(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
13 August 2009 (13.08.2009)

PCT

(10) International Publication Number
WO 2009/100466 A2

(51) International Patent Classification:
H04W 4/10 (2009.01)

(21) International Application Number:
PCT/ZA2009/000009

(22) International Filing Date:
4 February 2009 (04.02.2009)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2008/1271 6 February 2008 (06.02.2008) ZA

(71) Applicant and
(72) Inventor: **BRAVO, Steven** [ZA/ZA]; 22 Fredman Drive, 2146 Sandton (ZA).

(74) Agent: **HAHN & HAHN INC. C. BERNDT; JF LUTEREK; C MICHAEL; PCR VENTER; CJ WHEELER; VC WILLIAMS**; 222 Richard Street, Hatfield, 0083 Pretoria (ZA).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*

(54) Title: TELECOMMUNICATION INTERACTIVE PLATFORM

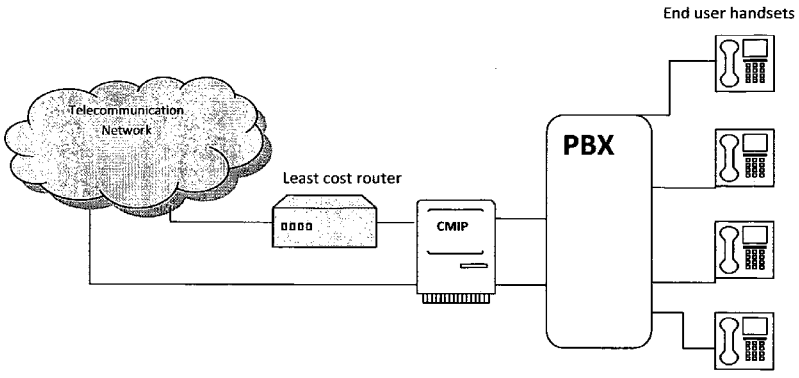

Figure 1 - System set up

(57) Abstract: The invention provides an interactive communication system which includes one or more telephony handsets, a telephone exchange for connecting calls between a telecommunications network and the one or more telephony handsets, a router, modem, or other connecting device for connecting to the internet, and an application and/or database server which stores one or more pre-recorded voice recordings of which one or more are communicated to a caller in accordance with predetermined system rules and/or caller choices, and optionally additionally communicating a message to the caller in response to demographic and other information via one or more technology selected from email, SMS (Short Message Service), instant messaging, and MMS (Multimedia Message Service) using the internet router, modem, or other connecting device to deliver same, which router, modem, or other connecting device is also used for remote management of the system, wherein the system is operable in a cellular network environment using one or more of GPRS, GSM, and WAP technology.

WO 2009/100466 A2

Telecommunication Interactive Platform

Field of the Invention

The invention relates to a telecommunication interactive platform which provides content to Telecommunication system user.

Summary of the Invention

The invention relates to a system which allows for advertisements and messaging on an interactive basis via pre recorded voice recordings in conjunction with supporting technologies such as email, SMS (Short Message Service) and MMS (Multimedia Message Service) along with the internet for remote management and delivery, in an automated environment to users of a telecommunications network, which system allows for the utilisation of dead time, whether specially created or in a least cost routing environment, and makes use of this dead time to advertise to a targeted audience to the benefit of both the advertiser and the business/organisation where the system is installed. This system can also operate in an environment were least cost routing does not exist.

Thus, the invention provides an interactive communication system which includes:

- one or more telephony handsets;
- a telephone exchange for connecting calls between a telecommunications network and the one or more telephony handsets;
- a router, modem, or other connecting device for connecting to the internet; and

- an application and/or database server which stores one or more pre-recorded voice recordings of which one or more are communicated to a caller in accordance with predetermined system rules and/or caller choices, and optionally additionally communicating a message to the caller in response to demographic and other information via one or more technology selected from email, SMS (Short Message Service), instant messaging, and MMS (Multimedia Message Service) using the internet router, modem, or other connecting device to deliver same, which router, modem, or other connecting device is also used for remote management of the system.

The system may be operable within a cellular network environment using one or more of GPRS, GSM, and WAP technology.

The system allows for the utilisation of a dead time while a least cost router selects the least cost route for connecting a call or any other dead time in the system, and makes use of this dead time to communicate the one or more pre-recorded voice recording and one or more optional additional message to a targeted audience to the benefit of one or both of the message originator and the business or organisation where the system is installed.

The system may include a least cost router for connecting a call using a least cost route.

The system may allow advertisers to play pre-recorded voice clip adverts/messages to targeted end users within a business of which the demographic information is known. The advertiser will pay per message communicated i.e. advert played, allowing the business where the system is installed to benefit as they will get a rebate on such messages i.e. adverts played to reduce their outbound telecommunication costs.

The system may communicate with the existing PBX and telephonic set ups of a business and allow the business where the unit is installed to save costs on out bound calls by giving

them a rebate when a message such as an advert is played to a caller and the call is successfully connected.

In addition, the system may be used for internal messaging whereby pre-recorded messages are produced and sent out to pre-defined users via telephone or in a cellular environment by a mobile handset, for any type of internal communication.

In the internal communication version of the system there may be no length limit on these messages and no rebate is received as no telecommunication costs are incurred except in the case of standard cellular network costs.

The system may work behind a normal PBX without a least cost router so as to reduce the cost of a local and national call or as a in line device with a least cost router playing an advert in the dead time of seven seconds that already exists so as to enhance the saving on a cellular outbound call, international outbound, or national call even further. The system may thus reduce the cost of a local or national outbound call by playing the pre-recorded message by creating dead time, or delay time, before call connection in which time the message plays.

On completion of the advert being played, the user may be prompted to press a key on their handset at which time the user will be sent a rich content advert either via email, SMS or MMS.

In addition the system may be used for internal messaging whereby pre-recorded messages, which state type of event, date, place and time, are produced and sent out to pre defined users via telephone for any type of internal communication. This may include meetings, announcements or any other events.

The system may in addition be used for internal messaging whereby pre-recorded messages are produced and sent out to pre-defined users via telephone or in a cellular environment by a mobile handset, for any type of internal communication. In such a system there is no length limit on these messages and no rebate is received as no telecommunication costs are incurred except in the case of standard cellular network costs.

The system may operate with a Multi Switching Centre (MSC) in a cellular environment to play pre-recorded messages to selected cellular subscribers that wish to use the service before call connection in return for rebate in the form of possible reduction or airtime or additional airtime minutes.

On completion of the message being communicated, the user may be prompted to press a key on their handset at which time the user will be sent a rich content message either via SMS, instant messaging, or MMS, whereafter the call is connected.

Description of Embodiments of the Invention

System in Detail

The system operates on both the normal telecommunications network and cellular network industry and in conjunction with existing devices such as a private branch exchange (PBX), Mobile Switching Centre (MSC), Personal Computer (PC), advanced telephony card and telecoms network. The system process will work as follows in a normal operating environment and adapted to cellular industry:

1. The PC and telephony card is installed at a site with an existing PBX, least cost router and internet connection as shown in figure 1.

2. The list of extension numbers and users are setup on the system as they are programmed on the PBX. Additional information is also captured including cellular phone numbers, email addresses of users and variable criteria of the user. These criteria include but are not limited to the age, gender, religion, income range, and a "Group", *see 2.1* that the user belongs to.

2.1 The system allows for different groups that can be added and removed as desired. A group can be setup and configured to skip advertisements on specific days entirely, or to receive adverts only at specific times if required. i.e. to play Steers™ Whacky Wednesday™ to the user group only between 10.00am and 12.00pm on a Wednesday and at no other time during the week. Along with this an end user can be configured to not receive any messages at all or configured to receive a certain amount per day, week or month. The system also allows for only certain groups to receive an advert, for example to play First For Women Insurance™ only to the female demographic or to play an advert only to the users in the Marketing and Finance department of the business. Each user and advertisement will belong to a group that has been set up on the system and this allows a decision to be made as to what advert to play to which group and when.

2.2 Ages are in ranges for example 18 to 24 or 30 to 40 and allow for the advertisement to be played to a targeted audience.

2.3 Incomes are also in ranges with a minimum and maximum value and allow the advertisement to be played to a targeted income group.

2.4 Gender, Religion and Race allow for further refinement and allow for the adverts to be played to a very specific demographic if it is required.

3. Advertisements are then loaded into the system along with a voice recording and two possible rich content advertisements. The advertisements can then be configured to play according to certain criteria as stated below.
    i. The date range in which the advert is active and can be played.
    ii. Time range when the advert can be played.
    iii. The age range the advert is played to.

iv. Income range the advert can be played to.
v. The religion (if applicable) the advert is played to.
vi. The gender the advert is played to if applicable.
vii. The group the advert can be played to if applicable. See 2.1
viii. Whether the first advert has a follow on of rich content and how many days after the original advert is played must this follow on advert of rich content be sent to the user.

Each advert has rich content attached in a PDF along with the possibility of secondary rich content material that is used as a follow up message.

4. A user makes an outbound call from a telephone via the PBX and before they are connected, the system will pick up the extension number, look up the users criteria and choose an applicable advert that applies to the user.

5. The advert is played via the telephony card to the user's telephone handset and each advert will prompt "a keystroke press, for example 5 (five) for further information". If the user presses the prompted keystroke for example 5 (five) the system will consider it a successful reply and the rich content will be sent to the user via email to their registered email address or in a mobile environment via SMS or MMS to their registered cellular number.

6. The user then still stays connected to the dialled number and the telephony card will check to see if an answer is received on the other end. If it is, then the entire procedure is successful and flagged as complete. If no answer was detected then the advert is considered played by the advertiser but NO rebate is given to the business where the system is installed.

7. All adverts are/can be controlled remotely via standard internet connection protocols TCP/IP and http/https, this gives the software the ability to switch off adverts at remote sites or change the criteria of an advert at any remote site.

The rules engine allows the system to pick the right advert to play and when to play it according to the extension of the user dialling out the call. This functionality means that the

system can play limited or no messages to some users and more to others depending as and how they are configured.

The default will allow for 3 (three) adverts per day per user with a maximum of 69 (sixty nine) per month to be played to each user but these can be adjusted per group resulting in these new rules applying to the users in that group. Figure 2 shows the normal operation of the system starting from the users call.

Step by step breakdown of a platform for a corporate client (Target audience interaction) is shown in figure 2

1. Individual dials a number to make a call.
2. The call is routed via the PABX infrastructure as normal
3. PABX is configured to route the call via the gateway
4. The gateway is placed at client's premises, connected directly to existing PABX.
5. Advertisement is played – individual may choose to receive more information relating to the advertisement by pressing for example '5' on their handset
6. On completion of advert, the number dialled is routed outbound for connection.
7. Call is connected as normal.
8. Further information pertaining to the advert is sent to the individual via email, if they requested the information by pressing a keystroke for example'5' on their handset
9. Additional information received in individuals email inbox

Cellular Network model

The invention allows for a unique media platform that delivers advertising content to GSM cellular handsets in an unobtrusive and non invasive manner.

This technology allows advertisers to play an advert to a cellular subscriber whose demographic information is known. The advertiser will pay per advert played allowing the

subscriber to receive a rebate when an advert is played to their handset and the call is successfully connected

On completion of the advert being played the subscriber will be prompted to press a keystroke on their handset and may choose to receive additional information via SMS or MMS to their message inbox relating to the advert they have just heard

Step by step breakdown of said platform for a cellular client (Target Audience interaction) is shown in Figure 3

1. Individual dials a number to make a call as normal.
2. The call is routed via Base Station infrastructure as normal.
3. Call is then routed to the nearest MSC – Mobile Switching Centre.
4. MSC is programmed to route the call onto our interactive communication gateway.
5. Subscriber listens to message / advert. Advertisement is played – individual may choose to receive more information relating to the advert by pressing a keystroke for example '5' (five) on their handset.
6. On completion of advert, the number dialled is routed outbound via the MSC for connection.
7. Call is connected as normal.
8. Further information pertaining to the advert is sent to the individual via SMS or MMS, if they requested the information by pressing a keystroke for example '5' (five) on their handset
9. Additional information is received in individuals' message inbox.

If an advert has a second follow up advert, then the system checks the rule for how long after the first advert the second advert must be sent. This advert is sent in rich format via email, SMS or MMS to the user a fixed number of days after the first without any intervention from the user.

Internal Communication System (Push Messaging)

Corporate Model

For the internal communication the system can be configured to play a message, by stringing together pre defined clips, to a target group of users. The "push" functionality means that the system will call the users extension rather than waiting for the user to make a call. This message will be played to the end user at pre-defined times/ intervals before the event set by the administrator of the application. In follow up to this an email is sent to the user with the details of the event without the need for the user to press any key on their handset. This rich content will supply the end user of all the details of the event as per the voice clip recording played to them.

This internal communication does not go through the telecommunication network but rather works off the PBX installed, in turn no rebate is given to the business where the system is installed but is intended as a value added benefit to the existing system.

Example of the internal system would be a voice clip saying, "Sales meeting, Tuesday Twenty November, 2pm to 3pm, boardroom". These clips can be configured on site by an administrator at any time and then will play to the target audience as they have been set up. Custom recordings can be loaded into the system by administrator with limit on length, a custom message can be created via a WYSIWYG interface to accompany the recording.

- Some of the benefits of the Internal Communication System – Corporate Model are listed below:
    - This form of communication can be used to achieve numerous objectives i.e. to advise of performance levels within a division, a reminder of targets that need to be achieved, acknowledgement and praise of staff members who have achieved specific milestones
    - This system can be administered internally
    - Multiple messages can be sent to different or the same people

- Mission critical information is communicated to the intended target audience
- It allows access of information to staff members who do not have PC's on their desks
- Staff members may not read generic mails but will pick up a ringing phone

Cellular Network Model

The internal communication system can be configured to play a message to a targeted group of subscribers by stringing together pre defined clips created by an administrator of the Cellular network operator. This push functionality means that the system will call the subscribers cellular number and a message will be played to the handset of the subscriber. The targeted group of subscribers is determined by location, income, age, gender, hobbies, interests, and the like.

Once the message has been played, the subscriber will receive a follow up SMS or MMS detailing the event or announcement.

Examples of the internal push to talk messaging model would be a voice clip saying:

- "Our cellular company won the award for the best cellular operator in 2008"
- "Our cellular company is the proud sponsor of the 2010 FIFA™ world cup. For match schedules SMS the word "match" to 555"

Some of the benefits of the Internal Communication System – Cellular Network Model are:

- This form of communication can be used to achieve numerous objectives i.e. to advertise package and product specials to the subscriber base of the cellular

network operator, upcoming events sponsored by the cellular network operator, mission critical information can be communicated to the subscriber base ect

- Multiple messages can be sent to different or the same subscribers

Technology

The platform of the invention has been built using proprietary programming tools provided by Microsoft™. These core development platforms have been used to provide a state of the art product that conforms to all international standards for technology development.

The platform has been developed with four key development factors in place:

1. The programming languages to be used:
2. The database's to be used to store all required information
3. The transport mechanisms
4. The reporting mechanisms

To allow for communication with an existing PBX unit, an advanced telephony card is required along with a PC that will run the database and custom software. The telephony card needs to be advanced with features to allow for detecting key presses, checking if call is successfully connected, playing sound, and getting the caller ID, in this light Dialogic is proposed as the best technology for the system. Technology required to perform the functionality of the system will include.

Programming: C#
XML transport layer
ADO.NET, Stored procedures, functions
TAPI -interfaces
DTMF - Key press detection, Analogue telephonic technology
C++

Web based technology	ASP.NET
	AJAX for dynamic update
Databases	MS SQL SERVER 2005
Transport	TCP/IP
	UDP
	XML
	WAP

The gateway technology includes the following:

- Online hosted email generated marketing applications
- Play group functionality
- Content management functionality
- Time management gateway
- Campaign delivery software
- Statistical analysis software
- Database management software
- Management interface
- Daily reports analysis

Additionally, the system needs an internet connection to allow for communication with a central server. Once information is recorded at a site, it is updated on the central server and

rich content, if applicable, is sent to the end users. The internet connection is also vital for remote administration that allows for updating variables and adverts at each site from a central server. Remote administration allows the full manipulation of the sites where the system is installed as the system continuously checks for updates from the central server.

Glossary

PBX	- Private branch exchange
PC	- Personal Computer
PDF	- Portable document format
SMS	- Short message service
MMS	- Multimedia message service
MSC	- Mobile Switching Centre
Dialogic	- Intel's telephony card which of highest standard
CMIP	– Call Media Interactive Platform
Dead time	- delay that exists in connecting a call
GPRS	- General Packet Radio Service
GSM	- Groupe Spécial Mobile
WAP	- Wireless Access Protocol

Claims

1. An interactive communication system which includes:

- one or more telephony handsets;
- a telephone exchange for connecting calls between a telecommunications network and the one or more telephony handsets;
- a router, modem, or other connecting device for connecting to the internet; and
- an application and/or database server which stores one or more pre-recorded voice recordings of which one or more are communicated to a caller in accordance with predetermined system rules and/or caller choices, and optionally additionally communicating a message to the caller in response to demographic and other information via one or more technology selected from email, SMS (Short Message Service), instant messaging, and MMS (Multimedia Message Service) using the internet router, modem, or other connecting device to deliver same, which router, modem, or other connecting device is also used for remote management of the system,

wherein the system is operable in a cellular network environment using one or more of GPRS, GSM, and WAP technology.

2. A system as claimed in claim 1, which allows for the utilisation of a dead time in the system, which dead time is specifically created or is as a result of the action of a least cost routing environment, and makes use of this dead time to communicate the one or more pre-recorded voice recording and one or more optional additional message to a targeted audience to the benefit of one or both of the message originator and the business or organisation where the system is installed.

3. A system as claimed in claim 2, which operates in an environment were least cost routing is not used and the system creates a delay to play the pre-recorded message.

4. A system as claimed in claim 1, which includes a least cost router for connecting a call using a least cost routing.

5. A system as claimed in claim 1, which system allows advertisers to play pre-recorded voice clip messages to targeted end users within a business of which the demographic information is known.

6. A system as claimed in claim 4, which system allows advertisers to play pre-recorded voice clip messages to targeted end users within a business of which the demographic information is known.

7. A system as claimed in claim 5, wherein the advertiser pays per message played, allowing the business where the system is installed to benefit as they will get a rebate on messages played to reduce their outbound telecommunication costs.

8. A system as claimed in claim 6, wherein the advertiser pays per message played, allowing the business where the system is installed to benefit as they will get a rebate on messages played to reduce their outbound telecommunication costs.

9. A system as claimed in claim 1, which communicates with an existing PBX and telephonic set ups of a business and allows the business where the unit is installed to save costs on out bound calls by giving them a rebate when a message is played to a caller and the call is successfully connected.

10. A system as claimed in claim 1, which works behind a normal PBX without a least cost router so as to reduce the cost of a local or national outbound call by playing the pre-recorded message by creating delay time before call connection in which time the message plays.

11. A system as claimed in claim 4, which works behind a normal PBX as a in line device with a least cost router so as to reduce the cost of a, cellular, international or a national call by communicating the pre-recorded message in the dead time that already exists so as to enhance the saving on a cellular, international, or national outbound call.

12. A system as claimed in claim 1, which operates with a Multi Switching Centre (MSC) in a cellular environment to play pre-recorded messages to selected cellular subscribers that wish to use the service before call connection in return for rebate in the form of possible reduction or airtime or additional airtime minutes.

13. A system as claimed in claim 12, wherein on completion of the message communicated, the user is prompted to press a key on their handset at which time the user will be sent a rich content message either via SMS, instant messaging, or MMS, whereafter the call is connected.

14. A system as claimed in claim 1, wherein on completion of the message being communicated, the user is prompted to press a key on their handset at which time the user will be sent a rich content message either via email, SMS, instant messaging, or MMS.

15. A system as claimed in claim 1, which in addition is used for internal messaging whereby pre-recorded messages are produced and sent out to pre-defined users via telephone or in a cellular environment by a mobile handset, for any type of internal communication.

16. A system as claimed in claim 15, wherein there is no length limit on these messages and no rebate is received as no telecommunication costs are incurred except in the case of standard cellular network costs.

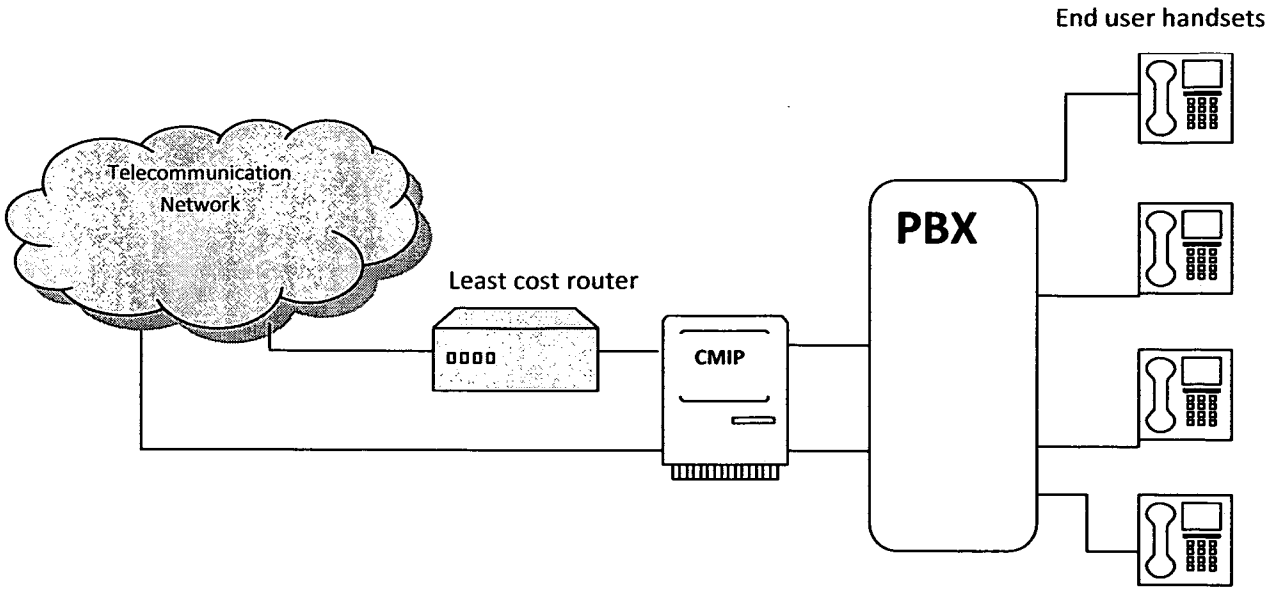

Figure 1 - System set up

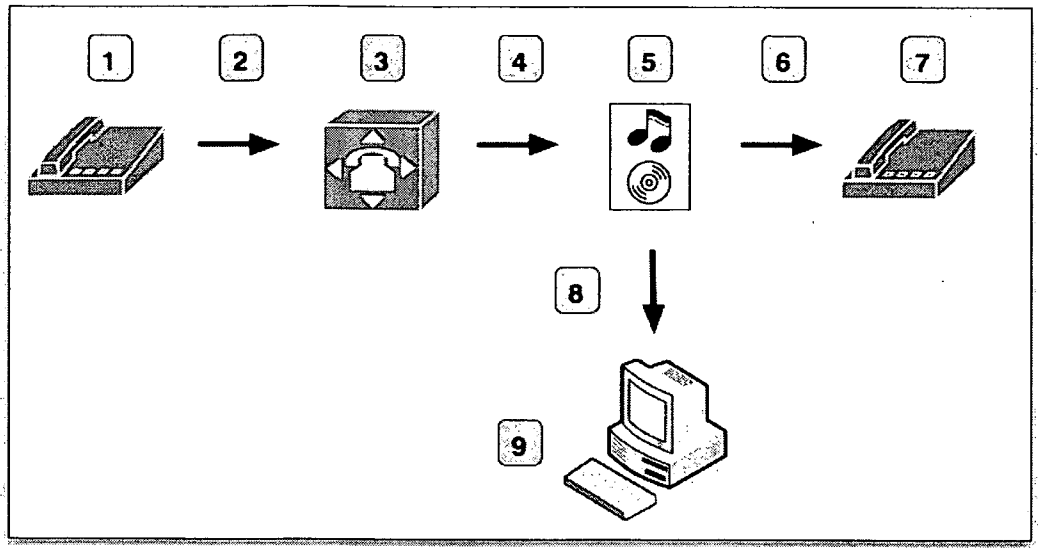

Figure 2

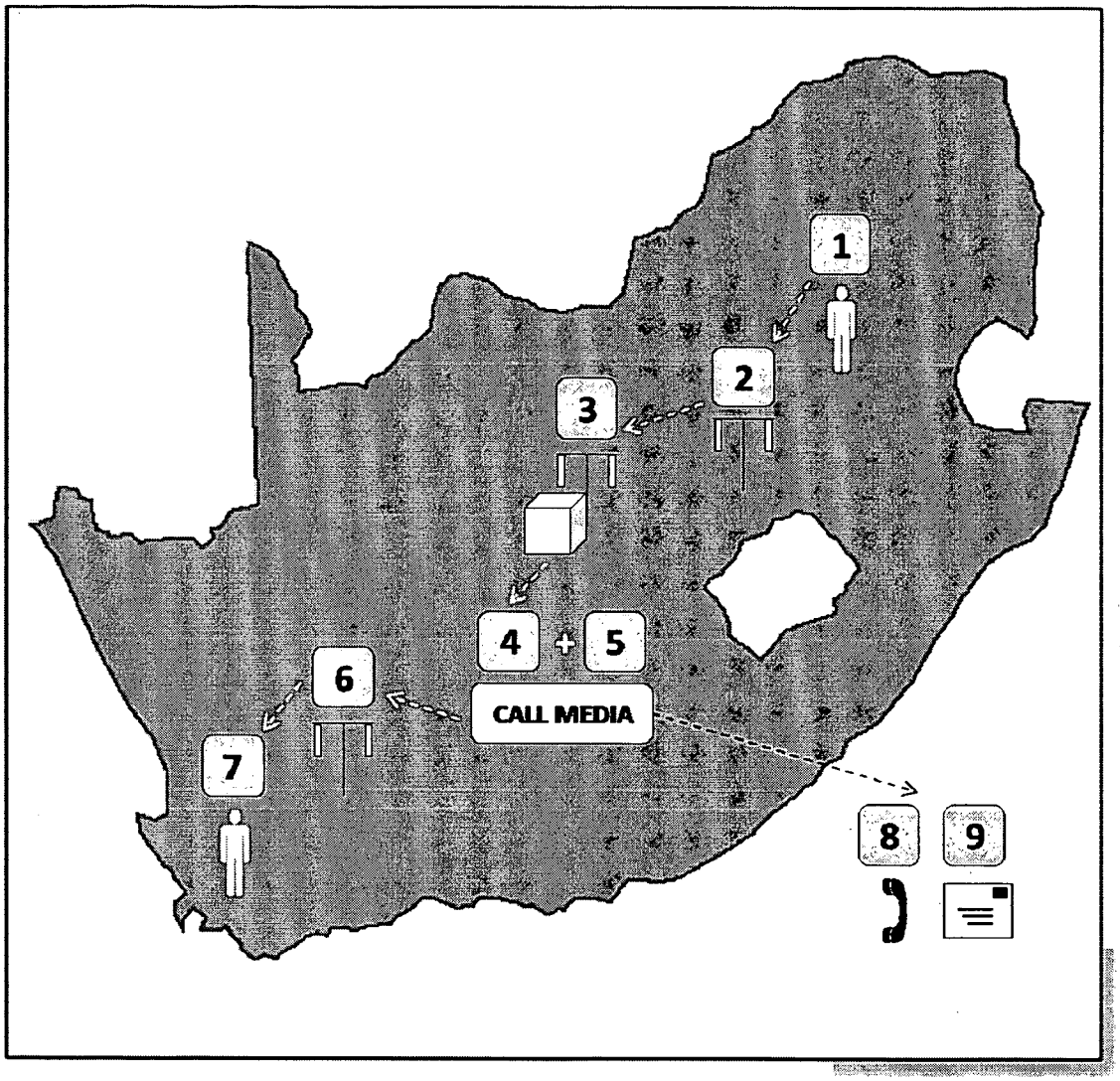

Figure 3 - Cellular operation