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US 6374259 B1
US 20030135567 A1

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INT CL[7] **G06F**
Other:

(54) Abstract Title: **Providing up-to-date contact information**

(57) A requesting user requests contact information for a subscribing user by addressing a request to a subscribing user telephone number. The request is directed to a database, which automatically provides contact information, in which a telephone number for each contact is stored. For each such inquiry a requesting user number is derived and the information corresponding to the requested contact is automatically sent to the requesting user. The user request is typically a voice call, and data can be sent to the requesting user with no further action from the requesting user. A log of user numbers and request details can be accumulated and stored in a database for analysis or further data retrieval.

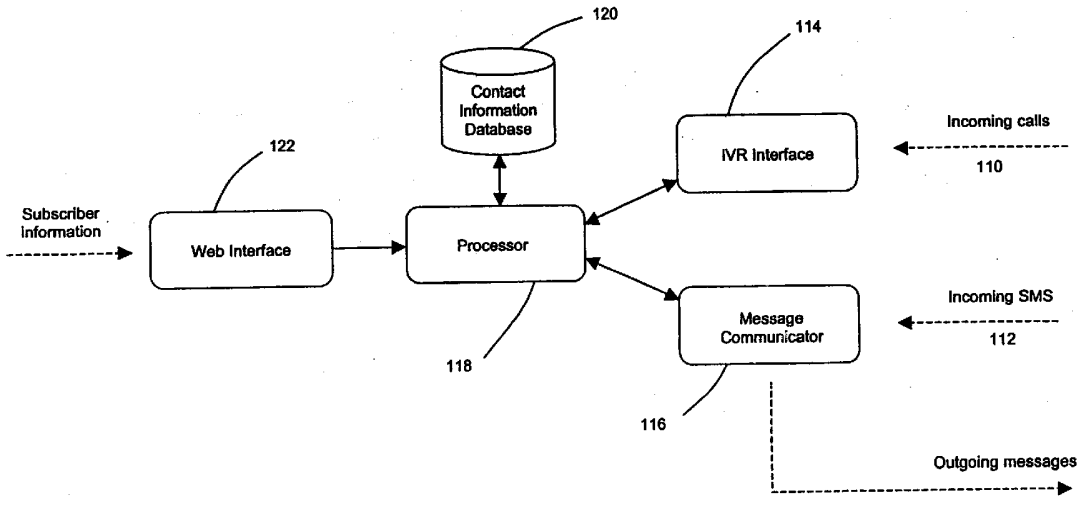


Figure 1

GB 2 425 192 A

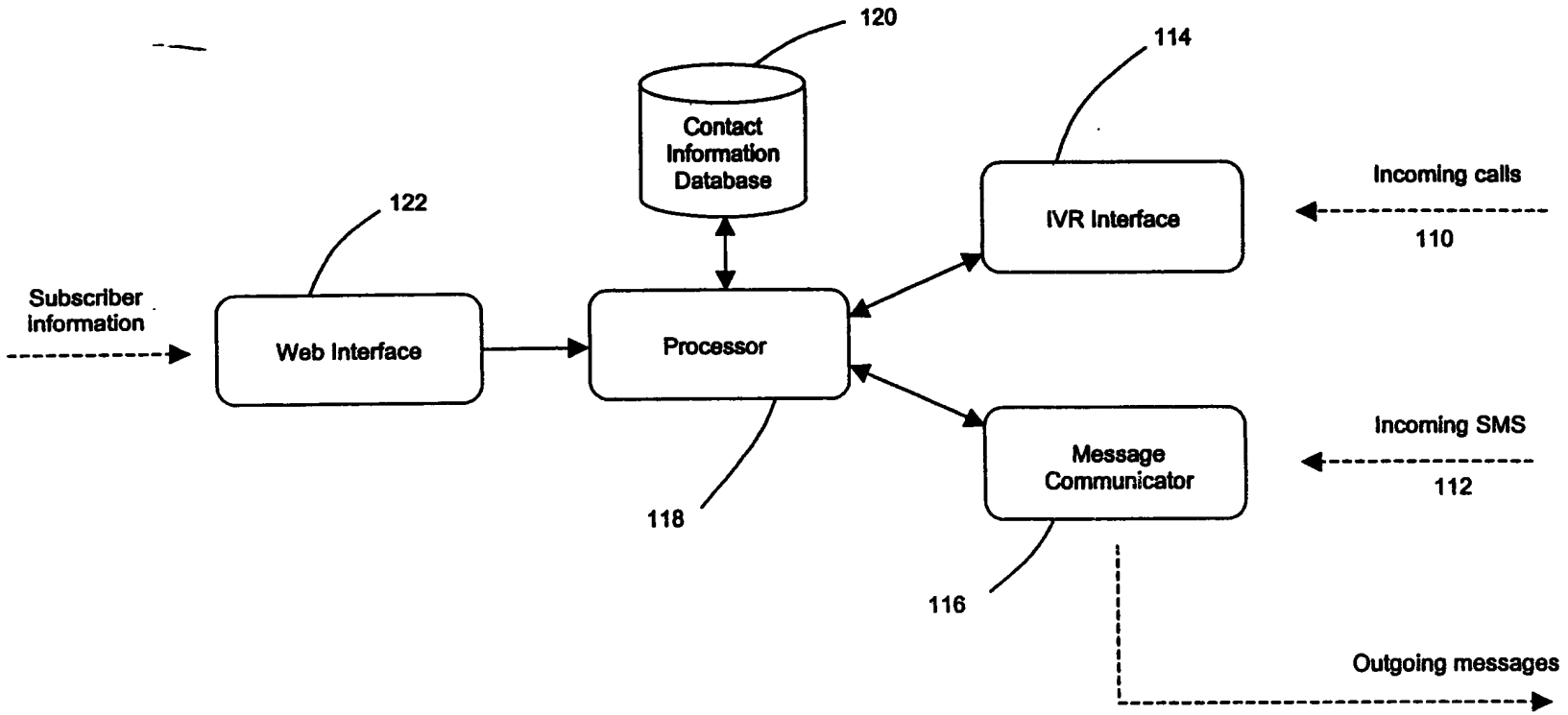

120
Contact Information Database
114
IVR Interface
Incoming calls
110
122
Subscriber information
Web Interface
Processor
118
Message Communicator
Incoming SMS
112
116
Outgoing messages

Figure 1

Fig.2a.

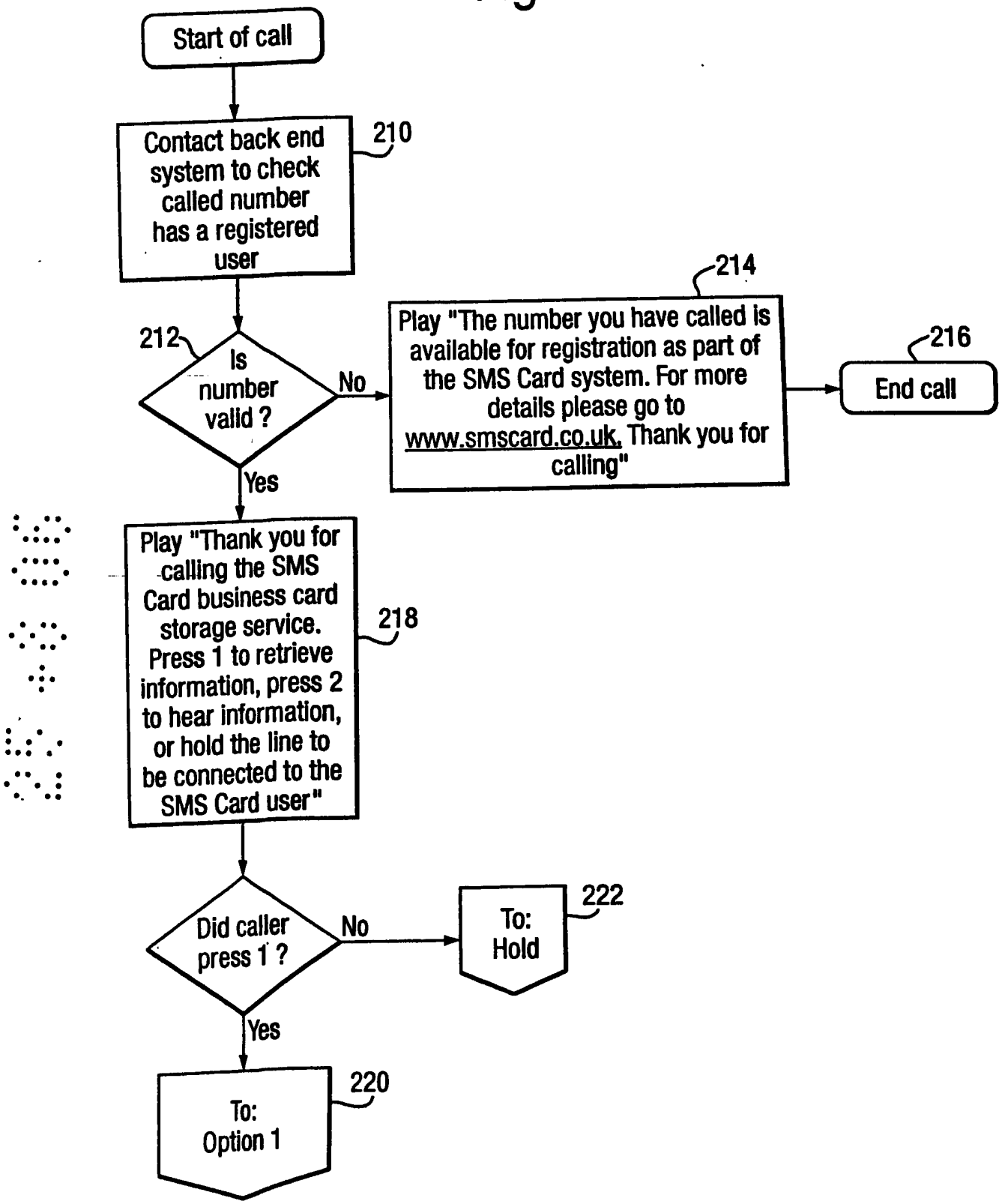

Start of call
Contact back end system to check called number has a registered user
210
212
Is number valid ?
No
214
Play "The number you have called is available for registration as part of the SMS Card system. For more details please go to www.smscard.co.uk. Thank you for calling"
216
End call
Yes
Play "Thank you for calling the SMS Card business card storage service. Press 1 to retrieve information, press 2 to hear information, or hold the line to be connected to the SMS Card user"
218
Did caller press 1 ?
No
To: Hold
222
Yes
To: Option 1
220

Fig.2b.

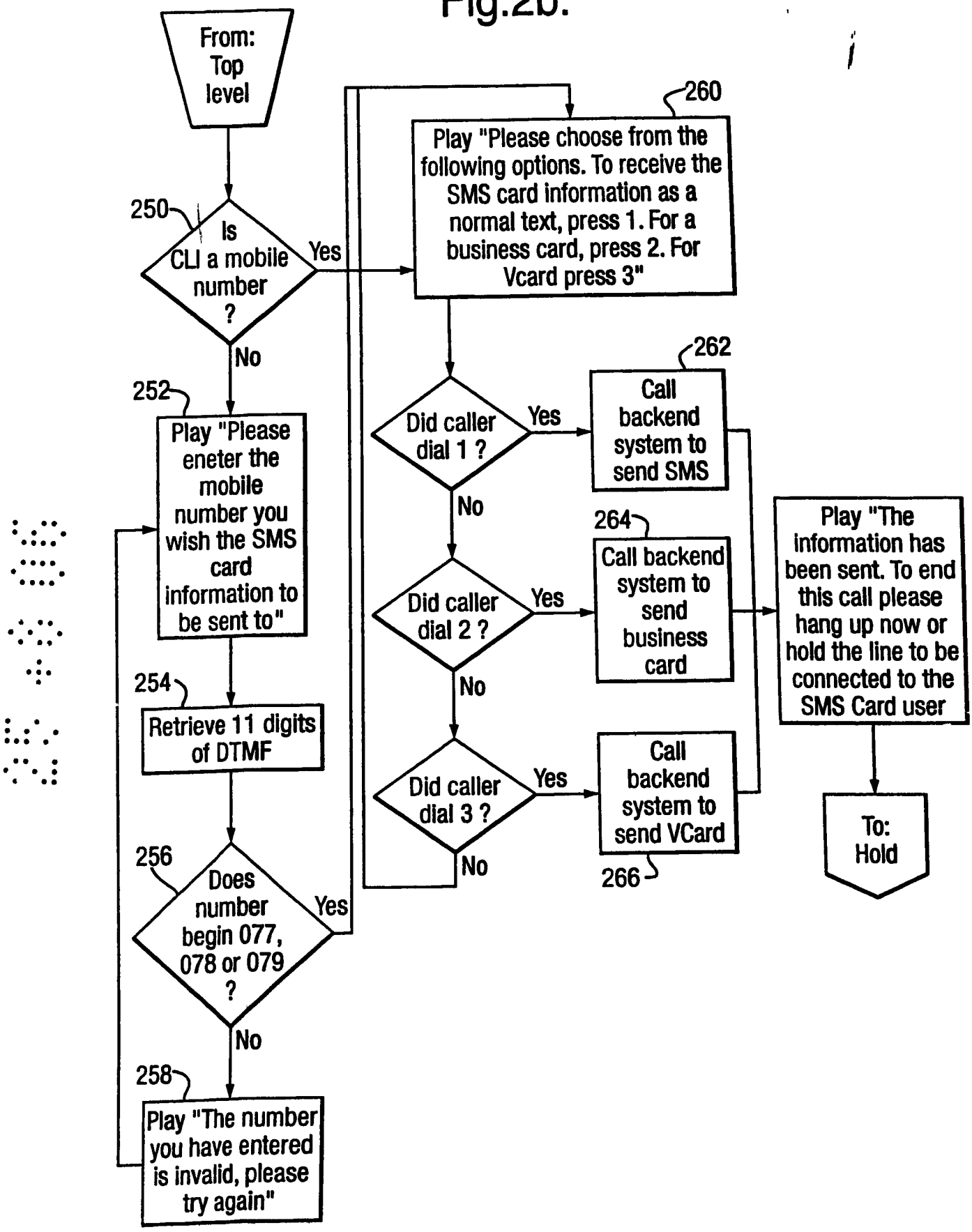

From: Top level
250
Is CLI a mobile number ?
Yes
No
252
Play "Please eneter the mobile number you wish the SMS card information to be sent to"
254
Retrieve 11 digits of DTMF
256
Does number begin 077, 078 or 079 ?
Yes
No
258
Play "The number you have entered is invalid, please try again"
260
Play "Please choose from the following options. To receive the SMS card information as a normal text, press 1. For a business card, press 2. For Vcard press 3"
Did caller dial 1 ?
Yes
No
262
Call backend system to send SMS
Did caller dial 2 ?
Yes
No
264
Call backend system to send business card
Did caller dial 3 ?
Yes
No
Call backend system to send VCard
266
Play "The information has been sent. To end this call please hang up now or hold the line to be connected to the SMS Card user
To: Hold

Fig.3.

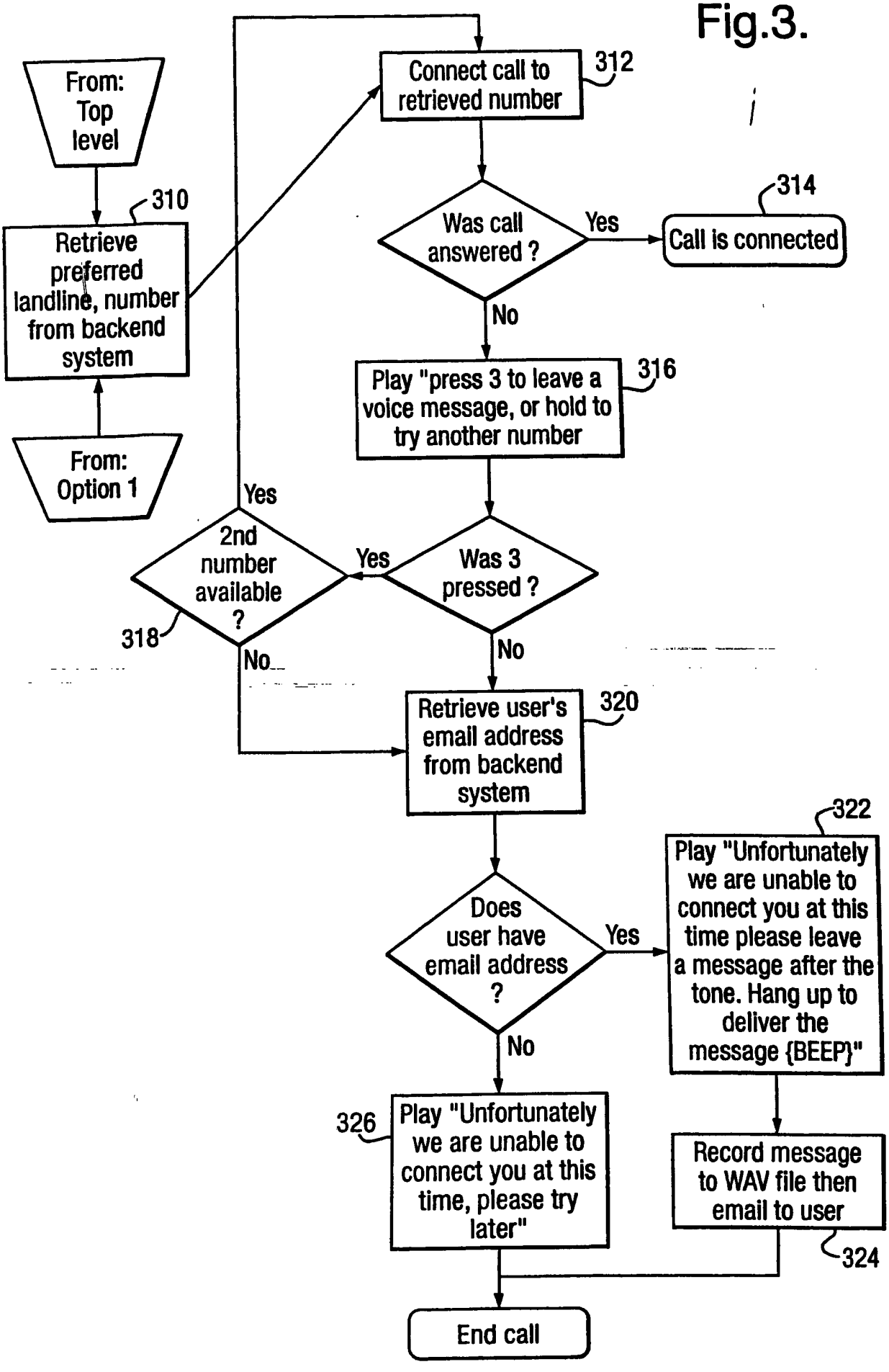

From: Top level
From: Option 1
310
Retrieve preferred landline, number from backend system
312
Connect call to retrieved number
Was call answered ?
Yes
314
Call is connected
No
316
Play "press 3 to leave a voice message, or hold to try another number
Was 3 pressed ?
Yes
2nd number available ?
Yes
318
No
No
320
Retrieve user's email address from backend system
Does user have email address ?
Yes
322
Play "Unfortunately we are unable to connect you at this time please leave a message after the tone. Hang up to deliver the message {BEEP}"
No
326
Play "Unfortunately we are unable to connect you at this time, please try later"
Record message to WAV file then email to user
324
End call

Fig.4.

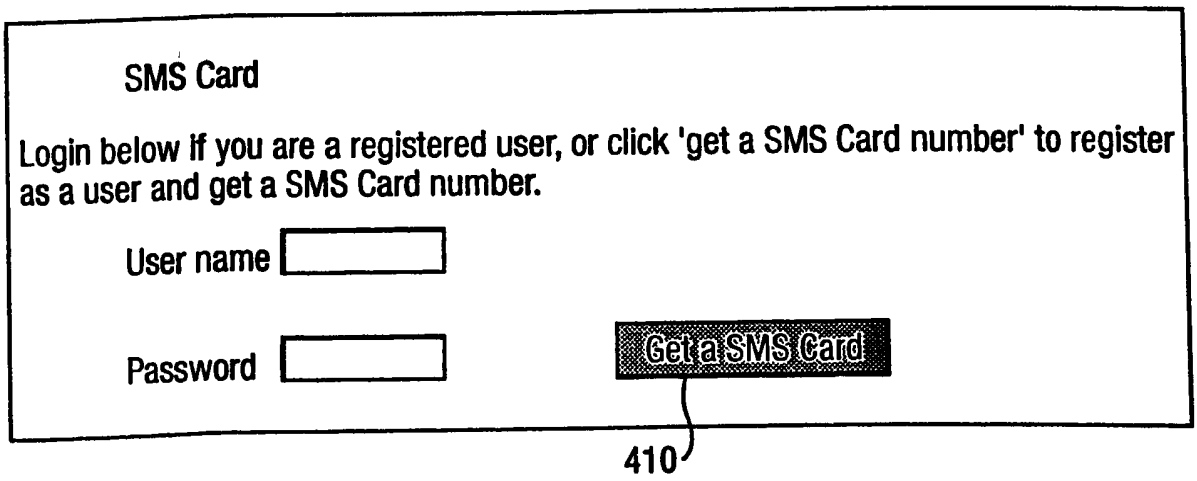

SMS Card
Login below if you are a registered user, or click 'get a SMS Card number' to register as a user and get a SMS Card number.
User name
Password
Get a SMS Card
410

Fig.5.

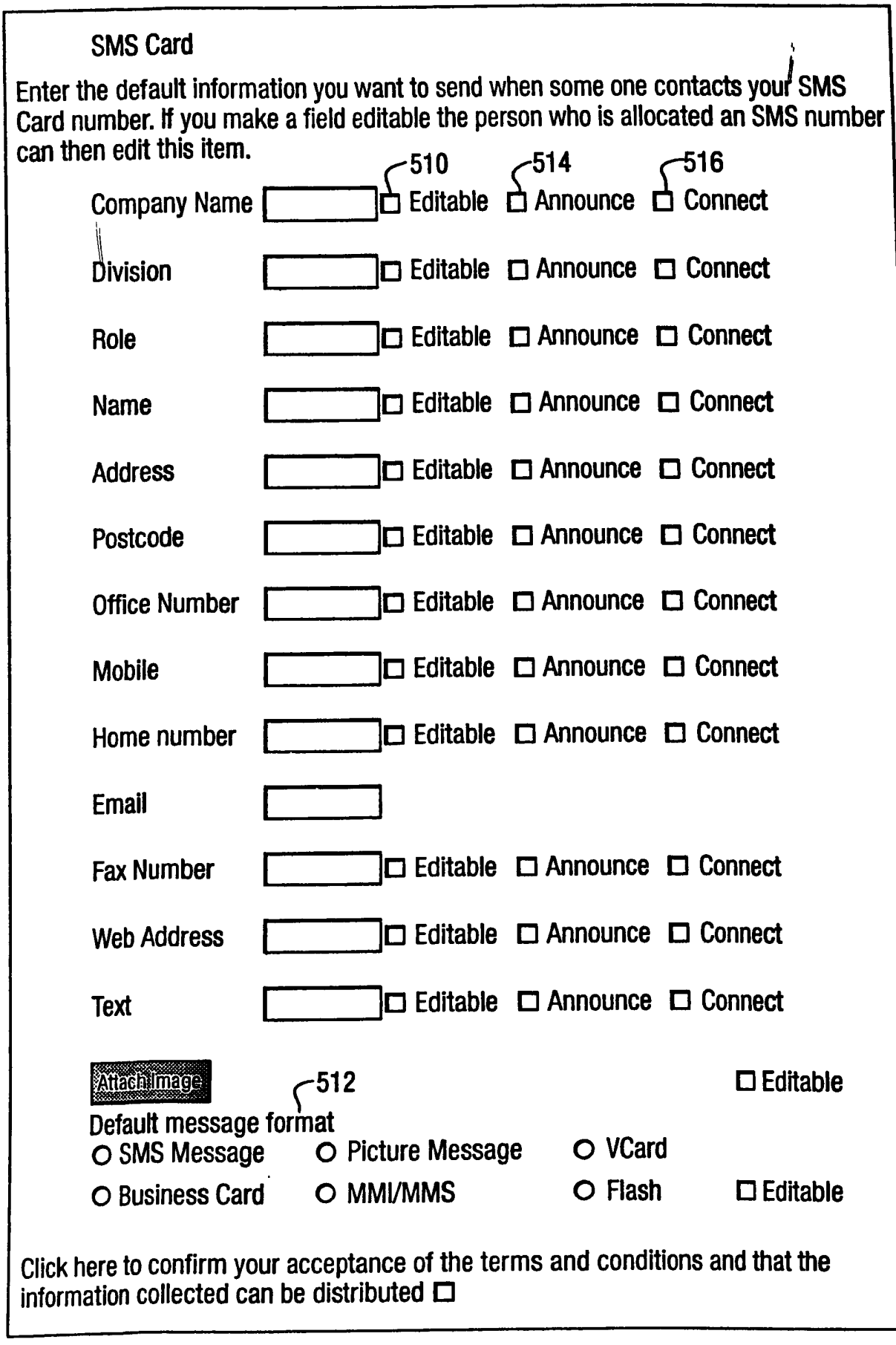

SMS Card
Enter the default information you want to send when some one contacts your SMS Card number. If you make a field editable the person who is allocated an SMS number can then edit this item.
510
514
516
Company Name
Editable
Announce
Connect
Division
Editable
Announce
Connect
Role
Editable
Announce
Connect
Name
Editable
Announce
Connect
Address
Editable
Announce
Connect
Postcode
Editable
Announce
Connect
Office Number
Editable
Announce
Connect
Mobile
Editable
Announce
Connect
Home number
Editable
Announce
Connect
Email
Fax Number
Editable
Announce
Connect
Web Address
Editable
Announce
Connect
Text
Editable
Announce
Connect
Attach Image
512
Editable
Default message format
SMS Message
Picture Message
VCard
Business Card
MMI/MMS
Flash
Editable
Click here to confirm your acceptance of the terms and conditions and that the information collected can be distributed

Fig.6.

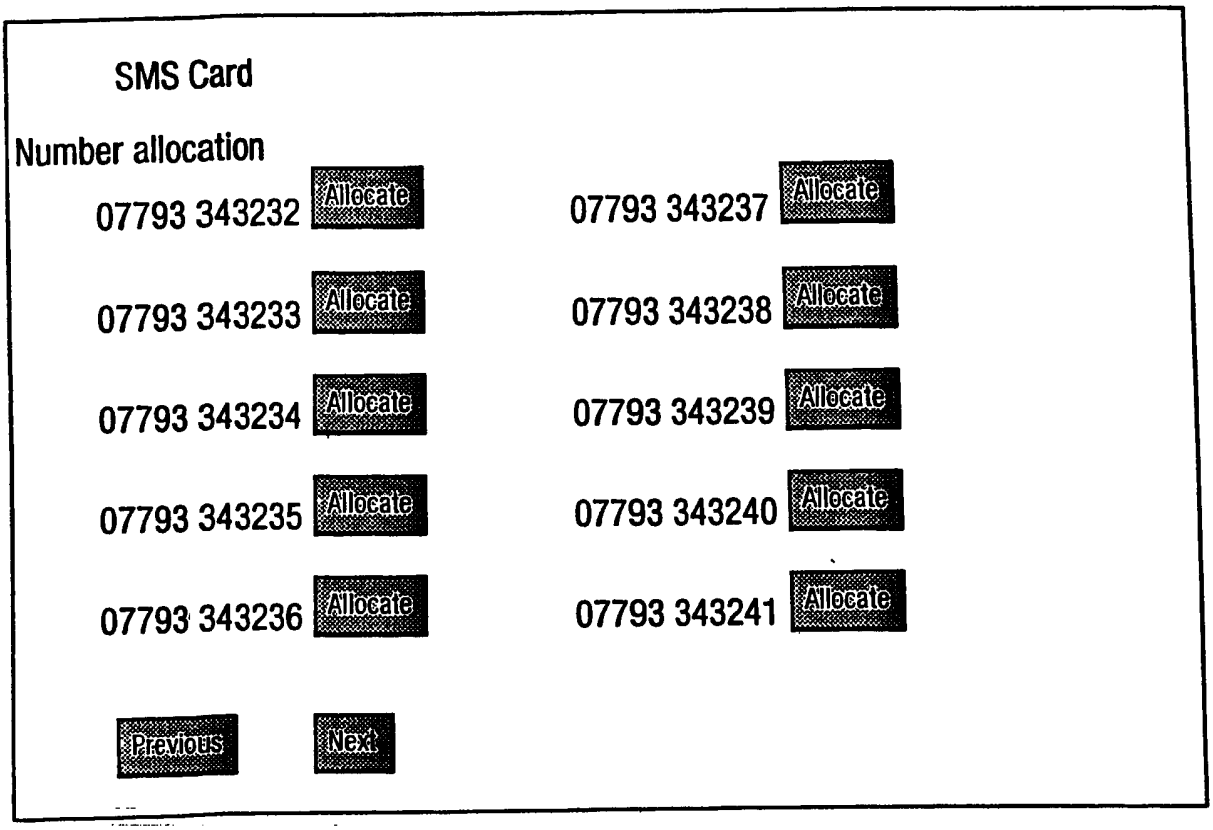

SMS Card
Number allocation
07793 343232
Allocate
07793 343233
Allocate
07793 343234
Allocate
07793 343235
Allocate
07793 343236
Allocate
07793 343237
Allocate
07793 343238
Allocate
07793 343239
Allocate
07793 343240
Allocate
07793 343241
Allocate
Previous
Next

Fig.7.

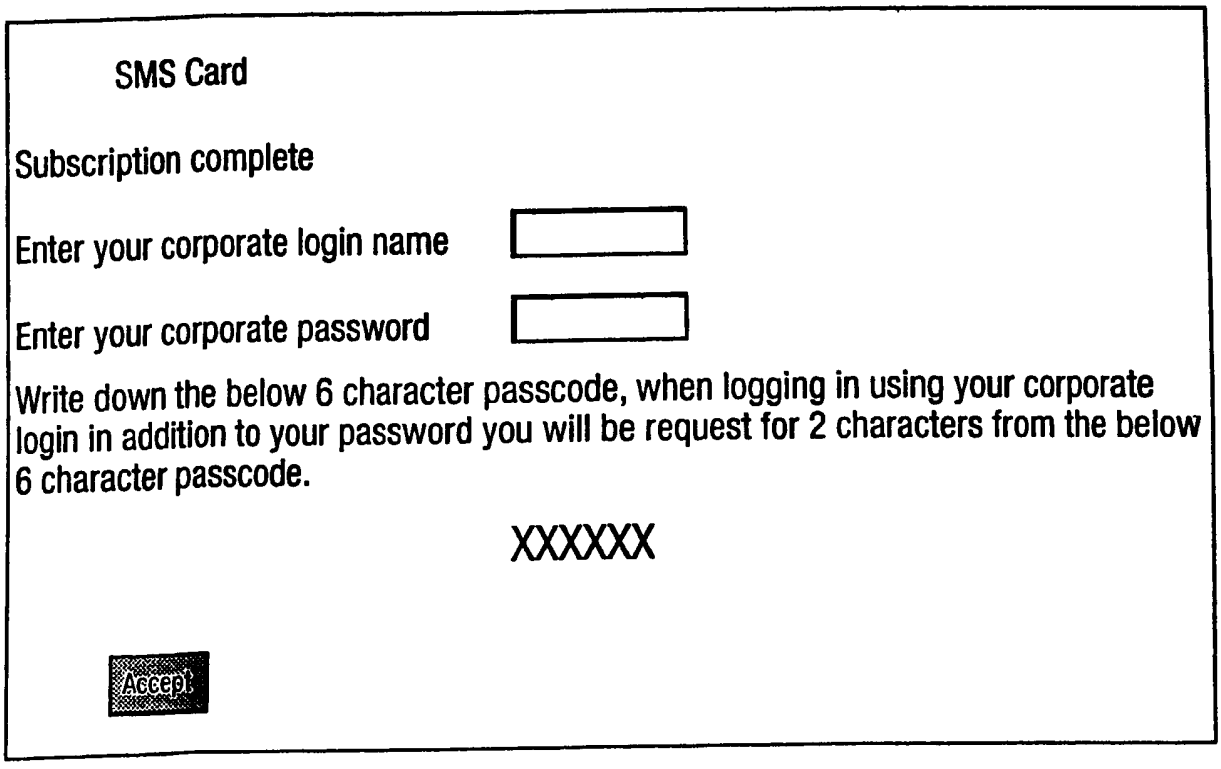

SMS Card
Subscription complete
Enter your corporate login name
Enter your corporate password
Write down the below 6 character passcode, when logging in using your corporate login in addition to your password you will be request for 2 characters from the below 6 character passcode.
XXXXXX
Accept

Fig.8.

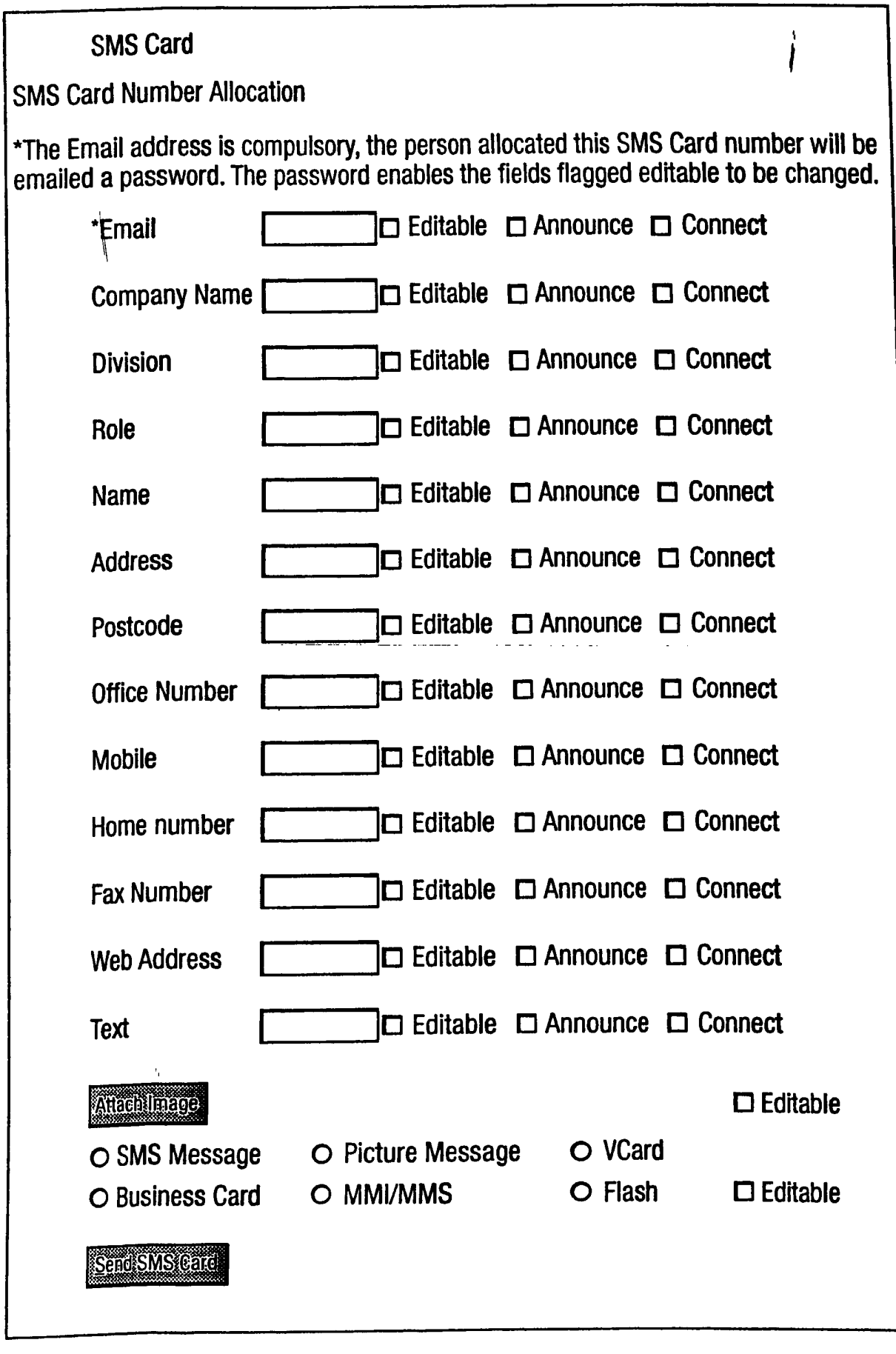

SMS Card
SMS Card Number Allocation
*The Email address is compulsory, the person allocated this SMS Card number will be emailed a password. The password enables the fields flagged editable to be changed.
*Email
Editable
Announce
Connect
Company Name
Division
Role
Name
Address
Postcode
Office Number
Mobile
Home number
Fax Number
Web Address
Text
Attach Image
Editable
SMS Message
Picture Message
VCard
Business Card
MMI/MMS
Flash
Editable
Send SMS Card

Fig.9.

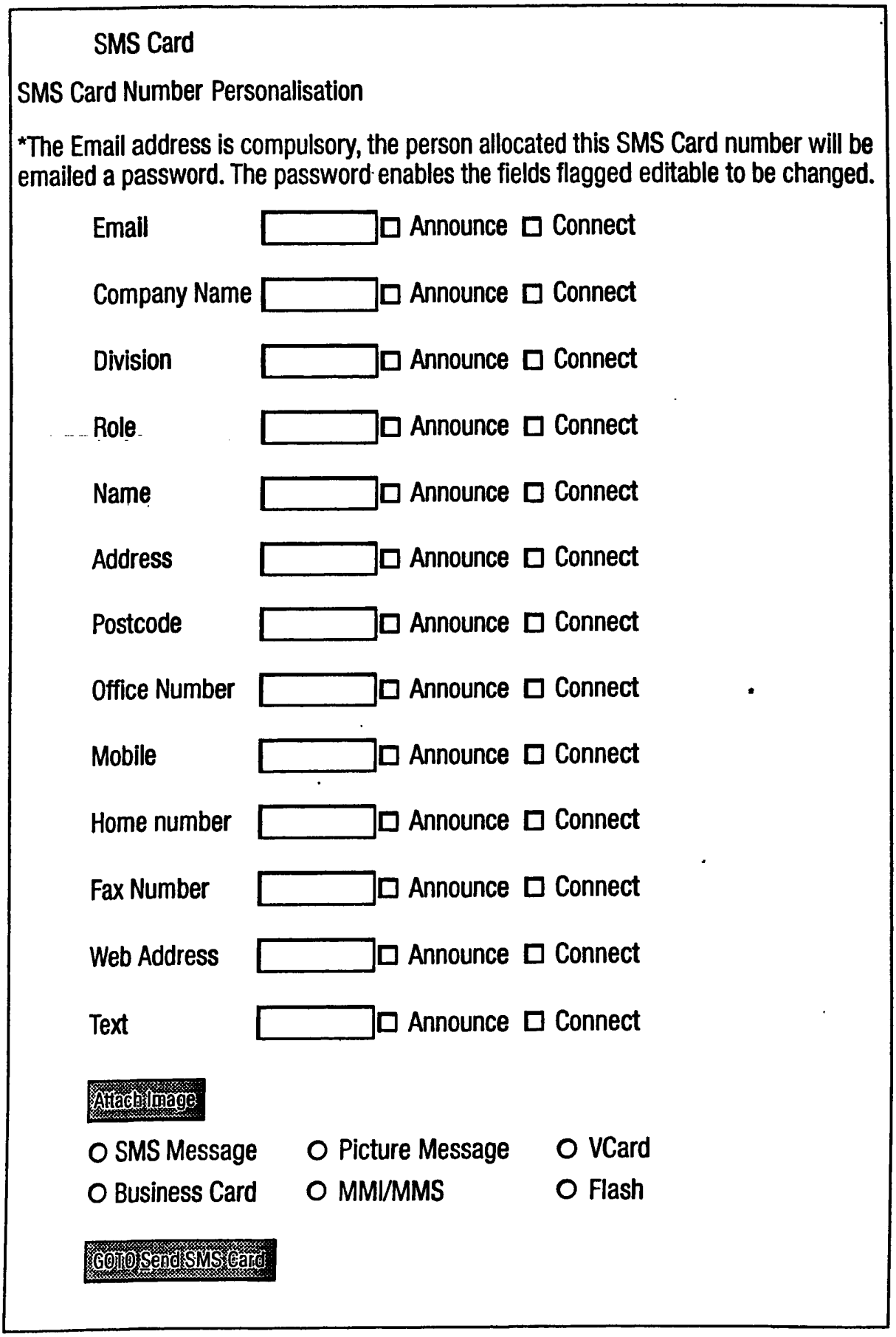

SMS Card
SMS Card Number Personalisation
*The Email address is compulsory, the person allocated this SMS Card number will be emailed a password. The password enables the fields flagged editable to be changed.
Email
Announce
Connect
Company Name
Announce
Connect
Division
Announce
Connect
Role
Announce
Connect
Name
Announce
Connect
Address
Announce
Connect
Postcode
Announce
Connect
Office Number
Announce
Connect
Mobile
Announce
Connect
Home number
Announce
Connect
Fax Number
Announce
Connect
Web Address
Announce
Connect
Text
Announce
Connect
Attach Image
SMS Message
Picture Message
VCard
Business Card
MMI/MMS
Flash
GoTo Send SMS Card

Fig.10.

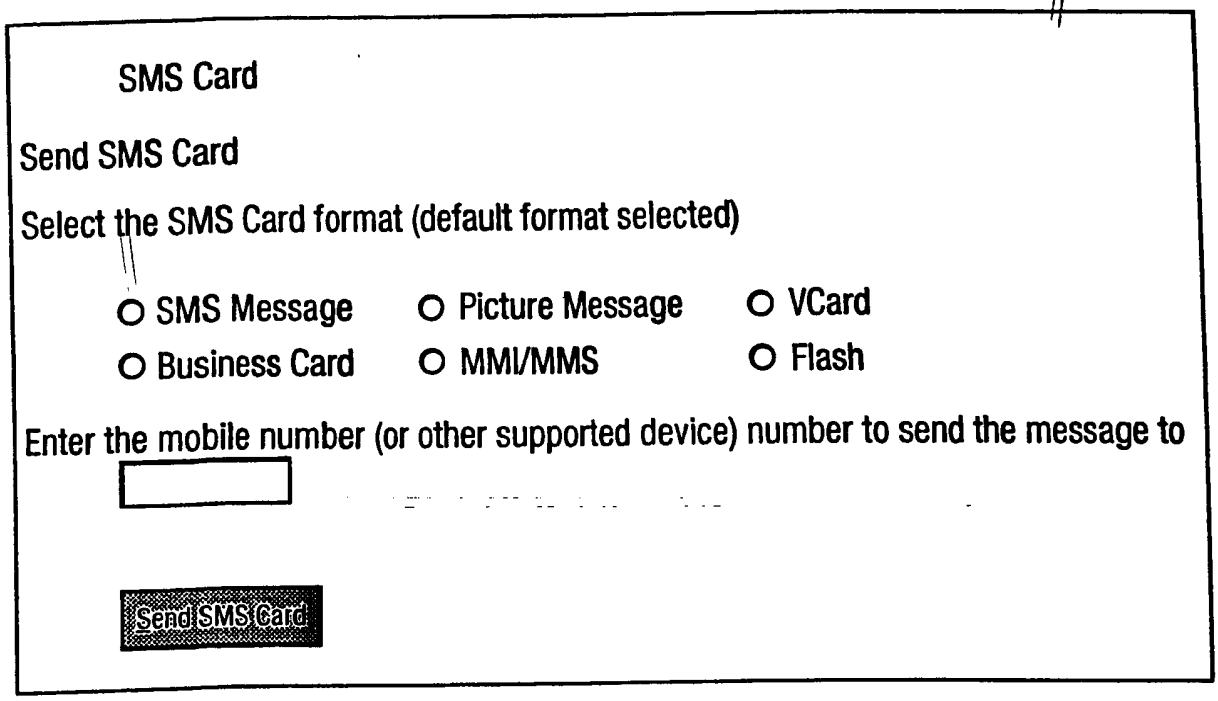

SMS Card
Send SMS Card
Select the SMS Card format (default format selected)
SMS Message
Picture Message
VCard
Business Card
MMI/MMS
Flash
Enter the mobile number (or other supported device) number to send the message to
Send SMS Card

Fig.11.

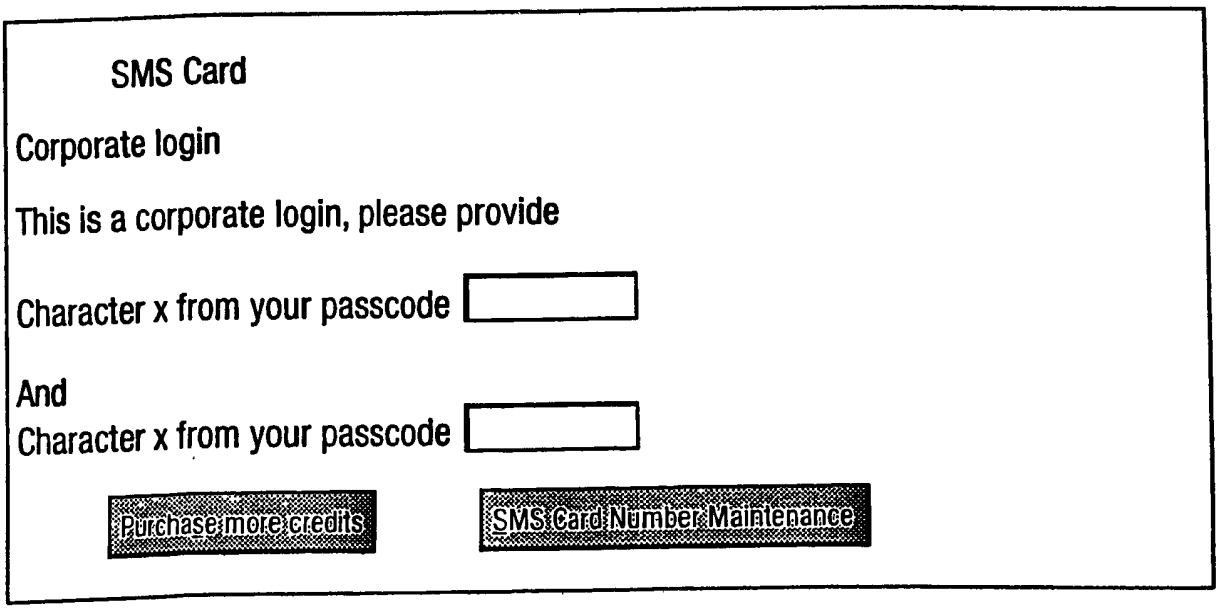

SMS Card
Corporate login
This is a corporate login, please provide
Character x from your passcode
And
Character x from your passcode
Purchase more credits
SMS Card Number Maintenance

Fig.12.

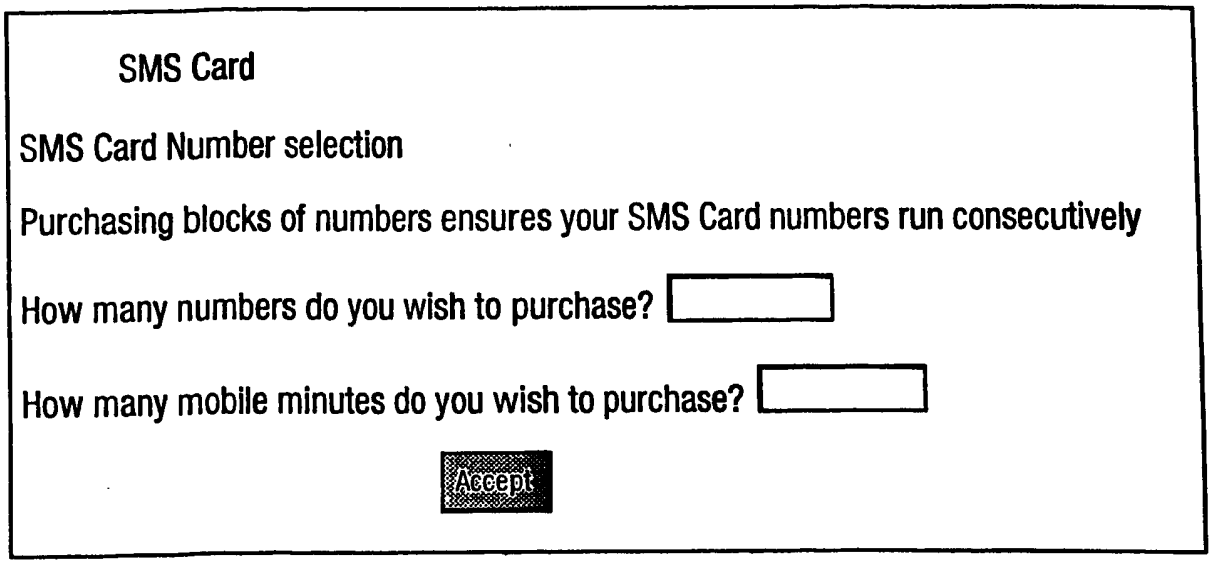

SMS Card
SMS Card Number selection
Purchasing blocks of numbers ensures your SMS Card numbers run consecutively
How many numbers do you wish to purchase?
How many mobile minutes do you wish to purchase?
Accept

Fig.13.

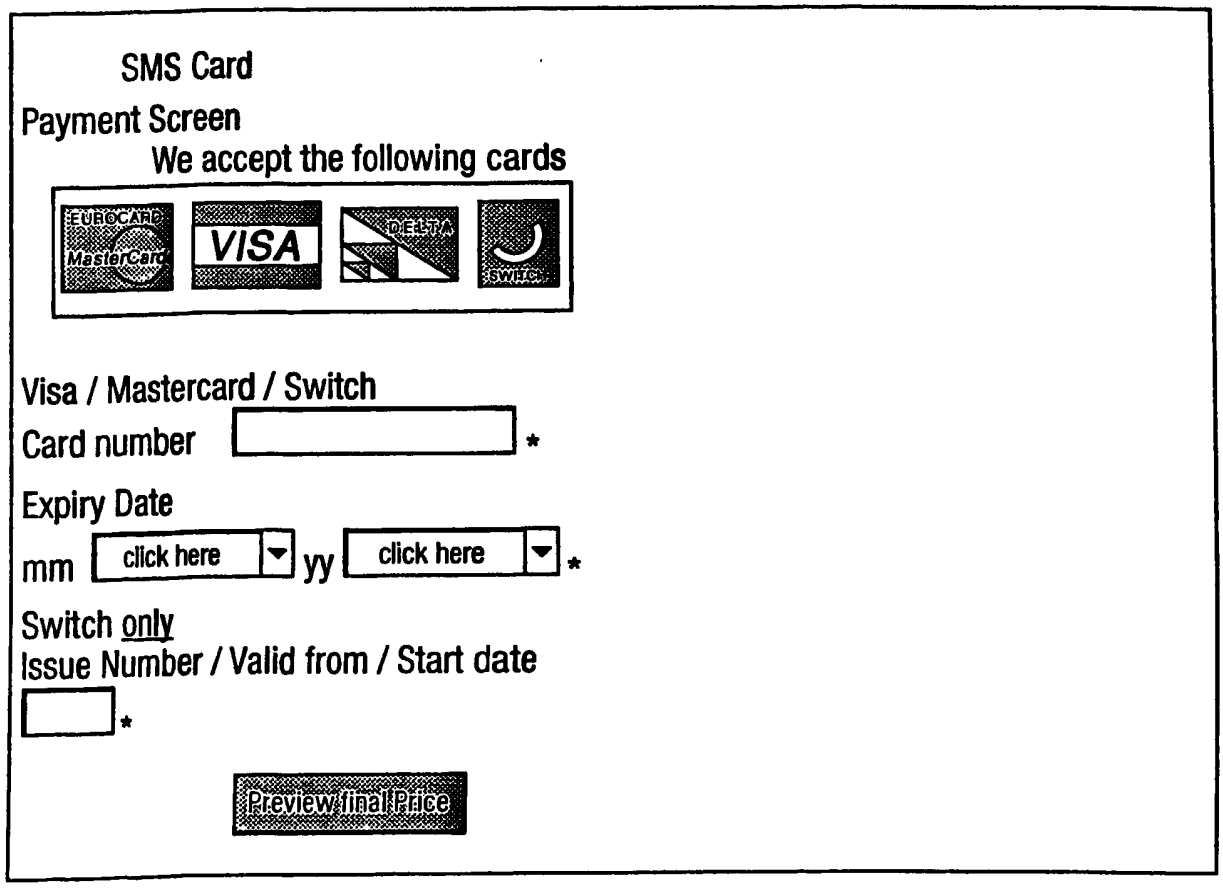

SMS Card
Payment Screen
We accept the following cards
EUROCARD
MasterCard
VISA
DELTA
SWITCH
Visa / Mastercard / Switch
Card number
*
Expiry Date
mm
click here
yy
click here
*
Switch only
Issue Number / Valid from / Start date
*
Preview final Price

Fig.14.

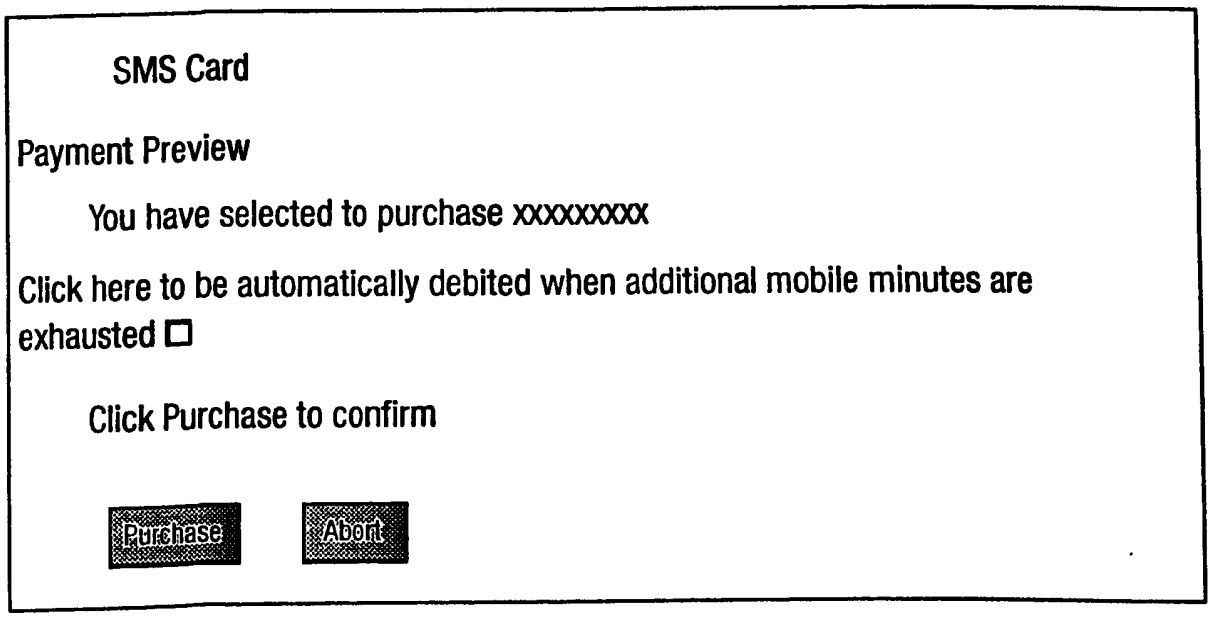

SMS Card
Payment Preview
You have selected to purchase xxxxxxxxx
Click here to be automatically debited when additional mobile minutes are exhausted ☐
Click Purchase to confirm
Purchase
Abort

Fig.15.

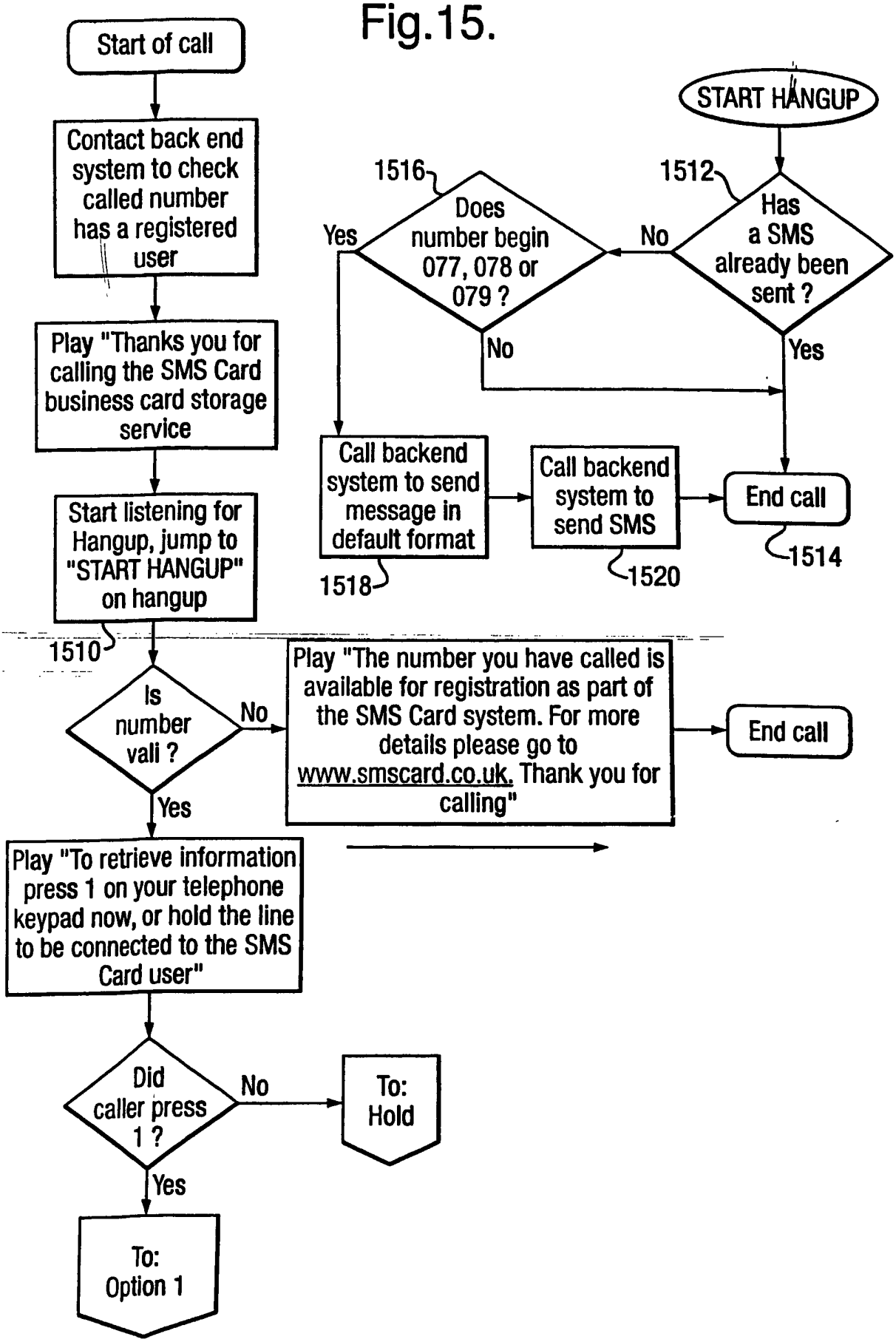
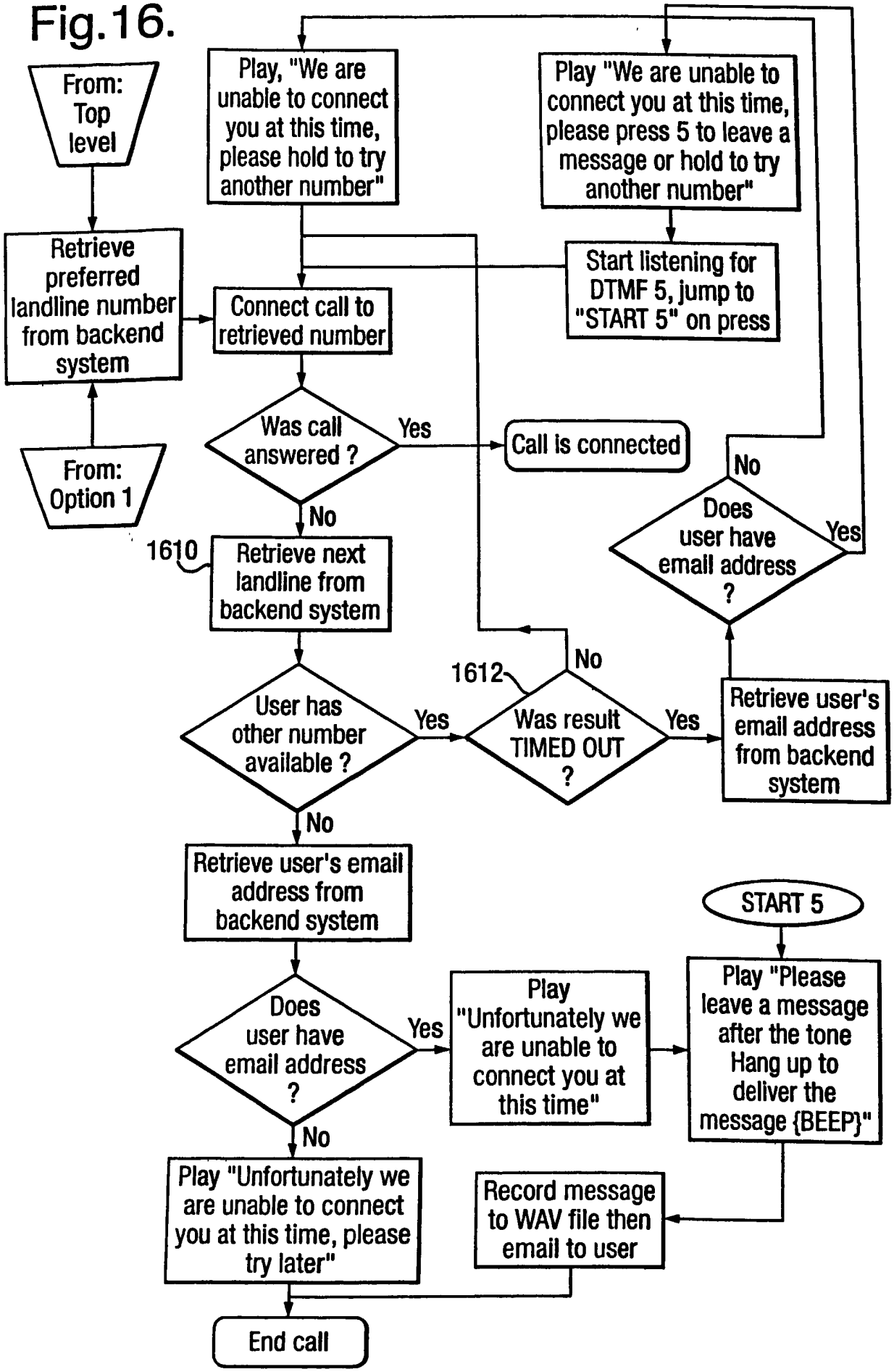

Start of call
Contact back end system to check called number has a registered user
Play "Thanks you for calling the SMS Card business card storage service
Start listening for Hangup, jump to "START HANGUP" on hangup
1510
Is number vali ?
No
Yes
Play "The number you have called is available for registration as part of the SMS Card system. For more details please go to www.smscard.co.uk. Thank you for calling"
End call
Play "To retrieve information press 1 on your telephone keypad now, or hold the line to be connected to the SMS Card user"
Did caller press 1 ?
No
To: Hold
Yes
To: Option 1
START HANGUP
1512
Has a SMS already been sent ?
No
Yes
1516
Does number begin 077, 078 or 079 ?
Yes
No
Call backend system to send message in default format
1518
Call backend system to send SMS
1520
End call
1514

Fig.16.


From: Top level
Play, "We are unable to connect you at this time, please hold to try another number"
Play "We are unable to connect you at this time, please press 5 to leave a message or hold to try another number"
Retrieve preferred landline number from backend system
Connect call to retrieved number
Start listening for DTMF 5, jump to "START 5" on press
Was call answered ?
Yes
Call is connected
No
From: Option 1
1610
Retrieve next landline from backend system
Does user have email address ?
Yes
No
1612
User has other number available ?
Yes
Was result TIMED OUT ?
Yes
No
Retrieve user's email address from backend system
Retrieve user's email address from backend system
START 5
Does user have email address ?
Yes
Play "Unfortunately we are unable to connect you at this time"
Play "Please leave a message after the tone Hang up to deliver the message {BEEP}"
No
Play "Unfortunately we are unable to connect you at this time, please try later"
Record message to WAV file then email to user
End call

Data Processing

This invention relates to the provision and use of a system for providing contact information in response to a request. The invention relates particularly but not exclusively to a method for sending contact information as a message to a message enabled device in response to a voice call to a subscriber number.

The exchanging of business cards is a well established way quickly and easily to distribute contact information. The storage of a business card provides a historical reference point for many individuals, and thus the success of the business card. However, the business card can be lost or go out of date and needs to be carried with an individual (possibly along with many others) to be readily accessible. Business cards therefore create a natural conundrum, keeping the business card about your person increases the risk of losing the card, but storing the card, for example in a card index, prevents ready access to the information it contains.

With the increasing use of mobile telephones having advanced memory capabilities and personal digital assistants (PDAs), it is desirable to have contact information stored electronically on such mobile devices. To load contact information from a business card onto such a mobile device is however time consuming. It is known to be able to send contact information directly from one mobile device to another, but the amount of information and the format of the information is limited, and such direct electronic transfer is significantly more time consuming and complex than the simple exchange of business cards.

The present invention aims to overcome or ameliorate problems associated with existing methods of distributing contact information.

Accordingly a first aspect of the invention provides a method for providing contact information in response to a request, the method comprising the steps of storing in a contact information database contact information for a first user,

and a first user telephone number; receiving from a second user, a request addressed to the first user telephone number; deriving from said request, a destination number for said second user; retrieving from the contact information database contact information assigned to said first user telephone number; and automatically making available said retrieved contact information to said second user using the derived destination number.

Contact information can include a wide range of fields including name, company, address, email address, telephone numbers, web address etc. The first user telephone number may be a standard digital exchange number/ISDN number. In certain embodiments of the invention however, any identifier which allows a second user to connect to a communication service (typically at least including voice), could be used. This may include an identifier for a voice over IP service.

Preferably the request is a voice call to said first user number. Preferably the contact information can be made available without further input from the second user although prompts may be used to enable selection of options for delivery. A request may also be made by SMS message, or by email.

In this way, a wide range of contact information can easily be made available to a person requesting it by making a single request or call to the appropriate number. The user number would typically be included on an individual's business card. In this way the number can be distributed with the speed and ease of simply passing over a business card, and the recipient can then request contact information at a convenient time simply by making a single call. In certain embodiments, once connected, the caller can simply hang up for the requested contact information to be made available to him or her.

Preferably the retrieved contact information is sent to said second user destination number, and this can advantageously be in electronic format, which preferably permits direct electronic input into a memory device

So for example, to use the system an individual could be passed a business card with a user telephone number on it. At any convenient later time, the recipient of the card would call (or if supported send an SMS text message) from, say, a mobile telephone (or other message enabled device) the number. The relevant information (typically the information on an individual's business card) would then be sent as a message back to the calling (or if supported the SMS texting) number preferably in a format enabling direct storage.

Including such a number on a business card allows a recipient of the card (although the number could equally be distributed by means other than a business card) to capture relevant contact details quickly on to a mobile phone or other contact information device.

Preferably the retrieved contact information is sent to said user as an SMS message, however contact information may also be sent as an electronic business card, a Vcard, flash message, MMI/MMS message, or other suitable formats. Advantageously contact information can include image data, which can be sent as a picture or video message. Using picture messaging it is possible to send an image of a business card, a photo of the individual, or a company logo for example. It can be arranged for such an image to be displayed when that person is calling/or are called. This will greatly assist in recognising or remembering the first user.

It is desirable for a second user to be able to select the format in which information is made available or sent. If the request is made by SMS message, a key word or phrase may be included in the request, specifying a desired format, for example "text" for SMS message, or "bus" for business card etc.

It is important that the information can be stored and used quickly and easily by the person requesting the information. It is therefore desirable that the format be compatible with the application intended by the second user. As user requirements change, new formats in which the information is made

available can be provided, without modification of the underlying contact information.

Retrieved contact information can additionally or alternatively be provided by voice announcement. The audio may be recorded by the user and be stored as an audio file in the contact information database, or can be provided using text to speech, from the text information stored. This may offer a simple method for a user to obtain information when it is not required in electronic format, or when the user is unable to receive the information in electronic form, for example over a landline.

The destination number for the second user is preferably derived automatically from the received request. A preferred way to do this is to use caller line identification (CLI) on the received request, to establish the number from which the request is being made. This number can be used as the destination number. Alternatively, if the CLI number is recognised as being included in the contact information database, it can be used as a reference to retrieve an alternative number to which information can be sent. In this case information could also or additionally be sent by email to an email address.

It is possible for the number to be retrieved automatically without answering the call; this enables the information to be provided without a call charge for the requesting user or a call receipt charge (in the case of a freephone number).

It will not always be appropriate to determine the second user destination number automatically, and the second user can be prompted for the destination number. This could for example be a voice prompt. The second user can then enter a number, either using a keypad or by voice, the number being interpreted using speech to text technology.

Advantageously an automatic sequence of actions including default and dependent actions can be taken to determine the second user destination

number, and optionally to provide the requested information. Preferably the CLI number is used as the destination number if that number is message enabled, and preferably the contact information is sent by SMS message. If the CLI number is not message enabled, a prompt for a message enabled number is preferably provided, and/or the contact information is optionally announced by voice.

The interface with the second user is preferably provided by Interactive Voice Response (IVR) which can provide a number of automatic or user dependent prompts. This adds flexibility to the system and allows contact information to be made available for a wide variety of users having different requirements. A user can be led through a menu system if desired. This could present the user with a number of choices, such as the format in which they wish to receive contact information. It remains desirable though, to keep the request process short and easy to use.

The contact information database preferably includes at least one telephone number for said first user such that, at the time of making a request, a second user can be connected to the first user's telephone number. Frequently, more than one telephone number will be stored, and the second user can optionally select a number to be connected to, or may be connected to a default number, and subsequently to a secondary or tertiary number if necessary, for example if the first number is not answered.

Thus the method provides callers with the ability to get the latest contact information or be connected to any of the contact numbers that have been made available. This therefore allows the number to be used as a single point of contact, providing a single number that can put someone through to Office, Home, Mobile or provide Email addresses, Fax numbers, Office addresses or other contact information.

In certain applications it may be desirable to distinguish between categories of numbers to which a user can be connected. For example, to allow a call to a mobile to be connected, a first user may have to pay a premium.

The method preferably further allows the first user to enter or update the contact information held in the database. A number of user selected options can also be chosen, such as a default format in which information is provided, or a preferred number to which a second user may be connected.

Unlike a business card the information held against in the database can be updated. This means that should someone have a business card from several years ago, providing it contains an assigned number corresponding to a database record, all they need to do for example, is to call (or if supported SMS text) the number for the latest contact information, or alternatively request to be connected to any of the latest numbers that have been made available. Equally, if the number is owned by a business, it may be assigned to a particular position or department, and the contact information can be updated as required if the person in a position or department changes.

The method may provide increased functionality if the destination number for the second user is stored in stored in a request database. In this way a first user can be provided with details of requests made to the first user number. The details could include the date and time of requests, the number of requests made and the destination number to which information was sent in response to those requests. A report of requests can optionally be sent to the first user. A report of requests made each day or month for example could be provided automatically at the end of that each day or month as appropriate.

According to a second aspect of the invention there is provided a system for providing contact information in response to a request comprising an input interface adapted to receive a request from a second user addressed to a first user number, a processor adapted to derive from said request a destination number for said second user, a database for storing contact information

corresponding to user numbers; and an output interface adapted to automatically send contact information corresponding to said first user number to said second user destination number.

Preferably the system further comprises a user interface to allow said first user to input or update contact information corresponding to said first user number. The user interface is desirably web based, allowing users freely to subscribe to the service and input information, or to update information.

According to a third aspect of the invention there is provided a method of creating a subscriber contact information database for automatically distributing contact information in response to requests, said method comprising allowing a subscriber to input or update contact information in said database; and providing the subscriber with one or more subscription numbers to which requests for contact information can be addressed.

A subscriber is preferably provided the capability of entering contact information manually, or by downloading information from another memory location. The method may require certain fields to be entered, and may require certain options to be selected.

A particularly useful option is to allow a subscriber to obtain and/or control a plurality of subscription numbers. This may be particularly useful to businesses, which may wish to obtain a large 'block' of numbers. An administrator can then assign individual numbers within the firm. The user interface preferably has different levels of security, such that permissions may be granted among a group of subscribers. According to the security level of the user accessing the database, certain field may be editable while others may be locked. For example, a company name or position field may only be editable by a 'block' administrator. The administrator can optionally assign different security levels and permissions.

Blocks of sequential numbers, or numbers which are easily remembered may be desirable and can be issued selectively, for example on payment of a fee, or only if a block of a certain minimum number is requested.

According to a fourth aspect of the invention there is provided a method for monitoring use of a subscriber contact information system, said system including a subscriber database for storing a subscriber number and associated contact information for subscribers, and said system allowing users to make remote requests for said contact information from said database, the method comprising receiving from a user, a request addressed to a subscriber number; deriving from said request a user destination number; and creating in a usage database a record of said request including said requested subscriber number and the corresponding user destination number.

It can be seen that the method and system of the present invention can usefully extend to building a database of contact information and monitoring and recording transactions relating to that information.

The method can usefully provide to a subscriber a record of requests made to a particular subscriber number and the user destination number corresponding to those requests. Such a record can be sent to the user by email.

Another useful option is to provide to a user a record of requests which have been made from, or which relate to a particular user destination number, and the corresponding subscriber number to which those requests were made. In this way a user can monitor contact information for all or any of the contacts that he or she has requested in the past. The record preferably includes contact information which was returned in response to those requests, or alternatively or additionally contact information currently associated with those subscriber numbers in said subscriber database.

This method can be particularly useful if, an individual loses his or her list of contacts and/or contact information, by losing their mobile phone for example. For a user who had most/all the numbers loaded by using requests, all previously requested information could be downloaded onto a new phone or sent via email. Where subscribers are classified in groups, data concerning the requests made to/from any of the members of that group can be collated. A report can then be provided to one or more members of said group, for example the group administrator.

It will be understood that a wide variety of data abstraction and collation could be performed on recorded data, and a correspondingly wide range of reports can potentially be produced.

According to a fifth aspect of the invention there is provided a method for forwarding a message from a second user to a first user, the method comprising the steps of receiving from a second user, a voice call to a first user number; recording a voice message from said second user; retrieving from a user database an email address assigned to said first user number; and automatically sending said recorded message to said first user via email.

Preferably the message is sent to said first user as a digitally coded audio file, but could also be processed using speech to text processing, and sent to said first user as text.

The invention can beneficially be implemented to be self funding. In this way, there is no charge to subscribers for registering with the service and obtaining a number, and revenue is derived by charging users a fee for making a request. A flat fee for making a request and an additional fee for time spent making the request can be charged through a telecoms provider, using for example an 0871 number in the case of the UK.

Premium services, such as the ability to have a request connected to a mobile number, or a memorable number or a group of numbers may be provided to subscribers at a cost.

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

Fig. 1 is a schematic diagram of an SMS Card system according to one embodiment;

Fig. 2a illustrates the process of calling the SMS Card system according to one embodiment;

Fig. 2b illustrates the process of a further aspect of calling the SMS Card system according to one embodiment;

Fig. 3 illustrates the process of connecting a caller to an SMS Card holder according to one embodiment;

Fig. 4 is a screen shot of a login and registration interface, which may be implemented in conjunction with the system described herein according to one embodiment;

Fig. 5 illustrates one embodiment of a data entry screen, which may enable a user to set up an SMS Card;

Fig. 6 is a screen shot of a screen that enables a user to allocate SMS Card numbers to individuals;

Fig. 7 illustrates one embodiment of a confirmation screen, which may be presented to a user to confirm that the registration was successful;

Fig. 8 illustrates a further embodiment of an interface screen that may be used to enable a user to set up an SMS Card number;

Fig. 9 illustrates an embodiment of a screen that may be used by a user to personalise information that has been entered into the SMS Card system;

Fig. 10 illustrates an embodiment of a user interface screen that enables a user to transmit an SMS Card to a selected messaging device;

Fig. 11 illustrates one embodiment of a corporate login screen;

Fig. 12 illustrates one embodiment of a screen that may allow a user, for example a business, to purchase a block of sequential numbers;

Fig. 13 illustrates a payment screen according to one embodiment;

Fig. 14 illustrates an embodiment of a purchase confirmation screen;

Fig. 15 is a schematic diagram illustrating a further embodiment of the process of calling the SMS Card system;

Fig. 16 is a schematic diagram illustrating the process of connecting a caller to a registered user according to one embodiment.

Apparatus that may be used to implement embodiments of the SMS Card system described herein will now be described with reference to Fig. 1.

One or more input interfaces 110, 112 may be provided to receive incoming requests for information. One input interface may 110 receive incoming telephone calls from mobile telephones or from landline or fixed-line telephones. A second input interface 112 may be provided to receive requests for information via SMS messages 112 or other electronic messages.

Requests received over the telephone input interface 110 may be handled by an Interactive Voice Recognition (IVR) and Response Interface 114. The IVR Interface 114 may communicate with the caller to provide requested information and to prompt the caller to obtain information, such as option choices, from the caller.

Requests received by SMS or another messaging system may be routed to a message communicator device 116. The message communicator device 116 may provide an interface between the messaging network and the SMS Card system to receive and/or transmit messages between the system and the requesting user.

A processor 118 may be provided to receive requests input via either interface and to analyse the requests, obtain the required information, for example from a contact information database 120 and output the information in the desired format. The processor 118 may further be connected to a web interface 122 to receive new or updated subscriber information. The processor may analyse

and/or format the data received via the web interface 122 and store or update the information in the contact information database 120.

In summary, one or more of the following methods may be provided to enable a user to obtain information using an SMS Card number:

Option 1) Call the SMS Card number, for example from a mobile telephone or a fixed-line telephone.

Option 2) Send an SMS message to the SMS Card number.

Option 1) The user calls an SMS Card number, if they have used a mobile telephone and have not withheld their number they are offered the option of hanging up and receiving the SMS card in the default format or, by responding to a number of prompts, the user may be connected to available numbers, listen to information or select the format in which they would prefer to receive the SMS Card (formats offered may include one or more of: SMS, Flash, Picture Message, Business Card, Vcard, email).

If the user withholds their number or calls from a land line they may be requested to enter the mobile number to which the SMS Card should be sent and may then be offered the option of hanging up and receiving the SMS card in the default format. The user may also respond to a number of prompts and may be connected to available numbers, listen to the information, or respond to prompts to decide the format in which they would prefer the SMS Card (formats offered may include one or more of: SMS, Flash, Picture Message, Business Card, Vcard, email).

Option 2) The user sends an SMS to the SMS Card number. If the message sent to the SMS Card Number contains one or more predetermined keywords, the user may be sent the SMS Card in the format associated with the keyword, otherwise they will be sent the SMS Card in the default format.

One embodiment of the process of calling the SMS Card number (Option 1 described above), for example using a mobile telephone or fixed-line telephone network, is set out below:

a) User calls the SMS card number

b) IVR system answers call

c) If the user hangs up at anytime without selecting valid options and the IVR system was able to obtain the calling number and the calling number was a mobile number (or other message-able device) the IVR system will instruct the back-end system to send a SMS card to the calling number. The SMS card will be sent in the SMS Card number holders default format.

d) If the user stays on line they will be request to press '1' to receive SMS card information or press '2' to hear the SMS Card information, or stay connected to be put through to the [Office/Direct line/Mobile/Home]. However if more than one number has been made available the user may be offered an additional option i.e. press '3' to choose a contact number to call.

Pressing '1'

If the IVR system is unable to obtain the calling number or the calling number is not a mobile number (or other message-able device) the IVR system will ask (for example using a recorded voice) for the user to enter the mobile (or other message-able device) number to send the SMS Card to.

The IVR system will then request (via a recorded voice) for the user to select their preferred SMS card format, the user will then select their preferred format using their phone keypad (DTMF). Formats may include SMS, picture message, flash, MMI/MMS, business card, VCard etc. The IVR system will then instruct the back-end system to send a SMS card to the calling number in the selected format.

Pressing '2'

If a WAV file has been uploaded then this will be replayed otherwise all the stored SMS Card information will be announced using text2voice software

in the order on the form (in one embodiment, a user may be able to select the order in which the information is announced).

Pressing '3' (if more than 1 number has been made available to call)

The IVR system will request the selection of the contact number to be put through to i.e. press '1' for Mobile, press '2' for Office number, press '3' call Home. If the number is a mobile or other high rate number the option to be connected may be offered if a fee is paid by the caller or if the SMS Card number owner has paid to cover the associated costs.

One embodiment of the process of sending an SMS to a SMS Card number (Option 2 described above) will now be described in more detail.

a) User sends an SMS message to the SMS Card number.

b) The SMS processing system will pass the message to the back-end system, if the message contains no keywords a SMS Card will be sent in the SMS card number holder's default format to the number that the SMS message came from.

c) If the SMS message contains a keyword the back-end system will send the SMS Card in the format applicable to the keyword to the number that sent the SMS message. Examples of keywords may include 'SMS' for SMS Messages, 'PIC' or 'PICTURE' for Picture messages, 'FLASH' for a Flash message, 'MMI' or 'MMS' for MMS message format, 'B' 'BUS', 'BUSINESS', 'BCARD' for business card format, or 'V', 'VCARD' for VCard format.

The use of the SMS Card service according to one embodiment will now be discussed in more detail with reference to Figs. 2a, 2b and 3.

As set out above, to retrieve information associated with a registered user, the requesting user may telephone an SMS Card number. As illustrated in Fig. 2a, the system may perform a verification procedure according to the following process:

a) The interface that receives the call may contact the back end system 210 (e.g. the processor and contact information database) to check that the SMS Card number that has been called has an associated registered user.

b) In this way, the system determines whether the number that has been called is valid 212.

c) If the number is not valid, for example if there is no associated user in the database, a recorded message may be played to the requesting user 214, for example "The number you have called is available for registration as part of the SMS Card system. For more details please go to www.smscard.co.uk. Thank you for calling." The call may then be ended 216.

d) If the number is valid, details of the options available may be communicated to the requesting user 218, for example a recorded message may play "Thank you for calling the SMS Card business card storage service. To retrieve information press 1 on your telephone keypad now or hold the line to be connected to the SMS Card user". Further options may be provided as set out herein.

e) If the caller presses 1, the information may be transmitted to the requesting user in the default format.

f) If the caller holds the line 222, the system may attempt to connect the user to the registered user using a default contact method.

Fig. 2b illustrates schematically the process of retrieving information or connecting to the registered user according to one embodiment.

a) On receipt of a telephone call from a requesting user, the system determines whether the Caller Line Identifier (CLI) of the requesting user corresponds to a CLI of a mobile telephone 250.

b) If the CLI is not a mobile telephone CLI, the system may play a recorded message to the caller requesting that the caller enters the mobile telephone number to which the CLI should be sent 252.

c) The number entered by the user may be retrieved by the system 254, for example using a Dial Tone Multi-Frequency (DTMF) system.

d) The system may then check the number entered to ensure that the number corresponds to a device that can receive the default type of message 256. For example, in the UK, the system may verify that the number entered is a mobile telephone number by checking that the number starts with 077, 078 or 079.

e) If the number entered can not receive the default type of message, then an error message may be communicated to the user 258 and the system may enable the user to enter an alternative number, for example "The number you have entered is invalid, please try again".

f) If the number of the calling user is a mobile telephone number, or if a verified mobile telephone number has been entered, the user may be presented with a number of options 260, for example "Please chose from the following options. To receive the SMS card information as a normal text, press 1. For a business card, press 2. For VCard, press 3."

g) If the caller dials 1, the system may contact to the backend system to instruct the backend system to generate and send an SMS message 262.

h) If the caller dials 2, the system may contact backend system to instruct the backend system to generate and send a business card 264.

i) If the caller dials 3, the system may contact the backend system to instruct the backend system to generate and send a VCard 266.

j) Once the information has been sent, this may be confirmed to the requesting user 268, for example via a voice message such as "The information has been sent. To end this call please hang up now or hold the line to be connected to the SMS Card user".

Fig. 3 illustrates one embodiment of the process of connecting a user to the registered user:

a) On request from the requesting user, the registered user's preferred landline number is retrieved from the backend system 310, for example from a contact information database.

b) The call is connected to the retrieved number 312.

c) If the call is answered, the requesting and registered users are connected 314.

d) If the call is not answered, a message may be communicated to the requesting user, for example "Press 3 to leave a voice message or hold to try another number" 316. In an alternative embodiment, the system may retrieve the next contact number from the backend system and try to contact the registered user at that contact number.

e) If a further contact number is available 318, the system may attempt to connect the requesting user to the further number.

f) In the present embodiment, if no further contact number is available, the registered user's email address may be retrieved from the backend system 320 and a message may be communicated to the user 322, for example "Unfortunately we are unable to connect you at this time, please leave a message after the tone. Hang up to deliver the message [BEEP]".

g) The requesting user's message may then be recorded 324, for example as a WAV file, which may then be emailed to a user.

h) If the registered user does not have an email address, an error message may be communicated to the requesting user 326 before the call is ended, for example "Unfortunately we are unable to connect you at this time. Please try later".

Fig. 15 illustrates a further embodiment of the process of calling an SMS Card system. The process is similar to that illustrated in Fig. 2a, but includes an additional "Start Hangup" process 1510, which may be implemented at any point during the call at which the requesting user hangs up from the call. The system may listen for a hangup event throughout the call and may then start the Start Hangup process by determining whether an SMS has already been

sent to the requesting user 1512. If an SMS has been sent, the call and the process may then be ended 1514. If no SMS has been sent, the system may determine whether the calling equipment of the requesting user is message-enabled equipment. For example, in the UK, the system may determine whether the calling equipment is a mobile telephone 1516 by determining whether the CLI starts with 077, 078 or 079. If the calling equipment is message-enabled, the system may then cause the backend system to generate and send a message to the CLI of the requesting user in the default message format 1518, for example an SMS message 1520.

Fig. 16 illustrates a further embodiment of a process of connecting a requesting user to a registered user. This process is similar to that illustrated in Fig. 3, but the next number for the registered user is automatically retrieved from the backend system and the presence or absence of a number may be used to determine whether the requesting user is connected to an alternative number or is directed to leave a message using the registered user's email address. The process also includes the step of determining whether a call to a user has timed out. If the call times out, the requesting user may then be invited to leave a message using the registered user's email address.

In a preferred embodiment, the sender code for the SMS card messages, that is the code from which the message appears to have been sent, may be the SMS Card user's mobile number or another contact number. In alternative embodiments, or if they have not provided a number, the message may be sent from a website address, such as www.SMSCard.co.uk. Alternatively, the sender code for the message may be the SMS Card user's number.

The process of creating an SMS Card number will now be described in more detail with reference to Figs. 4 to 7

To create an SMS Card, the user may access a web interface, for example a user may go to a particular website. The user may be presented with a login and registration interface, such as that illustrated in Fig. 4. If the user has not

previously registered, the user may click the "Get an SMS Card" icon 410 to get an SMS Card Number.

The user may then be presented with a data entry screen such as that shown in Fig. 5 and may enter their company or personal information as appropriate. If the SMS Card number is being set up on behalf of a user (for example by a business), the "editable" tag may be selected to indicate that the information should be editable by the user. The data entry screen may also enable a default message format to be selected.

The announce 514 and connect 516 tags may enable a user to define whether the associated information should be released on transmission of the business card and whether the associated numbers should be used to attempt to connect a requesting user to the registered user.

The SMS Card numbers may then be allocated to individuals, for example using a screen as shown in Fig. 6. Individuals may then be able to personalise the SMS Card number or the personalisation can be done at the time the numbers are allocated.

Initially registered users can use a "contact us" feature.

A confirmation screen, such as that shown in Fig. 7, may then be presented to the user to confirm that the registration was successful and to provide the user with a passcode. Sections of the passcode may be requested when the user logs in, in addition to a preselected login name and password, for additional security.

Further interface screens that may be provided in conjunction with the system described are illustrated in Figs. 8 to 14.

Fig. 8 illustrates a further embodiment of an interface screen that may be used to enable a user to set up an SMS Card number.

Fig. 9 illustrates an embodiment of a screen that may be used by a user to personalise information that has been entered into the SMS Card system, for example to edit any editable fields and to define whether information should be announced or transmitted to a requesting user or whether numbers should be provided to enable a requesting user to connect to the registered user.

The interface screen illustrated in Fig. 10 may enable a user to transmit an SMS Card to a selected messaging device. The SMS Card format may be selected and the number of the messaging device may be entered before the SMS Card is transmitted.

Fig. 11 illustrates one embodiment of a corporate login screen, which may be used to enable corporate users to access, monitor and update their accounts. For example, the user could purchase more credits for any paid aspect of the service or alter information relating to the SMS Cards.

Further interface screens may be provided for billed services or for SMS Card services provided on numbers that are not self funding. For example, Fig. 12 illustrates one embodiment of a screen that may allow a user, for example a business, to purchase a block of sequential numbers.

Fig. 13 illustrates a payment screen according to one embodiment. A secure payment system is preferably provided in conjunction with the present system. A confirmation screen, such as that shown in Fig. 14 may be provided to confirm to a user what will be purchased and the total cost.

In some embodiments, it may be possible to define an image to be associated with the SMS Card, for example a corporate logo. The email may then be transmitted with the business card for some types of cards (e.g. MMS messages or picture messages)

Usage of the system may be monitored and logged, which may enable reports to be produced to detail usage and key performance indicators for the system.

A complete call processing and contact information management system and method has been described, having a number of features. Features of the system may be modified, omitted, augmented or substituted and provided independently or in combination with other features. In particular, each sub menu feature or processing option or branch on the accompanying flowcharts may, as appropriate, be modified or substituted or incorporated as an independent feature in an alternative system. As will be appreciated, prompts may be provided using a variety of media (speech, sound, visual or even other) and specific examples should be taken as implicit references to a generic prompt unless the context explicitly requires otherwise. Similarly, all references to specific communication media or protocols (e.g. telephone, text, multimedia message, picture, voice, email etc.) are intended to encompass any appropriate generic communication medium or protocol, including derivatives of existing standards, unless otherwise explicitly required.

CLAIMS

1. A method for providing contact information in response to a request, the method comprising the steps of:

storing in a contact information database contact information corresponding to a first user, and a first user telephone number;

receiving from a second user, a request addressed to the first user telephone number;

deriving from said request, a destination number for said second user;

retrieving from the contact information database contact information assigned to said first user telephone number; and

automatically making available said retrieved contact information to said second user using the derived destination number.

2. A method according to Claim 1, wherein said request is a voice call to said first user number.

3. A method according to Claim 1 or Claim 2, wherein said contact information can be made available without further action by the second user.

4. A method according to any one of Claims 1 to 3, wherein said retrieved contact information is sent to said second user destination number.

5. A method according to Claim 4, wherein said retrieved contact information is sent to said second user in a format to permit direct electronic input into a memory device.

6. A method according to Claim 4 or Claim 5, wherein said retrieved contact information is sent to said second user as an SMS message.

7. A method according to Claim 4 or Claim 5, wherein said retrieved contact information is sent to said second user as one of: an electronic business card, a Vcard, flash message, or MMI/MMS.

8. A method according to any preceding Claim, wherein said retrieved contact information includes picture data.

9. A method according to Claim 8, wherein said picture information is sent to said second user as a picture message.

10. A method according to any preceding claim, wherein said contact information is made available in an assigned default format.

11. A method according to any on of Claims 4 to 10, wherein said second user can select from a list of available formats the format in which the contact information is sent.

12. A method according to any preceding claim, wherein said retrieved contact information is provided by voice announcement.

13. A method according to any preceding claim, wherein said retrieved contact information is provided by SMS message if the caller line identification (CLI) number of the request is SMS capable, and wherein said retrieved contact information is optionally announced by voice to said second user otherwise.

14. A method according to any preceding claim, wherein said destination number for said second user is derived automatically from the request received from said second user.

15. A method according to Claim 14, wherein said destination number for said second user is the caller line identification (CLI) number of the request of the second user.

16. A method according to Claim 14, wherein said contact information database includes the caller line identification (CLI) number of the request of the second user, and wherein said second user destination number is retrieved from said database, said retrieved number corresponding to the CLI number.

17. A method according to any preceding claim, further including playing a prompt for the second user destination number, wherein said destination number for said second user is input by the second user in response to the prompt.

18. wherein said destination number for said second user is the CLI number of the request if said number is message enabled, and a voice prompt is played to said second user requesting a destination number otherwise.

19. A method according to any preceding claim, wherein said contact information database includes a telephone number for said first user, the method further comprising, at the time of making a request, connecting said second user to said first user's telephone number.

20. A method according to Claim 19, wherein said contact information database includes more than one telephone number for said first user, and wherein said second user can be connected to an alternative telephone number if said first user's first telephone number is not answered within a certain time period.

21. A method according to any preceding claim, wherein said contact information database comprises a plurality of categories of contact information.

22. A method according to any preceding claim, further comprising allowing said first user to enter or update the contact information assigned to said first user number in the contact information database.

23. A method according to any preceding claim, wherein the first user can select from a supported format a default format in which to send requested contact information.

24. A method according to any preceding claim, wherein the destination number for said second user is stored in stored in a request database.

25. A method according to Claim 24, further comprising automatically providing said first user with details of destination numbers stored in said request database.

26. A method according to Claim 25, wherein the destination numbers for requests received in one day is provided to said first user.

27. A method according to any one of Claims 24 to 26, wherein said details of said destination numbers is automatically sent to said first user by email

28. A system for providing contact information in response to a request comprising:

an input interface adapted to receive a request from a second user addressed to a first user number;

a processor adapted to derive from said request a destination number for said second user;

a database for storing contact information corresponding to user numbers; and

an output interface adapted to automatically send contact information corresponding to said first user number to said second user destination number.

29. A system according to Claim 28, wherein said input interface is a voice based interface.

30. A system according to Claim 29, wherein said input interface comprises an IVR interface.

31. A system according to Claim 28, 29 or 30, wherein said output interface is an SMS communicator.

32. A system according to any one of Claims 28 to 31, further comprising a user interface to allow said first user to input or update contact information corresponding to said first user number.

33. A system according to Claim 32, wherein the user interface allows said first user to select a default format in which said contact information is sent.

34. A system according to Claim 32 or 33wherein said user interface allows a first user to select a telephone number to which a second user, on making a request, can be connected.

35. A system according to Claim 32, 33 or 34, wherein the user interface allows a third user to grant permissions to a first user for inputting or updating contact information corresponding to said first user number.

36. A system according to any one of Claims 32 to 35wherein said user interface is web-based.

37. A method of creating a subscriber contact information database for automatically distributing contact information in response to requests, said method comprising:

allowing a subscriber to input or update contact information in said database; and

providing the subscriber with one or more subscription numbers to which requests for contact information can be addressed.

38. A method according to Claim 37, wherein the contact information associated with a subscription number is automatically sent to a user in response to a request from said user addressed to that subscription number.

39. A method according to Claim 37 or 38, wherein a subscriber can enter contact information manually.

40. A method according to any one of Claims 37 to 39, wherein a subscriber can download information to said database.

41. A method according to any one of Claims 37 to 40, wherein a subscriber can select a default format in which said contact information is distributed.

42. A method according to any one of Claims 37 to 40, wherein a subscriber is provided with a plurality of subscription numbers, and wherein the subscriber can grant permissions for the inputting or updating of contact information for selected subscription numbers to selected sub-subscribers.

43. A method according to Claim 42, wherein a subscriber can download contact information for some or all of said plurality of subscription numbers.

44. A method according to any one of claims 37 to 43, wherein subscribers can preview contact information as it will be distributed.

45. A method for monitoring use of a subscriber contact information system, said system including a subscriber database for storing a subscriber number and associated contact information for subscribers, and

said system allowing users to make remote requests for said contact information from said database, the method comprising:

receiving from a user, a request addressed to a subscriber number;

deriving from said request a user destination number; and

creating in a usage database a record of said request including said requested subscriber number and the corresponding user destination number.

46. A method according to Claim 45, wherein contact information assigned to said subscriber number is retrieved from the subscriber database and automatically sent to said derived user destination number.

47. A method according to Claim 45 or Claim 46, wherein said retrieved contact information is sent by SMS message.

48. A method according to any one of Claims 45 to 47, wherein requests for contact information comprise voice calls.

49. A method according to any one of Claims 45 to 47, wherein requests for contact information comprise SMS messages.

50. A method according to any one of Claims 45 to 49, wherein said derived user destination number is the number from which the request was received.

51. A method according to any one of Claims 45 to 50, further comprising providing to a subscriber a record of requests made to a particular subscriber number and optionally the user destination number corresponding to those requests.

52. A method according to Claim 51, wherein the record of requests includes all requests received in a specified time period.

53. A method according to Claim 51 or 52, wherein the record of requests is sent to said subscriber automatically at the end of a specified time period.

54. A method according to Claim 51, 52 or 53, wherein said record of requests is sent to said subscriber by email

55. A method according to any one of Claims 45 to 54, further comprising providing to a user a record of requests which have been made from, or which relate to a particular user destination number, and the corresponding subscriber number to which those requests were made.

56. A method according to Claim 55, wherein said record of requests includes contact information which was returned in response to those requests.

57. A method according to Claim 55, wherein the record of requests includes contact information currently associated with those subscriber numbers in said subscriber database.

58. A method according to Claim 55, 56 or 57, wherein the record of requests is sent to said user by email.

59. A method according to Claim 55, 56 or 57, wherein the record of requests is sent to said user by SMS message.

60. A method according to any one of Claims 45 to 59, wherein subscribers are classified into groups, and wherein records from said usage database concerning a group of subscribers is provided to one or more members of said group.

61. A method according to Claim 60, wherein a record of requests made to each subscriber number of a group of subscribers is provided to one or more members of said group.

62. A method of forwarding a message from a second user to a first user, the method comprising the steps of:

receiving from a second user, a voice call to a first user number;

recording a voice message from said second user;

retrieving from a user database an email address assigned to said first user number; and

automatically sending said recorded message to said first user via email.

63. A method according to Claim 62, wherein said message is sent to said first user as a digitally coded audio file.

64. A method according to Claim 62 or 63, wherein said message is processed using speech to text processing, and sent to said first user as text.

65. A method substantially as any one herein described with reference to the accompanying drawings.

66. A system substantially as herein described with reference to the accompanying drawings.

INVESTOR IN PEOPLE

Application No: GB0425925.5 **Examiner:** Mr Ben Buchanan

Claims searched: 1-61, 65 & 66 **Date of search:** 2 February 2005

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1, 28 & 37 at least	WO 02/25403 A2 (ANTS.COM) see esp. p.3 line 30 - p.4 line 7
X	1, 28 & 37 at least	US 2004/0088259 A1 (CELIK) see esp.sec. [0006], [0008], [0010] & [0034]
X	1, 28 & 37 at least	US 6374259 B1 (CELIK) see esp. col.1 line 59 - col.2 line 46 & col.5 line 66 - col.6 line 16
X	1, 28 & 37 at least	US 2002/0184199 A1 (CELIK) see esp. sec.[0006], [0008], [0010] & [0035]
X	1, 28 & 37 at least	US 2003/0135567 A1 (MAIL REGISTRY) see esp. abstract, sec. [0012], [0018] & [0020]

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^{X} :

G4A

Worldwide search of patent documents classified in the following areas of the IPC^{07}

G06F

The following online and other databases have been used in the preparation of this search report

Online: WPI, EPODOC, PAJ