

A MESSAGING METHOD AND SYSTEM

Field of the Invention

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The present invention relates to a messaging method and system for implementing the method. In particular, although not exclusively, the invention relates to a method for sending text messages from a conventional telephone to a text receiving device and for sending text messages from a text messaging device to a standard telephone. Systems for implementing the method are also disclosed.

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Background Art

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Telephones including rotary diallers send signals to an exchange in the form of pulses as contacts are open and closed. More modern telephones include dual tone multi-frequency signal (DTMF) generators which produce dual tone multi-frequency signals upon actuation of a key. The standard arrangement of DTMF phones includes a 12 key keypad.

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A number of automatic response messaging systems have been developed which process calls based upon signals generated by such standard telephones. Such systems are used extensively in voice mail applications where a user is prompted to dial a number corresponding to a menu item.

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With a proliferation of text messaging devices, such as cell phones and pagers, there has been rapid growth in the use of text messaging services. Initially, text messaging services could only be provided between text messaging devices.

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US5,339,358 discloses a system in which a conventional telephone may be used to send a text message from a standard telephone to a

text messaging device. The method and system disclosed does not, however, provide a simple means for responding to a text message received from a standard telephone. Further, the method requires a laborious process to enter a text message, even if it is of a standard
5 form.

It is an object of the present invention to provide an improved messaging method and system or to at least provide the public with a useful choice.

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Disclosure of the invention

According to a first aspect of the invention there is provided a method of sending a text message from a telecommunications device not
15 having a dedicated key for each letter of the alphabet, the method comprising the steps of:

- (i) establishing a connection between the telecommunications device and a telecommunications system;
- 20 (ii) entering a recipient address;
- (iii) sending signals from the telecommunications device to the telecommunications system representative of a desired letter;
- 25 (iv) upon receipt by the telecommunication system of signals representing a letter, generating a voice message corresponding to that letter and sending it to the telecommunications device;
- (v) repeating steps (iii) and (iv) as required to enter a required text message;

- (vi) at the telecommunications device sending a signal to the telecommunication system indicating completion of the message; and
- (vii) sending the text message including a caller address from the telecommunication system via a telecommunications network to a text message receiving device.

According to a further aspect of the invention there is provided a method of sending a text message from a telecommunications device not having a specific key for each letter of the alphabet, the method comprising the steps of:

- (i) establishing a connection between the telecommunications device and a telecommunication system;
- (ii) entering a recipient address
- (iii) selecting a desired message from a menu of stored messages to be sent; and
- (iv) sending the selected text message from the telecommunication system via a telecommunications network to a text message receiving device.

According to another aspect of the invention there is provided a method of sending a text message from a text messaging device to a telephone, the method comprising the steps of:

- (i) entering a text message and recipient address on a text messaging device and sending it to a telecommunications network;
- (ii) establishing a connection between the telecommunications network and the telephone having the recipient address; and
- (iii) converting the text message to a voice message and playing it via the telecommunications network to the telephone.

According to a further aspect of the invention there is provided a method of sending a text message from a telecommunications device, the method comprising the steps of:

- 5 i) entering a service identification number at the telecommunications device corresponding to a message to be sent;
- ii) entering a recipient address via the telecommunications device; and
- 10 iii) sending a text message associated with the service identification number to the recipient address.

15 A telephony computer for implementing the aforesaid methods is also disclosed.

Brief description of the drawings

20 The invention will now be described by way of example with reference to the accompanying drawings in which:

Figure 1: shows a block diagram of a system for implementing the method of the invention.

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Figure 2: shows a flow diagram for sending a text message from a standard telephone.

Referring to figure 1 a system for implementing a method of the invention is shown. A telecommunications device 1 is connected to a public telephone network 2. In this case the telecommunications device is a standard DTMF 12 button telephone. Other telephones, such as rotary dial telephones may also be used.

35 A telephony computer 3 is also connected to the public telephone network. Telephony computer 3 may be a mainframe, miniframe,

server or personal computer which has a Network Interface Unit (NIU) to connect to a telephone network through the use of standard protocols such as ISDN, SS7 AND MF. For example, a clearpath mainframe running the MCP operating system with the Unisys telephony platform application known as NAP (Network Application Platform) may be suitable. Telephony computer 3 is connected to at least one network provider. As shown in figure 1 telephony computer 3 is connected to network providers 4, 5, 6 and 7.

Wireless connections are provided between the network providers and any wireless device capable of receiving text messages. For example in figure 1 network provider 4 is connected to cellphone 8, network provider 5 to PDA 9 and network provider 6 to pager 10. Connection between network provider 7 and computer 11 may be a wire or wireless connection. The text messaging devices 8 to 11 are shown merely by way of example and other devices such as WAP devices, facsimiles, radio telephones, televisions or telephones having displays may also be used. The wireless connections may be provided by a GSM network and the messages may be conveyed via a short message service (SMS).

The method of the invention enables text messages to be sent from a standard telephone or similar telecommunications device to a text messaging device. The method of the invention further enables a user of a text messaging device to easily establish communication with telecommunications device 1.

Referring now to figure 2 a preferred method of processing a text message sent from telecommunications device 1 at telephony computer 3 is shown. In this embodiment a user dials a phone number on telecommunications device 1 to establish a connection between telecommunications device 1 and telephony computer 3 via public telephone network 2.

Once a connection is established telephony computer 3 checks in step 12 to see whether the caller identification number (telephone number) may be displayed (CLIP) or if it is restricted (CLIR). If it is restricted
5 processing proceeds to step 13. There telephony computer 3 sends a voice message to telephone 1 giving the user an option of pressing key "1" to enable the telephone number to be displayed or to press key "2" to keep the number restricted. Upon actuation of key 1 the CLI flag is converted from restricted to unrestricted form (CLIR to CLIP). If
10 key 2 is pressed the CLI flag remains unchanged. It will be appreciated that steps 12 through 14 are preferred and are not mandatory to the operation of the messaging system and method, and may be absent in other embodiments. In another embodiment a sender may be prompted to enter their caller identification number via
15 telecommunications device 1.

Processing then proceeds to step 15. In step 15 telephony computer 3 prompts a user to enter a recipient address. This address may be an IP address, email address, phone number, page number etc. For an
20 email message this may be an email address, whereas for a telephone, cellphone or pager a telephone number may be entered. In this example a telephone number is entered by a user via telecommunications device 1.

25 In step 16 the number is preferably checked to ensure it is a valid telephone number. If it is invalid a voice message is sent from telephony computer 3 to telephone 1 to notify the user that it is an invalid number and processing returns to step 15. If the number is valid the call type is checked in step 18 and, depending on call type
30 processing proceeds to step 19 or step 23. The determination of the call type is preferably based upon the telephone number dialled to access the service.

If the call type indicates a free form message then telephony computer 3 sends a voice message to telephone 1 in step 19 asking the user to enter a message. Messages may be entered using a number of techniques. A standard 12 key telephone key pad has a number of letters printed adjacent the key number. For example, key 2 has the letters "ABC". According to one technique key 2 may be pressed once to return letter "A", twice to return letter "B" and three times to return letter "C". There is also known a two key letter in which the key containing a letter is pressed and then the number corresponding to the position of the letter is pressed. For example, "A" is "21", "B" is "22" and "C" is "23". Using one of these or another method known to those skilled in the art letters may be entered.

In step 20 telephony computer 3 collects digits entered from the key pad of telephone 1 and processes them to return a letter in step 21. A voice message is sent back to telephone 1 in step 22 confirming the letter. Processing continues in this manner until a signal is sent indicating the termination of the message. In the example in figure 2 the hash key is pressed to indicate the end of a message. Other signals, such as an on hook signal, may be used to indicate the end of entry of a message. Processing then continues to step 24. Alternatively, in steps 19 to 22 a user may be prompted to select one of a number of messages from a menu by dialling a corresponding number.

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If at step 18 it is detected that the call type indicates that a standard message should be sent then processing proceeds to step 23. In one embodiment users may dial different service identification numbers (telephone numbers) depending upon the type of message they wish to send. One number may enable them to enter a freeform text message in steps 19 to 22. Other telephone numbers may correspond to standard messages to be sent such as "please call me", "happy birthday", "please call me at home", "please call me at work", etc. If

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in step 18 the call is determined to be to a telephone number associated with a standard message then processing proceeds to step 23. The standard message is set up in step 23 and processing proceeds to step 24. In step 24 the text messages sent to a network provider 4, 5, 6 or 7 and relayed to the appropriate messaging device 8, 9, 10 or 11.

As part of the sending process 24 an additional message may be added to the text message sent. This additional message may contain an advertisement or user information. For example, a special calling rate offered by a network provider may be advertised.

It will be appreciated that the order of the main steps is not critical. A recipient address may be entered before or after a message is entered. Further, the processing of CLI information may occur at any stage, if this step is included in a particular implementation.

In figure 1, the telecommunications system consists of a public telephone network 2 (connected to telephone 1) and telephony computer 3. It will be appreciated that the telecommunications system may consist of only telephony computer 3 connected directly to telephone 1 where, for example, a large organisation wishes to provide this service for its staff.

As the text message sent to text messaging device 8, 9, 10 or 11 preferably includes the caller address (caller telephone number) a user of the text messaging device may easily respond to the text message. Where the device is a cellular telephone 8 the caller telephone number may be selected and dialled. This enables a user of cellular telephone 8 to directly contact the sender of the text message at telephone 1.

According to an alternative embodiment, where a text only device, such as computer 11 receives the text message, an alternative method

for responding may be provided. A recipient may instruct its device
11 to reply to the caller address. The caller address may be an email
address or telephone number etc depending on the nature of the
service. Where an email address is given it will incorporate a caller
5 identification number to enable the message to be relayed to
telecommunications device 1. Alternatively, the caller address may
include routing information to transfer the text message to telephony
computer 3 along with the caller identification number (phone number).

10 When telephony computer 3 receives such a text message it obtains
the caller identification number and calls telecommunications device 1
via public telephone network 2. When the telephone is answered the
text message is converted to a voice message and played to the
recipient at telecommunications device 1. An additional voice
15 message may be added before or after the main message. The
additional message may contain advertising, promotional or general
information. Alternatively, a user may be required to follow a menu
option to play a message. Further, a user may be required to enter a
password before a message is played back.

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The invention thus provides a method of sending a text message from
a standard telephone which provides an easy means of reply by the
recipient of the message. The method also enables additional
messages to be forwarded simultaneously.

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Where in the foregoing description reference has been made to
integers or components having known equivalents then such
equivalents are herein incorporated as if individually set forth.

30 Although this invention has been described by way of example it is to
be appreciated that improvements and/or modifications may be made
thereto without departing from the scope or spirit of the present
invention.

CLAIMS:

1. A method of sending a text message from a telecommunications device not having a dedicated key for each letter of the alphabet, the method comprising the steps of:
 - (i) establishing a connection between the telecommunications device and a telecommunications system;
 - (ii) entering a recipient address;
 - (iii) sending signals from the telecommunications device to the telecommunications system representative of a desired letter;
 - (iv) upon receipt by the telecommunication system of signals representing a letter, generating a voice message corresponding to that letter and sending it to the telecommunications device;
 - (v) repeating steps (iii) and (iv) as required to enter a required text message;
 - (vi) at the telecommunications device sending a signal to the telecommunication system indicating completion of the message; and
 - (vii) sending the text message including a caller address from the telecommunication system via a telecommunications network to a text message receiving device.
2. A method as claimed in claim 1 wherein step (ii) is performed prior to steps (iii) and (iv).
3. A method as claimed in claim 1 wherein step (ii) is performed after steps (iii) and (iv).

4. A method as claimed in any one of the preceding claims wherein the signals sent in step (iii) are generated by multiple actuation of one or more key of a telecommunications device to send a sequence of DTMF signals.
- 5 5. A method as claimed in claim 4 wherein each letter is entered at the telecommunications device by entering two keys in sequence.
6. A method as claimed in any one of claims 1 to 3 wherein the signals sent in step (iii) are a sequence of pulses from a rotary
10 dialler.
7. A method as claimed in any one of the preceding claims wherein the recipient address is entered by dialling a recipient identification number via the telecommunications device.
8. A method as claimed in any one of the preceding claims
15 wherein the signal sent in step (vi) is generated by actuating one or a combination of keys of the telecommunications device.
9. A method as claimed in any one of claims 1 to 7 wherein the signal sent in step (vi) is an on hook signal.
- 20 10. A method as claimed in any one of the preceding claims wherein the caller address is a telephone number.
11. A method as claimed in any one of the preceding claims wherein an additional message is added to the text message prior to sending it to the text message receiving device in step
25 (vii).
12. A method as claimed in claim 11 wherein the additional message is an advertising message.
13. A method as claimed in any one of the preceding claims
30 wherein the text message receiving device is a cellular telephone, pager, WAP device, facsimile, PDA, telephone with a display, radio telephone, television or computer.

14. A method as claimed in any one of the preceding claims wherein the telecommunications system includes a public telephone network connecting the telecommunications device to a computer which processes the entry of the text message and sends the message to a text message receiving device via a network.
15. A method of sending a text message from a telecommunications device not having a specific key for each letter of the alphabet, the method comprising the steps of:
- (i) establishing a connection between the telecommunications device and a telecommunication system;
 - (ii) entering a recipient address;
 - (iii) selecting a desired message from a menu of stored messages to be sent; and
 - (iv) sending the selected text message from the telecommunication system via a telecommunications network to a text message receiving device.
16. A method as claimed in claim 15 wherein the recipient address is entered by dialling a recipient identification number via the telecommunications device.
17. A method as claimed in claim 17 wherein a key or sequence of keys is actuated to select a message.
18. A method as claimed in claim 17 wherein a sequence of two or more keys is actuated to select a message.
19. A method of sending a text message from a text messaging device to a telephone, the method comprising the steps of:
- (i) entering a text message and recipient address on a text messaging device and sending it to a telecommunications network;

(ii) establishing a connection between the telecommunications network and the telephone having the recipient address; and

(iii) converting the text message to a voice message and playing it via the telecommunications network to the telephone.

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20. A method as claimed in claim 19 wherein an additional voice message is transmitted to the telephone in step (iii).

21. A method as claimed in claim 20 wherein the additional message is an advertising message.

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22. A method as claimed in claim 21 wherein the message is played prior to the converted text message.

23. A method of sending a text message from a telecommunications device, the method comprising the steps of:

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(i) entering a service identification number at the telecommunications device corresponding to a message to be sent;

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(ii) entering a recipient address via the telecommunications device; and

(iii) sending a text message associated with the service identification number to the recipient address.

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24. A method as claimed in claim 23 wherein the service identification number is a telephone number.

25. A method as claimed in claim 24 wherein the service identification number is entered by dialling the telephone number via the telecommunications device.

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26. A method as claimed in any one of claims 23 to 25 wherein the text message is sent to a cellular telephone, pager, WAP device,

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facsimile, PDA, telephone with a display, radio telephone, television or computer.

5 27. A telephony computer configured to carry out the method of any one of the preceding claims.

28. A telephony computer for sending text messages comprising:

- 10 i) processing means;
- ii) means for interfacing between a first telecommunications network and the processing means which convert signals received from the first telecommunications network to digital signals
15 provided to the processing means; and
- 20 iii) means for interfacing between a second telephone network and the processing means to enable text messages to be sent via the second telecommunications network, wherein the processing means includes means for obtaining a caller identification number when a connection is made
25 between a caller and the computer and means for inserting the caller identification number in a text message sent to the second network.

29. A telephony computer for sending text messages comprising:

- 30 (i) processing means;
- (ii) means for interfacing between a first telecommunications network and the processing means which convert signals received from the first telecommunications network to digital signals
35 provided to the processing means; and

- iii) means for interfacing between a second telephone network and the processing means to enable text messages to be sent via the second telecommunications network, wherein, in response to signals received from the first telecommunications network a predetermined text message is sent to the second network.

30. A telephony computer for sending text messages comprising:

- (i) processing means;
- (ii) means for interfacing between a first telecommunications network and the processing means which convert signals received from the first telecommunications network to digital signals provided to the processing means; and
- (iii) means for interfacing between a second telephone network and the processing means to enable text messages to be sent via the second telecommunications network, wherein, upon receipt of a recipient address a predetermined message is sent to the second network.

31. A telephony computer as claimed in any one of claims 28 to 30 wherein the first and second telecommunications networks are the same or part of the same network.

32. An application for a telephony computer which, when executed, implements the method of any one of claims 1 to 26.