenever an email is sent to user **48**, email client application **24** may automatically sent a reply to the sender, alerting the sender that user **48** is out of the office (e.g., and may also include an indicator of when user **48** plans to return to the office). Based upon the defined **154** propagation preference to automatically propagate **152** email to user **52** when user **48** has set an email out of office notification, whenever user **48** has set the email out of office notification, email sharing process **10** may automatically propagate **152** email sent to user **48**, to user **52** (e.g., who may be a peer of user **48** and may attend to important email as user **48**'s proxy).

Email sharing process **10** may determine **164** if the at least one email message is a duplicate email. For example, user **52** may have multiple trust relationships with other email users. Accordingly, if two or more of the other email users receive the same email message, email sharing process **10** may determine **164** that the email message to be automatically propagated **152** is a duplicate and only one copy of the email may be propagated **152** to user **52**. For example, the email may be automatically propagated **152** to user **52** from only a single user (e.g., user **48**) with whom user **52** has a trust relationship. Additionally/alternatively, while a copy of the email message may be automatically propagated **152** to user **52**, email sharing process (e.g., in conjunction with email client application **28**) may only display a single copy of the propagated email in user **52**'s email inbox, and/or indicate that additional copies are duplicates.

Email sharing process **10** may maintain a record of the various established **150** trusted relationships, and the various rules and preferences for automatically propagating **152** email to users. Additionally/alternatively, email sharing process **10** (alone or in conjunction with email server application **20** and/or one or more email client application **22**, **24**, **26**, **28**) may maintain a record email transactions (e.g., what email messages are automatically propagated **152** to which users), for example, which may include email sharing process **10** receiving reports of automatically propagated **152** email messages from one or more of email server application **20** and/or one or more email client application **22**, **24**, **26**, **28**. As such email sharing process **10** (alone or in conjunction with email server application **20** and/or one or more email client application **22**, **24**, **26**, **28**) may maintain and/or be capable of generating an email distribution history. Accordingly, it may be possible to determine what email content has been distributed to which users. While possible mechanisms for tracking email distribution have been described above, various additional/alternative mechanisms are possible consistent with the present disclosure.

While the system is described above as automatically propagating **152**, from user **48** to user **52**, email messages received by user **48**, other configurations are possible and are considered to be within the scope of this disclosure. For example, the email messages automatically propagated **152**, e.g. from user **48** to user **52**, may include one or more email messages sent by user **48** (as opposed to an email message received by user **48**). Accordingly, in the event that user **48** sends an email regarding a project that users **46**, **48**, **50**, **52** are all working on and user **48** inadvertently forgets to include user **52** on the email, upon user **48** sending the email message to users **48**, **50**, email sharing process **10** may automatically propagate **152** to user **52** the email message sent by user **46**.

The flowchart and block diagrams in the Figures illustrate the architecture, functionality, and operation of possible implementations of systems, methods and computer program products according to various embodiments of the present invention. In this regard, each block in the flowchart or block diagrams may represent a module, segment, or portion of code, which comprises one or more executable instructions for implementing the specified logical function(s). It should also be noted that, in some alternative implementations, the functions noted in the block may occur out of the order noted in the figures. For example, two blocks shown in succession may, in fact, be executed substantially concurrently, or the blocks may sometimes be executed in the reverse order, depending upon the functionality involved. It will also be noted that each block of the block diagrams and/or flowchart illustration, and combinations of blocks in the block diagrams and/or flowchart illustration, can be implemented by special purpose hardware-based systems that perform the specified functions or acts, or combinations of special purpose hardware and computer instructions.

The terminology used herein is for the purpose of describing particular embodiments only and is not intended to be limiting of the invention. As used herein, the singular forms "a", "an" and "the" are intended to include the plural forms as well, unless the context clearly indicates otherwise. It will be further understood that the terms "comprises" and/or "comprising," when used in this specification, specify the presence of stated features, integers, steps, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, integers, steps, operations, elements, components, and/or groups thereof.

The corresponding structures, materials, acts, and equivalents of all means or step plus function elements in the claims below are intended to include any structure, material, or act for performing the function in combination with other claimed elements as specifically claimed. The description of the present invention has been presented for purposes of illustration and description, but is not intended to be exhaustive or limited to the invention in the form disclosed. Many modifications and variations will be apparent to those of ordinary skill in the art without departing from the scope and spirit of the invention. The embodiment was chosen and described in order to best explain the principles of the invention and the practical application, and to enable others of ordinary skill in the art to understand the invention for various embodiments with various modifications as are suited to the particular use contemplated.

Having thus described the invention of the present application in detail and by reference to embodiments thereof, it will be apparent that modifications and variations are possible without departing from the scope of the invention defined in the appended claims.

What is claimed is:

1. A method comprising:

establishing, via a computing device, a trust relationship between a first email user and at least a second email user, wherein establishing the trust relationship between the first email user and the second email user includes:

sending, between the first email user and the second email user, an offer through one or more visual win-

dows defining the trust relationship, wherein the one or more visual windows include one or more selectable rules defining which one or more email messages to propagate between the first email user and the second email user; and

receiving an acceptance of the offer and a selection of the one or more selectable rules through the one or more visual windows, wherein the acceptance of the offer establishes the trust relationship.

2. The method of claim **1** further comprising automatically propagating at least one email message received by the second email user to the first email user based upon, at least in part, the trust relationship.

3. The method of claim **2**, wherein establishing the trust relationship further includes allowing the second email user to grant permission for the at least one email message to be automatically propagated to the first email user.

4. The method of claim **2**, wherein establishing the trust relationship further includes transmitting the offer to the first email user for the at least one email message to be automatically propagated from the second email user.

5. The method of claim **4**, wherein establishing the trust relationship further includes receiving the acceptance from the first email user for the at least one email message to be automatically propagated from the second email user.

6. The method of claim **2**, wherein the trust relationship is based upon, at least in part, at least one of:

an attribute of an original sender of the at least one email message; and

an attribute of the at least one email message.

7. The method of claim **2**, wherein establishing the trust relationship further includes receiving a request that the second email user grant permission for the at least one email message to be automatically propagated to the first email user.

8. The method of claim **2**, further comprising determining if the at least one email message is a duplicate email.

9. The method of claim **1**, wherein the trust relationship includes a bidirectional trust relationship and at least one email message received by the first email user is propagated to the second email user based upon, at least in part, the bidirectional trust relationship.

10. A computer program product residing on a non-transitory computer readable medium having a plurality of instructions stored thereon which, when executed by a processor, cause the processor to perform operations comprising:

establishing, via a computing device, a trust relationship between a first email user and at least a second email user, wherein establishing the trust relationship between the first email user and the second email user includes:

sending, between the first email user and the second email user, an offer through one or more visual windows defining the trust relationship, wherein the one or more visual windows include one or more selectable rules defining which one or more email messages to propagate between the first email user and the second email user; and

receiving an acceptance of the offer and a selection of the one or more selectable rules through the one or more visual windows, wherein the acceptance of the offer establishes the trust relationship.

11. The computer program product of claim **10** further comprising automatically propagating at least one email message received by the second email user to the first email user based upon, at least in part, the trust relationship.

12. The computer program product of claim **11**, wherein establishing the trust relationship further includes allowing the second email user to grant permission for the at least one email message to be automatically propagated to the first email user.

13. The computer program product of claim **11**, wherein establishing the trust relationship further includes transmitting the offer to the first email user for the at least one email message to be automatically propagated from the second email user.

14. The computer program product of claim **13**, wherein establishing the trust relationship further includes receiving the acceptance from the first email user for the at least one email message to be automatically propagated from the second email user.

15. The computer program product of claim **11**, wherein the trust relationship is based upon, at least in part, at least one of:

an attribute of an original sender of the at least one email message; and

an attribute of the at least one email message.

16. The computer program product of claim **11**, wherein establishing the trust relationship further includes receiving a request that the second email user grant permission for the at least one email message to be automatically propagated to the first email user.

17. The computer program product of claim **11**, further comprising determining if the at least one email message is a duplicate email.

18. The computer program product of claim **10**, wherein the trust relationship includes a bidirectional trust relationship and at least one email message received by the first email user is propagated to the second email user based upon, at least in part, the bidirectional trust relationship.

19. A computing system including a processor and memory configured to perform operations comprising:

establishing, via a computing device, a trust relationship between a first email user and at least a second email user, wherein establishing the trust relationship between the first email user and the second email user includes:

sending, between the first email user and the second email user, an offer through one or more visual windows defining the trust relationship, wherein the one or more visual windows include one or more selectable rules defining which one or more email messages to propagate between the first email user and the second email user; and

receiving an acceptance of the offer and a selection of the one or more selectable rules through the one or more visual windows, wherein the acceptance of the offer establishes the trust relationship.

20. The computing system of claim **19** further comprising automatically propagating at least one email message received by the second email user to the first email user based upon, at least in part, the trust relationship.

21. The computing system of claim **20**, wherein the trust relationship is based upon, at least in part, at least one of:

an attribute of an original sender of the at least one email message; and

an attribute of the at least one email message.

22. The computing system of claim **20**, wherein establishing the trust relationship further includes receiving a request that the second email user grant permission for the at least one email message to be automatically propagated to the first email user.

23. The computing system of claim **19**, wherein the trust relationship includes a bidirectional trust relationship and at least one email message received by the first email user is

propagated to the second email user based upon, at least in part, the bidirectional trust relationship.

* * * * *