"Mobile Messaging System and Methods of Operating such a Mobile Messaging System"

FIELD OF THE INVENTION

The present invention relates to a mobile messaging system and methods of operating such a mobile messaging system. The mobile messaging system is particularly adapted to facilitate the delivery of messages to a mobile phone network where the primary form of such external messages is e-mail.

BACKGROUND TO THE INVENTION

The following discussion of the background to the invention is intended to facilitate an understanding of the present invention. It should be appreciated that the discussion is not an acknowledgment or admission that any of the material referred to was published, known or part of the common general knowledge in any jurisdiction as at the priority date of the application.

Mobile messaging services are a common feature of most mobile phone networks. Typically, such mobile messaging is provided by way of the Short Messaging Service ("**SMS**"). However, in some countries (such as Japan), mobile phone networks are unable to implement the SMS system through the majority of the mobile phones then available in the market and therefore provide mobile messaging services through other means. For instance the mobile messages may be sent primarily as e-mail or through a Simple Mail Transfer Protocol ("**SMTP**") process.

The problem with such alternate systems, as described above, is that the unique identifier used to facilitate messages between subscribers to the mobile phone network is the subscriber's e-mail address. Recent adaptations of this system have allowed for a relationship to be created between a subscriber's e-mail address and their mobile phone number. In this manner, the subscriber can identify the recipient of a mobile message by their mobile phone number – the telecommunications carrier using the created relationship to re-route the mobile message to the recipient via their e-mail address.

The problem with these adapted systems is that the subscriber who originates the mobile message has no way of knowing whether the recipient has created

the required relationship between their e-mail address and mobile phone number. If the recipient hasn't created the required relationship, the message can not be sent, with one exception. In certain situations the telecommunication carrier may allow intra-network instant messaging using only mobile phone number as identifiers of the recipient. However, inter-network systems still require the e-mail address as the identifier of the recipient.

It is therefore important for such adapted systems to ensure that their subscribers create the relationship between their e-mail address and mobile phone number. This has traditionally been addressed by campaigning for each subscriber to send an e-mail to their telecommunications carrier including their mobile phone number. However, such campaigns have met with mixed success.

It is therefore an object of the present invention to overcome, at least in part, some or all of the aforementioned problems.

SUMMARY OF THE INVENTION

Throughout this document, unless otherwise indicated to the contrary, the frame "comprising", "consisting of", and the like, are to be construed as inclusive and not exhaustive.

In accordance with a first aspect of the invention there is a mobile messaging system comprising:

a communications device;

a mobile messaging application; and

a mobile phone whose method of inter-network messaging is electronic mail,

where the communications device is operable to send a communication message destined for an owner of the mobile phone to the mobile messaging application, the means for identifying the recipient of the message being by way of the mobile phone number assigned to the mobile phone and where the mobile messaging application initiates a control communication link with an intra-network instant messaging system of the telecommunications network to

which the mobile phone is connected and commands the intra-network instant messaging system to send a pre-determined registration message to the mobile phone and wherein, subsequent to receipt of the pre-determined registration message, the owner of the mobile phone replies to the mobile messaging application by electronic mail with their mobile phone number, the mobile messaging system then records the relationship between the owner of the mobile phone's electronic mail address and the mobile phone number assigned to the mobile phone to facilitate future inter-network message communication with the owner of the mobile phone and, after recording of the relationship, operates to send the communication message to the owner by way of their electronic mail address.

The mobile messaging application may comprise a delivery module, a registration module and a database, such that the delivery module receives the communication message, analyses the communication message to determine the mobile phone number assigned to the mobile phone and a message component of the communication message and forwards such details to the registration module and where the registration module is designed to receive the electronic mail reply from the owner of the mobile phone, correlate the mobile phone number stated in the electronic mail reply with details of the mobile phone numbers forwarded by the delivery module and, on determination of a match, to, firstly, store the relationship between the electronic mail address used to send the electronic mail reply and the mobile phone number stated in the electronic mail reply in the database and, secondly, to forward the matching message component of the communication message to the mobile phone by way of the recorded electronic mail address.

The registration message may include a unique code that the owner of the mobile phone is required to include in their electronic mail reply for security reasons.

The mobile messaging application may operate to send a message to the communications device indicating that the communication message has been received but not yet forwarded to the mobile phone.

The mobile messaging application may operate to send a message to the communications device indicating that the message component of the communication message has been sent to the mobile phone following storage of the relationship between the electronic mail address used to send the electronic mail reply and the mobile phone number stated in the electronic mail reply in the database.

The mobile messaging system may further operate in such a manner as to record a relationship between the mobile phone number and electronic mail address of the originator of the communication message in a manner similar to that described above.

In accordance with a second aspect of the present invention there is a mobile messaging system comprising:

a communications device;

a mobile messaging application; and

a recipient mobile phone whose method of inter-network messaging is electronic mail,

at least one facilitator mobile phone

where the communications device is operable to send a communication message destined for an owner of the recipient mobile phone to the mobile messaging application, the means for identifying the recipient of the message being by way of the mobile phone number assigned to the mobile phone and where the mobile messaging system then controls the at least one facilitator mobile phone connected to the same telecommunication network as the recipient mobile phone to send a pre-determined registration message to the recipient mobile phone using the intra-network instant messaging system of that telecommunication network and wherein, subsequent to receipt of the pre-determined registration message, the owner of the mobile phone replies to the at least one facilitator mobile phone with their e-mail address, the mobile messaging system then records the relationship between the owner of the mobile phone's electronic mail address and the mobile phone number assigned to the mobile phone to facilitate future inter-network message communication with the owner of the mobile phone and, after recording of the

relationship, operates to send the communication message to the owner by way of their electronic mail address.

The mobile messaging application may comprise a delivery module, a registration module and a database, such that the delivery module receives the communication message, analyses the communication message to determine the mobile phone number assigned to the mobile phone and a message component of the communication message and forwards such details to the registration module and where the registration module is designed to receive the intra-network message reply made by the owner of the mobile phone as forwarded by the at least one facilitator mobile phone, correlate the mobile phone number used to send the intra-network message reply with details of the mobile phone numbers forwarded by the delivery module and, on determination of a match, to, firstly, store the relationship between the electronic mail address stated in the intra-network message reply and the mobile phone number used to send the intra-network message reply in the database and, secondly, to forward the matching message component of the communication message to the mobile phone by way of the recorded electronic mail address.

The registration message may include a unique code that the owner of the mobile phone is required to include in their intra-network message reply for security reasons.

The mobile messaging application may operate to send a message to the communications device indicating that the communication message has been received but not yet forwarded to the mobile phone.

The mobile messaging application may operate to send a message to the communications device indicating that the message component of the communication message has been sent to the mobile phone following storage of the relationship between the mobile phone number used to send the intra-network message reply and the e-mail address stated in the intra-network message reply in the database.

The at least one facilitator mobile phone may be a single mobile phone operable to have multiple phone numbers by way of a short code and a unique identifier.

The mobile messaging system may further operate in such a manner as to record a relationship between the mobile phone number and electronic mail address of the originator of the communication message in a manner similar to that described above.

In accordance with a third aspect of the invention there is a mobile messaging system comprising:

a communications device;

a mobile messaging application; and

a mobile phone whose method of inter-network messaging is electronic mail,

where the communications device is operable to send a communication message destined for an owner of the mobile phone to the mobile messaging application, the means for identifying the recipient of the message being by way of the mobile phone number assigned to the mobile phone and where the mobile messaging application initiates a control communication link with an intra-network instant messaging system of the telecommunications network to which the mobile phone is connected and commands the intra-network instant messaging system to send a pre-determined registration message to the mobile phone which includes a unique identifier and wherein, subsequent to receipt of the pre-determined registration message, the owner of the mobile phone replies to the mobile messaging application by electronic mail with the unique identifier, the mobile messaging system then records the relationship between the owner of the mobile phone's electronic mail address and the mobile phone number assigned to the mobile phone, as identified by the unique identifier, to facilitate future inter-network message communication with the owner of the mobile phone and, after recording of the relationship, operates to send the communication message to the owner by way of their electronic mail address.

The mobile messaging application may comprise a delivery module, a registration module and a database, such that the delivery module receives the communication message, analyses the communication message to determine the mobile phone number assigned to the mobile phone and a message component of the communication message, generates a unique code and forwards such details and unique code to the registration module and where the registration module is designed to receive the electronic mail reply from the owner of the mobile phone, correlate the unique code stated in the electronic mail reply with the unique codes forwarded by the delivery module and, on determination of a match, to, firstly, store the relationship between the electronic mail address used to send the electronic mail reply and the mobile phone number stated in the electronic mail reply in the database and, secondly, to forward the matching message component of the communication message to the mobile phone by way of the recorded electronic mail address.

The mobile messaging system may further operate in such a manner as to record a relationship between the mobile phone number and electronic mail address of the originator of the communication message in a manner similar to that described above.

In accordance with a fourth aspect of the invention there is a method for sending a mobile message to a mobile phone whose method of inter-network messaging is electronic mail comprising the steps of:

receiving a communication message sent by way of a communications device, the communication message identifying the intended recipient by way of a mobile phone number;

initiating a control communication link with an intra-network instant messaging system of a telecommunications network to which a mobile phone having the mobile phone number assigned to it is connected;

commanding the intra-network instant messaging system to send a pre-determined registration message to the mobile phone;

receiving an electronic mail reply to the pre-determined registration message including the mobile phone number;

recording the relationship between the electronic mail address used to send the electronic mail reply and the mobile phone number included in the electronic mail reply to facilitate future inter-network message communication with the mobile phone;

operating to send the communication message to the mobile phone by way of its recorded associated electronic mail address.

Preferably, the method further comprises the steps of:

analysing the communication message to determine the mobile phone number assigned to the mobile phone and a message component

communicating the message component and mobile phone number to a registration module;

communicating the electronic mail reply to the registration module;

correlating the mobile phone number stated in the electronic mail reply with details of the communicated mobile phone numbers;

storing in a database the relationship between the electronic mail address used to send the electronic mail reply and the mobile phone number stated in the electronic mail reply on identification of a correlation; and

forwarding the correlating message component to the mobile phone by way of the recorded electronic mail address.

The method may also include either of the following steps:

sending a message to the communications device indicating that the communication message has been received but not yet forwarded to the mobile phone.

sending a message to the communications device indicating that the message component of the communication message has been sent to the mobile phone.

In a preferred embodiment the method also includes the steps of:

generating a unique code for inclusion in the registration message.

correlating the unique code with a code included in the electronic mail reply.

In accordance with a fifth aspect of the invention there is a method for sending a mobile message to a mobile phone whose method of inter-network messaging is electronic mail comprising the steps of:

receiving a communication message sent by way of a communications device, the communication message identifying the intended recipient by way of a mobile phone number;

initiating a control communication link with at least one facilitator mobile phone connected to the same telecommunications network as the mobile phone the mobile phone number is assigned to.

sending a pre-determined registration message via the at least one facilitator mobile phone using the intra-network instant messaging system of the telecommunications network to the mobile phone;

receiving an intra-network message reply to the pre-determined registration message including an electronic mail address;

recording the relationship between the mobile phone number used to send the intra-network message reply and the electronic mail address included in the intra-network message reply to facilitate future inter-network message communication with the mobile phone;

operating to send the communication message to the mobile phone by way of its recorded associated electronic mail address.

The method may further include the steps of:

analysing the communication message to determine the mobile phone number assigned to the mobile phone and a message component

communicating the message component and mobile phone number to a registration module;

communicating the intra-network message reply to the registration module;

correlating the mobile phone number used to send the intra-network message reply with details of the communicated mobile phone numbers;

storing in a database the relationship between the electronic mail address stated in the intra-network message reply and the mobile phone number used to send the intra-network message reply on identification of a correlation; and

forwarding the correlating message component to the mobile phone by way of the recorded electronic mail address.

The method may also include either of the following steps:

sending a message to the communications device indicating that the communication message has been received but not yet forwarded to the mobile phone.

sending a message to the communications device indicating that the message component of the communication message has been sent ot the mobile phone.

In a preferred embodiment the method also includes the steps of:

generating a unique code for inclusion in the registration message.

correlating the unique code with a code included in the electronic mail reply.

In accordance with a sixth aspect of the invention there is a method for sending a mobile message to a mobile phone whose method of inter-network messaging is electronic mail comprising the steps of:

receiving a communication message sent by way of a communications device, the communication message identifying the intended recipient by way of a mobile phone number;

initiating a control communication link with an intra-network instant messaging system of a telecommunications network to which a mobile phone having the mobile phone number assigned to it is connected;

commanding the intra-network instant messaging system to send a pre-determined registration message including a generated unique identifier to the mobile phone;

receiving an electronic mail reply to the pre-determined registration message including the mobile phone number and a unique code;

recording the relationship between the electronic mail address used to send the electronic mail reply and the mobile phone number included in the electronic mail reply to facilitate future inter-network message communication with the mobile phone if the unique code matches a generated unique identifier;

operating to send the communication message to the mobile phone by way of its recorded associated electronic mail address.

In accordance with a seventh aspect of the invention there is a mobile messaging application operable to receive a communication message from a communications device, the means for identifying the recipient of the communication message being by way of a mobile phone number assigned to a mobile phone and operable to initiate a control communication link with an intra-network instant messaging system of a telecommunications network to which the mobile phone is connected and command the intra-network instant messaging system to send a pre-determined registration message to the mobile phone, the mobile messaging application being further operable to receive an electronic mail reply to the pre-determined registration message including the mobile phone number and record the relationship between the electronic mail address used to send the electronic mail reply and the mobile phone number mentioned in the electronic mail reply and thereafter send the communication message to the owner by way of their recorded electronic mail address.

The mobile messaging application may comprise a delivery module, a registration module and a database, such that the delivery module receives the communication message, analyses the communication message to determine the mobile phone number assigned to the mobile phone and a message component of the communication message and forwards such

details to the registration module and where the registration module is designed to receive the electronic mail reply from the owner of the mobile phone, correlate the mobile phone number stated in the electronic mail reply with details of the mobile phone numbers forwarded by the delivery module and, on determination of a match, to, firstly, store the relationship between the electronic mail address used to send the electronic mail reply and the mobile phone number stated in the electronic mail reply in the database and, secondly, to forward the matching message component of the communication message to the mobile phone by way of the recorded electronic mail address.

The mobile messaging application may be operable to generate a unique code for inclusion in the registration message.

The mobile messaging application may operate to send a message to the communications device indicating that the communication message has been received but not yet forwarded to the mobile phone.

The mobile messaging application may operate to send a message to the communications device indicating that the message component of the communication message has been sent to the mobile phone following storage of the relationship between the electronic mail address used to send the electronic mail reply and the mobile phone number stated in the electronic mail reply in the database.

In accordance with an eighth aspect of the present invention there is a mobile messaging application operable to receive a communication message from a communications device, the means for identifying the recipient of the communication message being by way of a mobile phone number assigned to a mobile phone and operable to initiate a control at least one facilitator mobile phone connected to the telecommunications network to which the mobile phone is also connected and thereby command the at least one facilitator mobile phone to send a registration message using the intra-network instant messaging system of the telecommunications network to which the mobile phone is connected to the mobile phone, the mobile messaging application being further operable to receive an intra-network message reply to the pre-determined registration message including the electronic mail address of the

owner of the mobile phone and record the relationship between the electronic mail address included in the intra-network message reply and the mobile phone number used to send the intra-network message reply and thereafter send the communication message to the owner by way of their recorded electronic mail address.

The mobile messaging application may comprise a delivery module, a registration module and a database, such that the delivery module receives the communication message, analyses the communication message to determine the mobile phone number assigned to the mobile phone and a message component of the communication message and forwards such details to the registration module and where the registration module is designed to receive the intra-network message reply made by the owner of the mobile phone as forwarded by the at least one facilitator mobile phone, correlate the mobile phone number used to send the intra-network message reply with details of the mobile phone numbers forwarded by the delivery module and, on determination of a match, to, firstly, store the relationship between the electronic mail address stated in the intra-network message reply and the mobile phone number used to send the intra-network message reply in the database and, secondly, to forward the matching message component of the communication message to the mobile phone by way of the recorded electronic mail address.

The mobile messaging application may be operable to generate a unique code for inclusion in the registration message.

The mobile messaging application may operate to send a message to the communications device indicating that the communication message has been received but not yet forwarded to the mobile phone.

The mobile messaging application may operate to send a message to the communications device indicating that the message component of the communication message has been sent to the mobile phone following storage of the relationship between the mobile phone number used to send the intra-network message reply and the e-mail address stated in the intra-network message reply in the database.

In accordance with an ninth aspect of the present invention there is a mobile messaging application operable to receive a communication message from a communications device, the means for identifying the recipient of the communication message being by way of a mobile phone number assigned to a mobile phone and operable to initiate a control at least one facilitator mobile phone connected to the telecommunications network to which the mobile phone is also connected and thereby command the at least one facilitator mobile phone to send a registration message, including a generated unique identifier, using the intra-network instant messaging system of the telecommunications network to which the mobile phone is connected to the mobile phone, the mobile messaging application being further operable to receive an intra-network message reply to the pre-determined registration message including the electronic mail address of the owner of the mobile phone and record the relationship between the electronic mail address included in the intra-network message reply and the mobile phone number used to send the intra-network message reply and thereafter send the communication message to the owner by way of their recorded electronic mail address.

The mobile messaging application may comprise a delivery module, a registration module and a database, such that the delivery module receives the communication message, analyses the communication message to determine the mobile phone number assigned to the mobile phone and a message component of the communication message, generates a unique code and forwards such details and unique code to the registration module and where the registration module is designed to receive the electronic mail reply from the owner of the mobile phone, correlate the unique code stated in the electronic mail reply with the unique codes forwarded by the delivery module and, on determination of a match, to, firstly, store the relationship between the electronic mail address used to send the electronic mail reply and the mobile phone number stated in the electronic mail reply in the database and, secondly, to forward the matching message component of the communication message to the mobile phone by way of the recorded electronic mail address.

In accordance with a tenth aspect of the invention there is a computer readable medium having recorded thereon:

means for receiving a communication message sent by way of a communications device, the communication message identifying the intended recipient by way of a mobile phone number;

means for initiating a control communication link with an intra-network instant messaging system of a telecommunications network to which a mobile phone having the mobile phone number assigned to it is connected;

means for commanding the intra-network instant messaging system to send a pre-determined registration message to the mobile phone;

means for receiving an electronic mail reply to the pre-determined registration message including the mobile phone number;

means for recording the relationship between the electronic mail address used to send the electronic mail reply and the mobile phone number included in the electronic mail reply to facilitate future inter-network message communication with the mobile phone;

means for operating to send the communication message to the mobile phone by way of its recorded associated electronic mail address.

Preferably, the computer readable medium also has recorded thereon:

means for analysing the communication message to determine the mobile phone number assigned to the mobile phone and a message component

means for communicating the message component and mobile phone number to a registration module;

means for communicating the electronic mail reply to the registration module;

means for correlating the mobile phone number stated in the electronic mail reply with details of the communicated mobile phone numbers;

means for storing in a database the relationship between the electronic mail address used to send the electronic mail reply and the mobile phone number stated in the electronic mail reply on identification of a correlation; and

means for forwarding the correlating message component to the mobile phone by way of the recorded electronic mail address.

The computer readable medium may also have either of the following recorded thereon:

means for sending a message to the communications device indicating that the communication message has been received but not yet forwarded to the mobile phone.

means for sending a message to the communications device indicating that the message component of the communication message has been sent to the mobile phone.

Preferably, the computer readable medium also has recorded thereon:

means for generating a unique code for inclusion in the registration message.

means for correlating the unique code with a code included in the electronic mail reply.

In accordance with an eleventh aspect of the invention there is a computer readable medium having recorded thereon:

means for receiving a communication message sent by way of a communications device, the communication message identifying the intended recipient by way of a mobile phone number;

means for initiating a control communication link with at least one facilitator mobile phone connected to the same telecommunications network as the mobile phone the mobile phone number is assigned to.

means for sending a pre-determined registration message via the at least one facilitator mobile phone using the intra-network instant

messaging system of the telecommunications network to the mobile phone;

means for receiving an intra-network message reply to the pre-determined registration message including an electronic mail address;

means for recording the relationship between the mobile phone number used to send the intra-network message reply and the electronic mail address included in the intra-network message reply to facilitate future inter-network message communication with the mobile phone;

means for operating to send the communication message to the mobile phone by way of its recorded associated electronic mail address.

The computer readable medium may also have recorded thereon:

means for analysing the communication message to determine the mobile phone number assigned to the mobile phone and a message component

means for communicating the message component and mobile phone number to a registration module;

means for communicating the intra-network message reply to the registration module;

means for correlating the mobile phone number used to send the intra-network message reply with details of the communicated mobile phone numbers;

means for storing in a database the relationship between the electronic mail address stated in the intra-network message reply and the mobile phone number used to send the intra-network message reply on identification of a correlation; and

means for forwarding the correlating message component to the mobile phone by way of the recorded electronic mail address.

The computer readable medium may also have either of the following recorded thereon:

means for sending a message to the communications device indicating that the communication message has been received but not yet forwarded to the mobile phone.

means for sending a message to the communications device indicating that the message component of the communication message has been sent to the mobile phone.

The computer readable medium may also have recorded thereon:

means for generating a unique code for inclusion in the registration message.

means for correlating the unique code with a code included in the electronic mail reply.

In accordance with a twelfth aspect of the invention there is a computer readable medium having recorded thereon:

means for receiving a communication message sent by way of a communications device, the communication message identifying the intended recipient by way of a mobile phone number;

means for initiating a control communication link with an intra-network instant messaging system of a telecommunications network to which a mobile phone having the mobile phone number assigned to it is connected;

means for commanding the intra-network instant messaging system to send a pre-determined registration message including a generated unique identifier to the mobile phone;

means for receiving an electronic mail reply to the pre-determined registration message including the mobile phone number and a unique code;

means for recording the relationship between the electronic mail address used to send the electronic mail reply and the mobile phone number included in the electronic mail reply to facilitate future inter-network message communication with the mobile phone if the unique code matches a generated unique identifier;

means for sending the communication message to the mobile phone by way of its recorded associated electronic mail address.

BRIEF DESCRIPTION OF THE DRAWINGS

The following invention will be described with reference to the following drawings of which:

Figure 1 is a schematic of a first embodiment of the mobile messaging system in accordance with the present invention.

Figure 2 is a schematic of a second embodiment of the mobile messaging system in accordance with the present invention.

Figure 3 is a schematic of a third embodiment of the mobile messaging system in accordance with the present invention.

PREFERRED EMBODIMENTS OF THE INVENTION

In accordance with a first embodiment of the invention there is a mobile messaging system 10. The mobile messaging system 10 comprises:

- a communications device 22;
- a first telecommunications network 14;
- a mobile phone 24; and
- a second telecommunications network 18.

The communications device 22 is operable using the first telecommunications network 14. The mobile phone 24 is operable using the second telecommunications network 18.

The first telecommunications network 14 further comprises a mobile messaging application 26. The mobile messaging application 26 includes a delivery module 28, a registration module 30 and a database 32. The delivery module 28 is able to receive messages sent to it from the communications device 22 using the first telecommunications network 14. The delivery module 28 is also in data and command communication with the registration module 30 and the second telecommunications network 18.

The registration module 30 is in data communication with the database 32.

The invention will now be described in the context of its intended use.

A subscriber 12 of a first telecommunications network 14 (hereafter the "**originator**") decides to send a mobile message 16 to a subscriber 20 of a second telecommunications network 18 (hereafter the "**recipient**"). In order to do this, the originator 12 connects to the mobile messaging application 26 of the first telecommunications network 14 using a first communications device 22.

Upon connection to the mobile messaging application 26, the mobile messaging application 26 prompts the originator 12 for the mobile phone number of the recipient 20. In response, the originator 12 enters the mobile phone number of the recipient 20. Once entered, the mobile messaging application 26 prompts the originator 12 for the actual message. Again, in response, the originator 12 enters the message to be provided to the recipient 20.

The originator 12 then indicates that the message is ready for sending – for example by pressing a "Send" activation button (not shown) on the first communications device 22.

Upon the "Send" activation button being pressed, the mobile message 16 (being a combination of the recipient's mobile phone number and the message) is then passed to the delivery module 28.

The delivery module 28 receives the mobile message 16 and parses the data representative of the mobile message 16 to separate the mobile phone number from the message. The delivery module 28 then checks with the registration module 30 to determine whether a record has been made of a relationship between this mobile phone number and an e-mail address in database 32. If such a record is found to exist in database 32, the mobile message 16 is then transformed such that the message is directed to the e-mail address of the recipient 20 (as stated in the recorded relationship) rather than their mobile phone number. The message is then sent using the normal e-mailing systems for the recipient's mobile phone 24.

The following description applies when no such record exists in the database 32.

The mobile phone number is then analysed to identify the mobile phone network 18 to which the recipient 20 is a subscriber.

If the analysis of the mobile phone number identifies a mobile phone network known to the delivery module 28, the delivery module 28 initiates a connection with the intra-network instant messaging system of the mobile phone network (not shown) concerned. In this example, this results in the delivery module 28 initiating a connection with the intra-network instant messaging system 27 of the second telecommunications network 18.

Upon connection, the delivery module 28 issues commands to the intra-network instant messaging system 27 to send a registration message 34 to the recipient 20. In response to such commands, the intra-network instant messaging system 27 generates the required registration message 34 and sends it to the recipient 20 by way of their mobile phone number.

In this example, the registration message 34 informs the recipient 20 that they have received a mobile message 16 from the originator 12 (as referenced by their mobile phone number) and requests that they register the relationship between their e-mail address and mobile phone number. The registration message 34 also has a unique code inserted therein as generated by the delivery module 28.

The registration message 34 also includes instructions to the recipient 20 on how to register the relationship between their e-mail address and mobile phone number and an assurance that on registration they will get to see the mobile message 16 sent by the originator 12.

At the same time as the delivery module 28 generates the unique code, it passes the unique code with the mobile phone number of the recipient and the message to the registration module 30.

In order to register the relationship between their e-mail address and mobile phone number, the recipient 20 sends an e-mail reply 36 to the registration module 30 of the mobile messaging application 26 with their mobile phone number and the unique code. Ideally, this e-mail reply 36 is sent using the recipient's mobile phone 24.

On receipt of the e-mail reply 36 from the recipient 20, the registration module 30 parses the message to identify the mobile phone number of the recipient 20 and the unique code. The registration module 30 also parses the sender field of the e-mail reply 36 to identify the recipient's e-mail address. If the combination of the mobile phone number and unique code identified during these parses matches a mobile phone number and unique code combination it has received from the delivery module 28, the registration module 30 then proceeds to formalise a record of the relationship between the e-mail address and mobile phone number identified during the parses and store this in database 32.

The delivery module 28 then operates to transform the mobile message 16 such that the message is directed to the e-mail address of the recipient 20 (as stated in the newly recorded relationship) rather than their mobile phone number. The mobile message 16 is then sent by the mobile messaging application 26 using the normal e-mailing systems for mobile phones.

A description of a second embodiment of the invention 100, where like numerals reference like parts, will now be described.

The originator 12 decides to send a mobile message 16 to the recipient 20. In order to do this, the originator 12 connects to a mobile messaging application 26 of the first telecommunications carrier 14 using a first communications device 22.

Upon connection to the mobile messaging application 26, the mobile messaging application 26 prompts the originator 12 for the mobile phone number of the recipient 20. In response, the originator 12 enters the mobile phone number of the recipient 20. Once entered, the mobile messaging application 26 prompts the originator 12 for the actual message. Again, in response, the originator 12 enters the message to be provided to the recipient 20.

The originator 12 then indicates that the message is ready for sending – for example by pressing a "Send" activation button on the first communications device 22.

Upon the "Send" activation button being pressed, the mobile message 16 (being a combination of the recipient's 20 mobile phone number and the message) is then passed to the delivery module 28 of the mobile messaging application 26.

The delivery module 28 receives the mobile message 16 and parses the data representative of the mobile message 16 to separate the mobile phone number from the message. The delivery module 28 then checks with the registration module 30 to determine whether a record has been made of a relationship between this mobile phone number and an e-mail address. If such a record is found to exist in database 32, the mobile message 16 is then transformed such that the message is directed to the e-mail address of the recipient (as stated in the recorded relationship) rather than their mobile phone number. The message is then sent using the normal e-mailing systems for mobile phones.

The following description applies when no such record exists.

The mobile phone number is then analysed to identify the mobile phone network 18 to which the recipient 20 is a subscriber.

If the analysis of the mobile phone number identifies a mobile phone network 18 known to the delivery module 28, the delivery module 28 initiates communication with one of a plurality of communication devices 102 directly connected to that mobile phone network (in this case being the second telecommunications network 18). The delivery module 28 then sends such commands 33 as are necessary to operate one of the plurality of communication devices 102 to send a registration message 34 to the recipient 20 using the intra-network messaging system 27 of the second telecommunications network 18.

In this example, the registration message 34 informs the recipient that they have received a message from the originator 12 (as referenced by their mobile phone number) and requests that they register the relationship between their e-mail address and mobile phone number. The registration message also has a unique code inserted therein as generated by the delivery module 28.

The registration message 34 also includes instructions to the recipient 20 on how to register the relationship between their e-mail address and mobile phone number and an assurance that on registration they will get to see the mobile message 16 sent by the originator 12.

At the same time as the delivery module 28 generates the unique code, it passes the unique code with the mobile phone number of the recipient 20 and the message to the registration module 30.

In order to register the relationship between their e-mail address and mobile phone number, the recipient 20 sends a reply 38 using the intra-network messaging system 27 to the communication device 22 that sent the registration message 36. This reply 38 includes the e-mail address of the recipient 20 and the unique code and must be sent via the recipient's mobile phone.

On receipt of the reply 38 from the recipient 20, the registration module 30 parses the message to identify the e-mail address of the recipient 20 and the unique code. The registration module 30 also analyses the phone number that sent the reply 38, using standard caller identification techniques, to determine the mobile phone number of the recipient 20. If the combination of the identified mobile phone number and parsed unique code matches a mobile phone number and unique code combination it has received from the delivery module 28, the registration module 30 then proceeds to formalise a record of the relationship between the parsed e-mail address and identified mobile phone number and store it in database 32.

The delivery module 28 then operates to transform the message such that the message is directed to the e-mail address of the recipient 20 (as stated in the newly recorded relationship) rather than their mobile phone number. The message 16 is then sent using the normal e-mailing systems for mobile phones.

In accordance with a third embodiment of the invention, where like numerals reference like parts, there is a mobile messaging system 200. The mobile messaging system of this embodiment is the same as that provided in the first embodiment of the invention with two exceptions:

a) the originator is required to enter their own mobile phone number at the time of sending the mobile message 16; and

b) at the time of checking if a relationship is recorded in the database 32 between the recipient's 18 mobile phone number and electronic mail address, a similar check is performed to see whether a relationship is recorded in the database 32 between the originator's 12 mobile phone number and electronic mail address. If there is no relationship recorded between the originator's 12 mobile phone number and electronic mail address in database 32, the following procedure is followed.

The delivery module 28 initiates a connection with the intra-network messaging system 27 of the first telecommunications network 18. Upon connection, the delivery module 28 issues commands to the intra-network instant messaging system 27 to send an originator registration message 202 to the originator 12. In response to such commands, the intra-network instant messaging system 27 generates the required originator registration message 202 and sends it to the originator 20 by way of their mobile phone number. The originator registration message 202 informs the originator 12 that they have no recorded relationship between their electronic mail address and mobile phone number through which to receive a reply from the recipient 20 and a unique code.

The originator registration message 202 also includes instructions to the originator 12 on how to register the relationship between their e-mail address and mobile phone number.

At the same time as the delivery module 28 generates the unique code, it passes the unique code with the mobile phone number of the recipient and the message to the registration module 30.

In order to register the relationship between their e-mail address and mobile phone number, the originator 12 sends an electronic mail reply 204 to the registration module 30 of the mobile messaging application 26 with their mobile phone number and the unique code. Ideally, this electronic mail reply 204 is sent using the originator's 12 mobile phone.

On receipt of the electronic mail reply 204 from the recipient 20, the registration module 30 parses the message to identify the mobile phone number of the originator 12 and the unique code. The registration module 30 also parses the sender field of the e-mail reply 36 to identify the originator's electronic mail address. If the combination of the mobile phone number and unique code identified during these parses matches a mobile phone number and unique code combination it has received from the delivery module 28, the registration module 30 then proceeds to formalise a record of the relationship between the e-mail address and mobile phone number identified during the parses and store this in database 32.

It should be appreciated by the person skilled in the art that the present invention is not limited to the embodiments described. In particular the following additional features may be incorporated to form yet further embodiments:

- The unique identifier may be omitted as this is provided for security reasons only.
- The originator 12 may be informed by the delivery system 28 that it has received the message intended for the recipient 20 and informed the recipient 20 that the message is awaiting delivery to them, pending formal recording of the relationship between their mobile phone number and e-mail address.
- The originator 12 may further be informed on actual delivery of the message to the recipient 20 following registration.
- In a variation on the first embodiment of the invention, the e-mail reply may omit the mobile phone number of the recipient. In this variation, the unique identifier plays a key role in matching the mobile phone number of the recipient to their e-mail address (as provided for in the e-mail reply).
- In a variation on the second embodiment of the invention, the plurality of communication devices may each be associated with an originator's message. In this variation, the unique identifier can be omitted as the one-to-one relationship between the communication device and the

originator's message provides the same level of security as the unique identifier. Further, in this configuration it is possible for an e-mail reply as provided for in the first embodiment of the invention to be utilised.

- In a further variation on the second embodiment of the invention, the plurality of communication devices may be replaced by a single communication device operating via a short code. This device may then add a reference code to the short code to facilitate the forwarding of the appropriate message following registration by the recipient.

- The method for entering the message and phone number that will form the mobile message 16 can be varied. For instance, in an alternative arrangement, the method for entering the message and phone number may mimic the current system for sending a Short Messaging System ("**SMS**") message.

- In yet a further alternative arrangement applicable to all embodiments described above, the registration message 36 may include a Universal Resource Locator ("**URL**") of a website or wapsite. If the phone is enabled to do so, the recipient 20 may simply click on the URL to access the website or wapsite (as appropriate) using any internet connected device, for example, a personal computer or smartphone. Alternatively, they may be required to enter the URL themselves into an internet browser to access the website/wapsite. Upon accessing the website/wapsite, the recipient 20 enters their electronic mail address. In return, the registration module 30 sends a further message to the recipient 20 which includes a unique code, a shortcode and instructions for the user. The user then rings the shortcode and enteres the unique code to verify that they are the intended recipient 20. The mobile message is then forwarded to the recipient 20 as described above on verification of the unique code.

- Variations on the third embodiment may be made as described above. To elaborate, changes may be made to allow the user to enter their electronic mail address at the website rather than their mobile phone number. Alternatively, communication with the mobile phone number

of the originator 12 may be performed through a plurality of communication devices as described in the second embodiment of the invention.

It should be further appreciated by the person skilled in the art that the features described above, where not mutually exclusive, can be combined to form yet further embodiments of the invention.

WE CLAIM

1. A mobile messaging system comprising:

a communications device;

a mobile messaging application; and

a mobile phone whose method of inter-network messaging is electronic mail,

where the communications device is operable to send a communication message destined for an owner of the mobile phone to the mobile messaging application, the means for identifying the recipient of the message being by way of the mobile phone number assigned to the mobile phone and where the mobile messaging application initiates a control communication link with an intra-network instant messaging system of the telecommunications network to which the mobile phone is connected and commands the intra-network instant messaging system to send a pre-determined registration message to the mobile phone and wherein, subsequent to receipt of the pre-determined registration message, the owner of the mobile phone replies to the mobile messaging application by electronic mail with their mobile phone number, the mobile messaging system then records the relationship between the owner of the mobile phone's electronic mail address and the mobile phone number assigned to the mobile phone to facilitate future inter-network message communication with the owner of the mobile phone and, after recording of the relationship, operates to send the communication message to the owner by way of their electronic mail address.

2. A mobile messaging system comprising:

a communications device;

a mobile messaging application; and

a recipient mobile phone whose method of inter-network messaging is electronic mail,

at least one facilitator mobile phone

where the communications device is operable to send a communication message destined for an owner of the recipient mobile phone to the mobile messaging application, the means for identifying the recipient of the message being by way of the mobile phone number assigned to the mobile phone and where the mobile messaging system then controls the at least one facilitator mobile phone connected to the same telecommunication network as the recipient mobile phone to send a pre-determined registration message to the recipient mobile phone using the intra-network instant messaging system of that telecommunication network and wherein, subsequent to receipt of the pre-determined registration message, the owner of the mobile phone replies to the at least one facilitator mobile phone with their e-mail address, the mobile messaging system then records the relationship between the owner of the mobile phone's electronic mail address and the mobile phone number assigned to the mobile phone to facilitate future inter-network message communication with the owner of the mobile phone and, after recording of the relationship, operates to send the communication message to the owner by way of their electronic mail address.

3. A mobile messaging system comprising:

a communications device;

a mobile messaging application; and

a mobile phone whose method of inter-network messaging is electronic mail,

where the communications device is operable to send a communication message destined for an owner of the mobile phone to the mobile messaging application, the means for identifying the recipient of the message being by way of the mobile phone number assigned to the mobile phone and where the mobile messaging application initiates a control communication link with an intra-network instant messaging system of the telecommunications network to which the mobile phone is connected and commands the intra-network instant messaging system to send a pre-determined registration message to the mobile phone which

includes a unique identifier and wherein, subsequent to receipt of the pre-determined registration message, the owner of the mobile phone replies to the mobile messaging application by electronic mail with the unique identifier, the mobile messaging system then records the relationship between the owner of the mobile phone's electronic mail address and the mobile phone number assigned to the mobile phone, as identified by the unique identifier, to facilitate future inter-network message communication with the owner of the mobile phone and, after recording of the relationship, operates to send the communication message to the owner by way of their electronic mail address.

4. A method for sending a mobile message to a mobile phone whose method of inter-network messaging is electronic mail comprising the steps of:

receiving a communication message sent by way of a communications device, the communication message identifying the intended recipient by way of a mobile phone number;

initiating a control communication link with an intra-network instant messaging system of a telecommunications network to which a mobile phone having the mobile phone number assigned to it is connected;

commanding the intra-network instant messaging system to send a pre-determined registration message to the mobile phone;

receiving an electronic mail reply to the pre-determined registration message including the mobile phone number;

recording the relationship between the electronic mail address used to send the electronic mail reply and the mobile phone number included in the electronic mail reply to facilitate future inter-network message communication with the mobile phone;

operating to send the communication message to the mobile phone by way of its recorded associated electronic mail address.

5. A method for sending a mobile message to a mobile phone whose method of inter-network messaging is electronic mail comprising the steps of:

receiving a communication message sent by way of a communications device, the communication message identifying the intended recipient by way of a mobile phone number;

initiating a control communication link with at least one facilitator mobile phone connected to the same telecommunications network as the mobile phone the mobile phone number is assigned to.

sending a pre-determined registration message via the at least one facilitator mobile phone using the intra-network instant messaging system of the telecommunications network to the mobile phone;

receiving an intra-network message reply to the pre-determined registration message including an electronic mail address;

recording the relationship between the mobile phone number used to send the intra-network message reply and the electronic mail address included in the intra-network message reply to facilitate future inter-network message communication with the mobile phone;

operating to send the communication message to the mobile phone by way of its recorded associated electronic mail address.

6. A method for sending a mobile message to a mobile phone whose method of inter-network messaging is electronic mail comprising the steps of:

receiving a communication message sent by way of a communications device, the communication message identifying the intended recipient by way of a mobile phone number;

initiating a control communication link with an intra-network instant messaging system of a telecommunications network to which a mobile phone having the mobile phone number assigned to it is connected;

commanding the intra-network instant messaging system to send a pre-determined registration message including a generated unique identifier to the mobile phone;

receiving an electronic mail reply to the pre-determined registration message including the mobile phone number and a unique code;

recording the relationship between the electronic mail address used to send the electronic mail reply and the mobile phone number included in the electronic mail reply to facilitate future inter-network message communication with the mobile phone if the unique code matches a generated unique identifier;

operating to send the communication message to the mobile phone by way of its recorded associated electronic mail address.

7. A mobile messaging application operable to receive a communication message from a communications device, the means for identifying the recipient of the communication message being by way of a mobile phone number assigned to a mobile phone and operable to initiate a control communication link with an intra-network instant messaging system of a telecommunications network to which the mobile phone is connected and command the intra-network instant messaging system to send a pre-determined registration message to the mobile phone; the mobile messaging application being further operable to receive an electronic mail reply to the pre-determined registration message including the mobile phone number and record the relationship between the electronic mail address used to send the electronic mail reply and the mobile phone number mentioned in the electronic mail reply and thereafter send the communication message to the owner by way of their recorded electronic mail address.

8. A mobile messaging application operable to receive a communication message from a communications device, the means for identifying the recipient of the communication message being by way of a mobile phone number assigned to a mobile phone and operable to initiate a control at least one facilitator mobile phone connected to the telecommunications network to which the mobile phone is also connected and thereby command the at least one facilitator mobile phone to send a registration message using the intra-network instant messaging system of the telecommunications network to which the mobile phone is connected to the mobile phone, the mobile messaging application being further operable to receive an intra-network message reply to the pre-determined

registration message including the electronic mail address of the owner of the mobile phone and record the relationship between the electronic mail address included in the intra-network message reply and the mobile phone number used to send the intra-network message reply and thereafter send the communication message to the owner by way of their recorded electronic mail address.

9. A mobile messaging application operable to receive a communication message from a communications device, the means for identifying the recipient of the communication message being by way of a mobile phone number assigned to a mobile phone and operable to initiate a control at least one facilitator mobile phone connected to the telecommunications network to which the mobile phone is also connected and thereby command the at least one facilitator mobile phone to send a registration message, including a generated unique identifier, using the intra-network instant messaging system of the telecommunications network to which the mobile phone is connected to the mobile phone, the mobile messaging application being further operable to receive an intra-network message reply to the pre-determined registration message including the electronic mail address of the owner of the mobile phone and record the relationship between the electronic mail address included in the intra-network message reply and the mobile phone number used to send the intra-network message reply and thereafter send the communication message to the owner by way of their recorded electronic mail address.

10. A computer readable medium having recorded thereon:

means for receiving a communication message sent by way of a communications device, the communication message identifying the intended recipient by way of a mobile phone number;

means for initiating a control communication link with an intra-network instant messaging system of a telecommunications network to which a mobile phone having the mobile phone number assigned to it is connected;

means for commanding the intra-network instant messaging system to send a pre-determined registration message to the mobile phone;

means for receiving an electronic mail reply to the pre-determined registration message including the mobile phone number;

means for recording the relationship between the electronic mail address used to send the electronic mail reply and the mobile phone number included in the electronic mail reply to facilitate future inter-network message communication with the mobile phone;

means for operating to send the communication message to the mobile phone by way of its recorded associated electronic mail address.

11. A computer readable medium having recorded thereon:

means for receiving a communication message sent by way of a communications device, the communication message identifying the intended recipient by way of a mobile phone number;

means for initiating a control communication link with at least one facilitator mobile phone connected to the same telecommunications network as the mobile phone the mobile phone number is assigned to.

means for sending a pre-determined registration message via the at least one facilitator mobile phone using the intra-network instant messaging system of the telecommunications network to the mobile phone;

means for receiving an intra-network message reply to the pre-determined registration message including an electronic mail address;

means for recording the relationship between the mobile phone number used to send the intra-network message reply and the electronic mail address included in the intra-network message reply to facilitate future inter-network message communication with the mobile phone;

means for operating to send the communication message to the mobile phone by way of its recorded associated electronic mail address.

12. A computer readable medium having recorded thereon:

means for receiving a communication message sent by way of a communications device, the communication message identifying the intended recipient by way of a mobile phone number;

means for initiating a control communication link with an intra-network instant messaging system of a telecommunications network to which a mobile phone having the mobile phone number assigned to it is connected;

means for commanding the intra-network instant messaging system to send a pre-determined registration message including a generated unique identifier to the mobile phone;

means for receiving an electronic mail reply to the pre-determined registration message including the mobile phone number and a unique code;

means for recording the relationship between the electronic mail address used to send the electronic mail reply and the mobile phone number included in the electronic mail reply to facilitate future inter-network message communication with the mobile phone if the unique code matches a generated unique identifier;

means for sending the communication message to the mobile phone by way of its recorded associated electronic mail address.