Common Virtual Number for Shared Telephony Services

BACKGROUND OF INVENTION

FIELD OF INVENTION

This invention relates to the use of universally addressable virtual phone numbers to facilitate communication between a pair or group of users owning physical numbers associated with their devices or service identifiers provided by their service providers. More specifically the present invention relates to a system and method for two or more users to own common virtual telephone numbers to manage their multimedia communication.

Description of Prior Art

Traditionally every user is provided a unique identifier such as a telephone number to identify them and people communicate with each other by calling or messaging a number associated with the recipient user. However no system exists currently where two or more people jointly own a telephone number. If a user wants to call a married couple and wish them on their wedding anniversary, he or she has to call or message twice. But what is lacking a system that provides a single number that can be used to call or message the couple and wish them at the same time. Extending this need, there is no system that exists where a team of users can call one number and update each other of status information and reports of interest to the team.

Also delivering value added services mandate the users to dial a specific number and identify themselves with a sequence of interactive steps before service can be delivered. For example if a user wants to deliver a voice greeting the steps involved include dialing a service access number, then recording a greeting and typing the target user's number. This approach requires remembering service access numbers and following different kinds of sequence for different kinds of services. However it is easy for anyone to remember one number that is shared between two people and accessing a multitude of services in a well defined single interface to services. The proposed system solves this need for shared numbers and enabling easier access to services.

Traditional methods of communication do not facilitate easy asynchronous communication. Most of the time one of the parties in the pair or group is not available at the same time to communicate. A common number can facilitate storing or communication indefinitely and access at the convenience of each individual. Text messaging, voice and video mails enable asynchronous communication to some extent but they do not offer directed communication within a pair or group and are not extensible to store messages for long period of times. Also traditional systems club all communication together and do not differentiate channels of communication. The proposed system of virtual numbers will categorize communication such as friend, family, biz, etc and helps to analyze, review and manage pair or group communications over long periods of time.

Traditionally all communication if stored are archived at every user's account or device thereby not providing a single repository as a consistent record. The proposed system eliminates the need for duplicating recordings and manages one consistent record of all conversation between a pair or among a group of users.

Services like chat forums, audio/video conferencing , push-to-talk, group messaging, social networking and closed user group offer somewhat similar functionality but all of them still rely on individual identities and do not offer joint ownership.

Chat forums are joined in by users either by invitation or by adding to the list. As such the users don't have control over the forums as it is not owned by participants.

Conferencing services publish one number and people join in the conferences by typing in access codes and not authenticated who the users are and thus technically not owned by anyone but access is granted to anyone who knows the access code.

Push-to-talk is basically a broadcast service where a user can choose a list of users to talk to at the same time. It is more convenient that talking to every individual. It is just an easier form of conferencing.

Group messaging like email address list is controlled from every individual. One list created by one person is not the same list owned by others. As such it is joint ownership but a convenient way to send the same message to a group of people without the need to send multiple times.

Social networking sites are another form of group messaging. But a message posted by one person goes to one set of people and another posted by one of the members in that list goes to a different set of people. Here again the service is not jointly owned.

In view of the forgoing, there is a need for a universally addressable virtual phone numbers to facilitate communication between a pair or group of users owning physical numbers associated with their devices or service identifiers provided by their service providers which is consistent and every action taken by one of the users in the group is treated exactly the same as any other user.

SUMMARY OF INVENTION

One or more of the problems of the conventional prior art may be overcome by various embodiments of the system and method of the present invention.

It is thus the basic object of the present invention to provide a system and methods of creating, assigning and managing virtual telephone numbers that can be shared by two or more users to access telephony services.

A further object of the present invention is to provide a method for service providers wherein the mobile operators create a list of virtual numbers that can be published to two or more users to purchase a number or a specific number of interest from the available list and own it as a common number and access services shared by them jointly.

It is another object of the present invention is to provide a method for service providers wherein the application developers or third party content providers can offer services on a virtual number that will be of interested to the pair or group owning a particular virtual number.

It is yet another object of the present invention is to provide a method for users to access the virtual number and associated services like any other telephone number from anywhere in the world. It is further object to provide methods for users to subscribe to service or services of interest on the virtual number they jointly own.

It another object of the present invention to provide for a system and method to own a common virtual telephone number to manage multimedia communications.

It is another object of the invention to provide for a system and method of providing services like recording conversation as a private diary, greetings and advertisements from third parties of interest to the group of users, reminder services etc or any such service that is relevant to a pair or group of users.

It is yet object of the invention to provide application developers the system and methods to deliver services specifically targeted at a couple, a family , a team or group made up of an arbitrary number of users bound together by the virtual number.

It is yet another object of the present invention to provide for a virtual number which doesn't require any SIM card. The invention allows the subscriber to have one common Virtual Number between 2 uses.

The foregoing objects of the present invention are presented in the following way:

1. **Product Component: User Mobile Features/Functions**

Functions	**Settings**	**Descriptions**
Storage Settings	Limited or Unlimited	The storage size can be set to limited or unlimited base on user subscription
Notification Alert	Outbound call /Miss call (TIMER)	The miss call alert is to notify the user when there is new message in the inbox. However the alert are set base on time e.g 9am 1 pm 5 pm. If there is new message at 8.45 am, the system will give a miss call to user at 9 am.
Activation	Counter = 1	First time user call to activate Virtual Number
Virtual Number	Counter =1	First time user when makes a video call .A demo will be played
Notification Alert	SMS	Notification to alert the user that they have new message
Video Message	LIFO or FIFO	The playback functions can be set either LIFO (Last in first out) or FIFO (first in first out)
DTMF Setup	*	Key press for backward/previous
DTMF Setup	#	Key press for forward/next
DTMF Setup	0	Key press to reply to message

2. User Web Features/Functions

Functions	Descriptions
Buy Virtual Number	User can buy ,search and select Virtual Number
SMS Notification	Notification to verify A party & B party mobile number. A password will be generated in order to allow the user to use the web.
Invite /manage 3rd Party / Guest	Allows user to invite their own friends into their Virtual Number
Invite /Manage Virtual Number Friends	Allows the user to invite friends which own Virtual Number.
3rd Party Privilege Setting	Enable the user to give certain privileges to 3rd party when they login.
3rd Party View Video File Privilege	Allows the Owner of Virtual Number to select certain video file that is allowed to be viewed by 3rd Party
View Video Message/Inbox	View all the messages in the inbox (calendar mode).
Tagging	Allows the user to do simple tagging (predefined tags) on their video messages
Search	Allows to search video message base on date, time and tags
Login/Logout	Login/Logout features
Manage Account	Allows user to manage the web setup (themes),personal details and
Terminate Account	Allows the user to terminate the Virtual Number

3. OPERATOR WEB FEATURES /FUNCTIONS

Functions	Descriptions
Create Account for customer	Register walk in customer to purchase Virtual Number. User will key in
Virtual Number provisioning	Provisioning of Virtual Number into 2 type Premium and Normal
Administration	Allows to create user, set user privilege
Reports	Generate Usage Reports, Subscriber Reports

PROCESS 1: BUY VIRTUAL NUMBER THROUGH VIRTUAL NUMBER WEBSITE

Steps:

1) Click the SIGN UP link
2) Enter required details in the Sign Up form. User has to fill in this information.

a. A Party's name

b. A Party's MSISDN (validation: mobile number format)

c. A party's email address (validation: email address)

d. Select a Virtual Number (User can select up to 3 Virtual Number choices)

   i. Country – by default system should detect where the user from

   ii. HELP link should be provided

   iii. User can either choose the number by using the table list or suggested Virtual Number

e. B Party's name

f. B Party's MSISDN (validation: mobile number format)

g. B party's email address (validation: email address)

h. Security image

   i. Terms and conditions (validation checkbox)

3) Click BUY button

4) Upon clicking the Button the system will send notification to B party & A Party.

   a. An E-MAIL Activation Link to B Party

   b. SMS Invitation to B Party)

   c. SMS notification to A party

5) The user will be prompted the following:

   a. The content of the prompt will ask the user to check their mobile for password to access VIRTUAL NUMBER website.

   b. The content of the prompt will ask the user to check their email .An activation link has been send to the email account.

6) After the prompt the page will be directed to main home of Virtual Number.

PROCESS 2: B PARTY ACCEPT INVITATION THROUGH E-MAIL

Steps:

1) B party will be directed to Virtual Number Website

2) The page will display the Virtual Number choices (Numbers selected by A Number) to choose

3) B Party then will select the Virtual Number.
4) The system will send notification to A party & B party
    a. A party will receive a confirmation email that B party has accepted the invitation.
    b. A party will receive a SMS that B party has accepted the invitation.
    c. B party will receive a SMS
5) B Party then can set VIRTUAL NUMBER website password for login to the web.

PROCESS 3: B PARTY ACCEPTS INVITATION THROUGH SMS.

Steps:

1) SMS Content Consist Of VIRTUAL NUMBER CHOICES
2) B party then select the preferred Virtual Number and reply to the SMS
3) A party will receive a SMS that B party has accepted the invitation.
4) B party will receive a SMS notification.

PROCESS 4: A PARTY FIRST TIME LOGIN TO VIRTUAL NUMBER WEBSITE.

Steps:

1) A party receive the notification. The notification will include OTP for VIRTUAL NUMBER website.
2) A party will login using his MSISDN and the one time activation password.

PROCESS 5: BUY VIRTUAL NUMBER THROUGH OPERATOR OR RETAILER.

Steps:

1) Operator /Retailer accessing the CMS.
2) Enter required details in the Sign Up form. User has to fill in this information.
    a. A Party's name
    b. A Party's MSISDN (validation :mobile number format)
    c. A party's email address (validation : email address)
    d. Select a Virtual Number (User can select up to 3 Virtual Number choices)

i. User can either choose the number by using the table list or by entering a number range

e. B Party's name

f. B Party's MSISDN (validation :mobile number format)

g. B party's email address (validation: email address)

3) Click Submit button

4) Upon clicking the Button the system will send notification to A party & B party.

a. An E-MAIL Activation Link to B Party.

b. SMS Invitation to B Party

c. SMS notification to A party

5) The operator then will print out the account statement /details .The prints out will be given to the user together with the login information (OTP for Virtual Number website) & set of instruction.

PROCESS 6: ACTIVATING THE VIRTUAL NUMBER THROUGH MOBILE.

Steps:-

1) User A or User B will make their first video call to activate their account.

2) User A or User B will be prompt with a Video Demo.

3) User A or User B can start using the Virtual Number by leaving a video message.

PROCESS 7: TERMINATE VIRTUAL NUMBER THROUGH WEB.

Steps:-

1. User logs into Virtual Number Website
2. Click on TERMINATE MY VIRTUAL NUMBER link
3. Click CONFRIM
4. An Email notification will be send to B party
5. System will send a predefine termination message to users Virtual Number inbox.
6. The Virtual Number account is suspended.

PROCESS 8: TERMINATE VIRTUAL NUMBER THROUGH OPERATOR.

Steps:-

1) Either one of the party calls in to cancel the Virtual Number account.
2) Operator then verifies the caller information.
3) Upon confirmation an email notification will be sent to the other party email address.
4) A predefine termination message will be drop to users Virtual Number inbox.
5) The Virtual Number account is suspended

PROCESS 9: USER B CONFIRMS TERMINATING OWN VIRTUAL NUMBER.

Steps:-

1) User click on the given link provided in the email
2) The other party agrees to the terminate by clicking the CONFIRM button in the given link
3) The Virtual Number account will be terminated in x days after both parties agree to the termination

PROCESS 10: INVITE 3RD PARTY (GUEST) TO VIRTUAL NUMBER THROUGH THE WEB.

Steps:-

1. Users login into Virtual Number website.
2. User then click Invite Friends link.
3. User fills up the information of the friend.
    a. 3rd Party's name
    b. 3rd Party's email address (*mandatory)
    c. 3rd Party's MSISDN (*mandatory)
    d. Assign Auto generated Virtual Number (*mandatory)
4. User then will set the privilege of the 3rd Party
    a. View Video /Playback
    b. Tagging Enable for Video

c. Reply/Video Comment (only applicable using the mobile phone)

5. User then clicks the Invite Button.
6. Upon clicking the invite button the system will send
   a. An approval mail will send to the B party. (pls refer to process 11)
7. Prompt user that the invitation will be completed once the B party approved.

**The Virtual Number assign for the guest is to enable the guest to access the video

PROCESS 11: B PARTY APPROVE THE 3RD PARTY (GUEST) INVITATION BY A PARTY

Steps:-

1. B party receives the approval mail.
2. B party then clicks the approval link.
3. B party will be directed to Virtual Number website.
4. B party then enter MSISDN and password
5. B party can select Approve or Reject
6. An activation /invitation mail to the 3rd party
   a. The activation link will expire within x number of days
   b. Both A & B party will see the status of their Guest invitation when they login.

PROCESS 12: 3RD PARTY (GUEST) ACCESSING VIRTUAL NUMBER THROUGH THE WEB (1ST TIME).

Steps:-

1. Guest receives the invitation mail.
2. Guest then clicks the invitation link.
3. System then sends a SMS notifications to 3rd party consist of the assigned Virtual Number.
4. Guest will be directed to Virtual Number website.
5. Guest enters Virtual Number & Click Enter
6. Guest then can view friend's video.

PROCESS 13: 3RD PARTY ACCESSING VIRTUAL NUMBER THROUGH MOBILE (1ST TIME).

Steps:

1. User will receive SMS notification.
    a. Instruction on how to access via mobile.
    b. The SMS content consist of the assign Virtual Number.
    c. User then makes a video call the Virtual Number
        i. Either user can dial using the MSISDN registered by party A OR use other number
2. User then will be prompt to key in the Virtual Number (assigned by A party) provided in the SMS.
3. User then will be able to watch the video message.
4. A & B party's video will be played.
5. If there is no video messages a Demo Video will be played.

PROCESS 14: 3RD PARTY (GUEST) GIVES A VIDEO COMMENT VIA MOBILE. (NOT THE FIRST TIME)

Steps:

1. 3rd party makes a video call to the Virtual Number.
2. The user won't be prompt for Virtual Number input as the user is not a first time user.
3. The 3rd party then watches the video content.
4. 3rd party presses 0 to reply to the video message
5. System then will check 3rd party privilege.
6. If the user is given the privilege then the system will allow the user to record a video message.

PROCESS 15: 3RD PARTY (GUEST) ACCESSING VIRTUAL NUMBER THROUGH WEB. (NOT THE FIRST TIME)

Steps:

1) The 3rd party visit to Virtual Number website

2) The 3rd party user select guest view button /link

3) The 3rd party enters the Virtual Number to access the guest view.

PROCESS 16: A PARTY INVITES ANOTHER VIRTUAL NUMBER USER TO JOIN ITS OWN VIRTUAL NUMBER.

Steps:-

1. A party login into Virtual Number website.
2. A party then click Invite another VIRTUAL NUMBER Friend link.
3. A party fills up the information of the friend.
    a. X Party's name
    b. X Party's email address (*mandatory)
    c. X Party's MSISDN (*mandatory)
    d. X Virtual Number (optional)
4. A party then will set the privilege of the 3rd Party
    a. View Video /Playback
    b. Tagging Enable for Video
    c. Reply/Video Comment (only applicable using the mobile phone)
5. A party then clicks the Invite Button.
6. Upon clicking the invite button the system will send
    a. An approval mail will send to the B party. (pls refer to process 17)
7. Prompt A party that the invitation will be completed once the B party approved.

PROCESS 17: B PARTY APPROVE THE VIRTUAL NUMBER USER INVITATION BY A PARTY

Steps:-

1. B party receives the approval mail.
2. B party then clicks the approval link.
3. B party will be directed to Virtual Number website.
4. B party then enter MSISDN and password
5. B party can select Approve or Reject

6. An activation /invitation mail to the VIRTUAL NUMBER USER
    a. Both A & B party will see the status of their Virtual Number Friend invitation.

PROCESS 18: VIRTUAL NUMBER USER ACCEPT THE INVITATION FROM A PARTY

Steps:-

1. VIRTUAL NUMBER USER receives the invitation mail.
2. VIRTUAL NUMBER USER then clicks the approval link.
3. VIRTUAL NUMBER USER will be directed to Virtual Number page.
4. The Virtual Number page will consist of 2 option
    a. Guest Invitation link is user don't have Virtual Number
    b. OWN A VIRTUAL NUMBER link
5. VIRTUAL NUMBER USER then select OWN A VIRTUAL NUMBER link
6. VIRTUAL NUMBER USER then will be directed to a page. The page will ask the VIRTUAL NUMBER user to key in :-
    a. MSISDN
    b. PASSWORD
    c. VIRTUAL NUMBER
7. VIRTUAL NUMBER USER then clicks the accept button.
8. The system will validate the MSISDN, PASSWORD & VIRTUAL NUMBER.
9. The system then will send an email verification to A party

PROCESS 19: A PARTY VERIFIES VIRTUAL NUMBER USER

Steps:-

1. A party will receive the verification email
2. A party will select the verification link
3. A party will be directed to the verification page
4. A party login
5. A party got to view the VIRTUAL NUMBER USER DETAILS
    a. VIRTUAL NUMBER USER'S NAME

b. VIRTUAL NUMBER USER'S MSISDN

c. VIRTUAL NUMBER USER'S EMAIL ADRESS

6. A party then select the accept button.

7. The system then will add VIRTUAL NUMBER USER to A & B Party list & vice versa to VIRTUAL NUMBER USER

PROCESS 21: USER TO SET VIDEO FILE RIGHTS

Steps:

1) Users login into Virtual Number website.
2) User then click Video file rights link.
3) User selects the preferred video to be shared by marking on the check box.
4) User select friends from friends list by marking on the check box.
5) User then select the properties of the video file sharing rights
   a. Enable video comment on this video
6) User then select OK button
7) A confirmation box will be prompt to the user.

BRIEF DESCRIPTION OF THE DRAWINGS

So that the manner in which the features, advantages and objects of the invention, as well as others which will become apparent, may be understood in more detail, more particular description of the invention briefly summarized above may be had by reference to the embodiment thereof which is illustrated in the appended drawings, which form a part of this specification. It is to be noted, however, that the drawings illustrate only a preferred embodiment of the invention and is therefore not to be considered limiting of the invention's scope as it may admit to other equally effective embodiments.

Fig 1: Existing number system

Fig 2: Proposed virtual number system

Fig 3: Create, Publish and assign virtual numbers

Fig 4: Delivering value add services

Fig 5: Multi-modal access

CLAIMS

1. We claim a system and method of creating, assigning and managing common virtual telephone numbers that can be shared by two or more users to access telephony services and manage multimedia communications.