Abstract:

A method and system for setting a media broadcasted clip as RBT. The media broadcasted clip is broadcasted over a broadcasting network. The media broadcasted clip is broadcasted along with a media code. A user may place a request for setting a media broadcasted clip associated with the media code as her RBT. When the pre-defined conditions of the method are met, the media broadcasted clip is set as RBT of the user.
TITLE: METHOD AND SYSTEM FOR SETTING MEDIA FILE AS RBT

FIELD OF THE INVENTION
The invention relates to ring back tones in telecommunication systems. More specifically, the invention relates to a method and a system for setting a media broadcasted clip as RBT.

BACKGROUND
In a telecommunication network, when a caller makes a call to a callee using her communication terminal, the caller hears a call progress tone. Examples of the communication terminal include, but are not limited to, a mobile phone, a wireless and a landline phone. The call progress tone is heard by the caller till the callee responds to the call and initiates a conversation with the caller. The call progress tone may be, for example, but not limited to, a ring-back tone (RBT), a call busy tone and a call-waiting tone. RBT is usually a monotonous sound heard by a caller while waiting for a callee to respond to a call.

The RBT, conventionally a monotonous sound, can be replaced by other tones or a plurality of tones. Examples of tone may be, but not limited to, song, advertisement, music, news, and sports commentary. Users have an option to select an RBT of their choice by subscribing to an RBT service. An individual subscribed to an RBT service is hereinafter referred to as an RBT subscriber. The RBT service enables the RBT subscriber to choose a particular tone or a plurality of tones as the RBT. Depending on the services provided by the telecommunication service provider, the RBT heard by the caller can be selected by the callee, by the telecommunication service provider or by the caller herself.

Typically, the choice of RBT available to users is restricted. Users can only set RBTs that are available with the telecommunication service provider. Further, the process of choosing an RBT is cumbersome and lengthy. Users may have to browse through a huge list of RBT to reach the desired RBT and in a circumstance of call failure in the process, users may have to start again from the beginning. Further, advertisement of RBT service is restricted to the users of the telecommunication service provider. A large number of users remain uninformed about RBT service.
This is an undesired advertising limitation faced by RBT service providers. Also, users may wish to set a song as RBT which they have just heard. The users may not wish to go through the lengthy process of searching the desired song from a huge list of RBT and may eventually give up the idea of setting RBT.

Hence, there is a need of a RBT service which allows users to choose their RBT from a wider range of RBTs. Also, there is a need to advertise the RBT service to a wider set of audience to increase the revenue of RBT service providers. Further, there is a need of a method by which wide viewership of media houses could be used as a platform for advertising RBT services. In a similar way there is a need of media house to evaluate their popularity and promote their brand value and contents through the telecommunication service providers.

DEFINITIONS

Caller: The communication terminal user who initiates a call is called a 'caller'

Callee: The communication terminal user to whom the call is made is called a 'callee'

Ring back Tone (RBT): A tone which is played to the callers while they are waiting for the callees to respond to the call is called an RBT. The RBT is played till the callees respond to the call:

User: A person who is using telecommunication infrastructure for communication.

Media broadcasted clip: Media broadcasted clip is a multimedia file broadcasted on a broadcasting network. Examples of media broadcasted clip may include, but not limited to, songs, movie clip, speech, recorded performance, and television/radio commercials.

Request: A request placed by a user over a telecommunication infrastructure. The user may place a request by sending an SMS, a voice mail or by making a call. The request may be for setting an RBT.

SUMMARY OF THE INVENTION

A method and a system for setting media broadcasted clip as ring back tone (RBT) is
disclosed. The invention enable users to set a media broadcasted clip as RBT, thus increasing the options available to users for choosing RBT. In an embodiment of the invention, users can set a plurality of media broadcasted clips as RBT.

In an embodiment in accordance with the invention, the system receives a request and verifies if the request is coming from a RBT subscribed user. In an embodiment in accordance with the invention, the system subscribes the user to RBT service when user is not a RBT subscriber. In yet another embodiment, the system verifies if the telecommunication service provider of the user supports media broadcasted clips as RBT.

Once the pre-defined conditions are met, the system sets the media broadcasted clip as RBT. In an embodiment in accordance with the invention, the system provides subscription statistics for each media house to users and to the media house. The system provides a separate web based interface to media house for checking the subscription details regularly.

**BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1 is a schematic illustrating a telecommunication environment with RBT system in accordance with an embodiment of the invention;

FIG. 2 is a flow diagram illustrating a method for setting a media broadcasted clip as RBT of a user;

FIG. 3 is a schematic illustrating the RBT system and its elements according to the invention;

FIG. 4 is a schematic illustrating the application server and its elements according to the invention; and

FIG. 5 is a flow diagram illustrating the method for setting a media broadcasted clip as RBT of a user after checking the pre-defined conditions.

**DETAILED DESCRIPTION**

In the following description, for the purposes of explanation, specific details are set forth in order to provide a thorough understanding of the invention. However, it will be apparent that the invention may be practiced without these specific details.
Various aspects and features of example embodiments of the invention are described in more detail hereinafter.

FIG. 1 is a schematic depicting a telecommunication environment. According to an embodiment of the invention, a telecommunication service provider enables user 102 to connect to a telecommunication infrastructure 104 for making a request. User 102 may use a communication terminal like a landline telephone, wireless telephone, mobile telephone, etc. to connect to telecommunication infrastructure 104. Each communication terminal has a unique communication terminal number associated with it. Telecommunication infrastructure 104 includes Mobile Switching Center (MSC) 108, central database 110 and a Ring Back Tone (RBT) system 112. MSC 108 enables a connection between user 102 and telecommunication infrastructure 104. Central database 110 is used to store the subscription information for subscribers of the telecommunication service provider. An example of central database 110 is a Home Location Register (HLR). The subscription information for each subscriber includes a unique identifier for the subscriber, communication terminal number of the subscriber, current location of the subscriber, various services the subscriber is registered to, and the likes.

User 102 sends a request to RBT system 112 by using a communication terminal. MSC 108 receives the request and establishes a connection with RBT system 112.

FIG. 2 is a flow diagram illustrating the method for setting a media broadcasted clip as RBT of the user in accordance with an embodiment of the invention.

At step 202, the media broadcasted clip is broadcasted over a broadcasting network. Examples of broadcasting network include, but are not limited to, television channel and radio channel. User 102 may initiate a request for setting the media broadcasted clip as RBT. In an embodiment of the invention, user 102 watches the media broadcasted clip and sends the request for setting RBT. In another embodiment, user 102 watches a plurality of media broadcasted clips and sends the
request for setting the plurality of media broadcasted clips as RBT. The request is routed through MSC 108 to RBT system 112. At step 204, RBT system 112 receives the request for setting RBT. The request may contain specific details about the requested RBT. In an embodiment of the invention the specific details may include, but not limited to a media code and subscription period. The media code may be a text, a number or any combination thereof. For example, the media code may be a serial number assigned to the song while broadcasting over the broadcasting network. In case of a song, the media code may be the title of the song. In an embodiment of the invention a plurality of media broadcasted clips may have a single media code.

At step 206, RBT system 112 sets the media broadcasted clip as RBT of user 102. In an embodiment of the invention a user profile of user 102 is updated by RBT system 112. Updating the profile of user 102 may include, without limitation, updating RBT for user 102 and updating date and time of subscription. In another embodiment RBT system 112 sets the plurality of media broadcasted clip as RBT of user 102.

FIG. 3 is a block diagram illustrating RBT system 112 in accordance with an embodiment of the invention. RBT system 112 receives the request for setting media broadcasted clip as RBT.

RBT system 112 includes signaling cards 302, media cards 304 and application server 306. Signaling cards 302 and media cards 304 enable communication with MSC 108. In an embodiment of the invention application server 306 receives the request for setting media broadcasted clip as RBT of user 102.

Signaling cards 302 are used for processing signals from MSC 108. The signals provide specific information related to the call. For example, MSC 108 sends signals regarding initiation of call by user 102, termination of call by user 102 etc. The signals are transmitted using standard protocols such as SS7 protocol. An example of signaling cards 302 is NMS TX-4000 cards. Signaling cards 302 include a software component used for signal handling. The software component may be written in C/C++ or any other programming language.
Media cards 304 are used for processing media, for example playback, recording, Dual-tone Multi-frequency (DTMF) etc., to and from MSC 108. An example of media cards 304 is NMS AG-4040 card. Media cards 304 include a software component used for media processing and handling. The software component may be written in C/C++ or any other programming language.

Media cards 304 and signaling cards 302 are connected to application server 306 and serve as a link between MSC 108 and application server 306. Further, application server 306 includes various applications based on computer programming languages like JAVA, C/C++, etc. Different applications are invoked based on input from signaling cards 302 and media cards 304. For example, when user 102 initiates a call, an application for playing RBT is invoked. Application server 306 is discussed in detail in conjunction with FIG. 4.

FIG. 4 is a block diagram illustrating application server 306 in accordance with an embodiment of the invention.

According to an embodiment of the invention, application server 306 includes a content management module 402, an RBT player 404, a provisioning module 406, a reporting module 408, and a third party interface 410.

Content management module 402 is a database for storing media broadcasted clips. Content management module 402 is accessible to other components of application server 306 through provisioning module 406. Content management module 402 contains subscription information of users. Contents of content management module 402 may be modified and updated by an RBT administrator.

RBT player 404 is module for playing RBT when user 102 receives a call. RBT player 404 receives instructions from provisioning module 406 for playing a particular RBT. The instructions may include, but not limited to a content id code and time duration of playing RBT file.
Provisioning module 406 of application server 112 makes decisions based on the pre-defined conditions. Provisioning module 406 checks if pre-defined conditions are satisfied. The pre-defined conditions may include, but not limited to checking RBT subscription of user 102, checking telecommunication service providers support for the VAS, checking balance of user 102. In case the pre-defined conditions are satisfied, provisioning module 406 sets RBT for user 102 by updating the user profile in content management module 402. Updating the profile of user 102 may include, without limitation, updating RBT for user 102, updating a user identifier, and updating date and time of subscription. The user identifier may include, but not limited to, name of user 102, communication terminal number of user 102, location of user 102, and gender of user 102.

Reporting module 408 is connected to provisioning module 404 and third party interface 410. Reporting module 408 is a database which maintains statistics of RBT subscription. The statistics may include, but not limited to subscription details about specific media clips, frequency of RBT requests for a particular media broadcasted clip, trends of RBT requests for a particular media broadcasted clip, and comparative RBT request statistics for different media houses.

Third party interface 410 is an interface allowing a third party to retrieve contents of reporting module 408. In an embodiment according to the invention, third party interface 410 is a web based interface. The web based interface may have login for individuals and media houses. Individuals and media houses may login on the web based interface and view the statistics provided by reporting module 408.

FIG. 5 is a flow diagram illustrating the method for setting a media broadcasted clip as RBT of the user in accordance with an embodiment of the invention.

At step 502, media house broadcasts the media broadcasted clip over the broadcasting network along with the media code. Examples of media broadcasted clip may include, but not limited to a serial, a movie clip, a speech, recorded
performance a commercial, and performance. Thus for example, a speech given by a movie star while receiving any award can be media broadcasted clip. Examples of broadcasting network includes but not limited to television broadcasting network and radio broadcasting network. In an embodiment according to the invention the media code is broadcasted simultaneously with the media broadcasted clip. For example, in a television the media code is displayed at the bottom of the screen when the performance is being broadcasted. In another embodiment according to the invention the media code is played any time during the performance is played. For example, in a radio broadcasting of a performance, the media code may be announced at any time during the performance. In an embodiment of the invention, a plurality of media broadcasted clips may have a single media code. User 102 may request for setting the plurality of media broadcasted clip as RBT. The media clips in the plurality may be played in a defined order or may be played at random.

In an embodiment according to the invention the media broadcasted clip is stored in content management module 402 before the broadcast of the media broadcasted clip over the broadcasting network. The RBT administrator may obtain the media broadcasted clip from the media house prior to the broadcast. The media house may provide the RBT administrator with a schedule of media broadcasted for a week or a month in advance. In another embodiment according to the invention the media broadcasted clip is not present with RBT system 112 at time when the media broadcasted clip is being broadcasted. RBT system 112 may obtain the media broadcasted clip from the media house upon receiving a request for setting RBT for the media broadcasted clip. The media code broadcasted along with the media broadcasted clip may be predetermined by the media house in consultation with the RBT administrator.

At step 504, provisioning module 406 receiving a request for setting the media broadcasted clip as RBT. The request may be placed by user 102 using her communication terminal. In an embodiment according to the invention user 102 may wish to set a media broadcasted clip as RBT after watching the broadcast on a broadcasting network. User 102 may place the request along with the media code for the media broadcasted clip. The request is received by the provisioning module 406.
of RBT system 112.

At step 506, provisioning module 406 checks certain pre-defined conditions prior to setting of RBT. In an embodiment according to the invention, while checking the pre-defined conditions, provisioning module 406 checks if user 102 requesting for RBT is a subscriber of RBT service. In another embodiment according to the invention, provisioning module 406 checks if telecommunication service provider of user 102 supports the media broadcasted clip for setting as RBT. In yet another embodiment according to the invention, provisioning module 406 checks if user 102 has sufficient funds in her account to subscribe for RBT service.

At step 508, provisioning module 406 provides a prompt to user 102 after checking the pre-defined conditions. The prompt may be a text message, an audio message, a call etc. In an embodiment according to the invention user 102 may be prompted to subscribe to the RBT service for setting the media broadcasted clip as RBT. In another embodiment user 102 may be informed that her telecommunication service provider does not support setting the media broadcasted clip as RBT. In yet another embodiment user 102 may be informed of insufficient funds and prompted to recharge the funds in her account in order to set the media broadcasted clip as RBT.

In an embodiment according to the invention when the request is placed by user 102 who is not a subscriber to RBT service, provisioning module 406 subscribes user 102 to RBT service.

At step 510, when pre-defined conditions are satisfied provisioning module 406 updates the database in content management module 402. Updating the content management module includes but not limited to updating RBT subscription information, subscription duration, and subscription charges. In an embodiment according to the invention content management module 402 contains a content id for each media broadcasted clip. The content id is a unique code assigned to each media broadcasted clip stored in content management module 402. In an embodiment according to the invention the content id is generated by the RBT
administrator.

In an embodiment according to the invention content management module also contains a table containing a mapping of the media code and corresponding content ids. The media code is the code broadcasted along with the media broadcasted clip and the content id is the unique code for referring to media broadcasted clip stored in content management module 402. In another embodiment a plurality of media broadcasted clips may have a single media code. The single media code may be used by user 102 to refer to the plurality of media broadcasted clips. When the code refers to a plurality of media clips, the code is mapped with all the content ids of media clips of the plurality. While playing RBT corresponding to a particular code, RBT system identifies the content ids associated with the code. The media clips corresponding to all the content ids identified are played as RBT.

In an embodiment according to the invention, provisioning module 406 provides content management module 402 the media code sent by user 102 in the request. Content management module 402 upon receiving the media code uses the table to identify the media broadcasted clip associated with the request.

In an embodiment according to the invention reporting module 408 is a database maintaining various statistics related to subscription. Reporting module 408 connects to content management module 402 periodically to obtain details such as subscription date, time, media broadcasted clip and user 102 information. User 102 information may include but not limited to geography, language, and job description. Reporting module 408 may generate various statistics after obtaining user 102 information. Examples of statistics may include, but not limited to, number of subscriber for the media broadcasted clip, frequency of subscription for the media broadcasted clip, subscription trends for the media broadcasted clip and comparative number of subscription for the media broadcasted clips from different media houses. Reporting module 408 maintains these statistics and allows individuals and media houses to view these after logging in through third party interface 410. In an embodiment according to the invention third party interface 410 may be a web based interface with various options available to an interface user. The interface user may
be an individual and a media house. The options available at third party interface 410 may include but not limited to selecting date range, selecting media house, selecting the media broadcasted clip and selecting the statistics. In an embodiment the interface user is available with options including but not limited to selecting multiple media houses and corresponding media broadcasted clips. The statistics provided by reporting module 408 may be useful for user 102 in identifying the popular media broadcasted clips. Further, statistics may be useful for media houses in benchmarking the popularity of their broadcasted contents.

While example embodiments of the invention have been illustrated and described, it will be clear that the invention is not limited to these embodiments only. Numerous modifications, changes, variations, substitutions and equivalents will be apparent to those skilled in the art without departing from the spirit and scope of the invention as described in the claims.
CLAIMS:

1. A method of setting a media broadcasted clip as ring back tone (RBT) for a user, the media broadcasted clip being broadcasted over a broadcasting network, the method comprising:
   a. broadcasting a media code along with the media broadcasted clip over the broadcasting network;
   b. receiving a request for setting the media broadcasted clip as RBT of the user, wherein the request comprises the media code; and
   c. setting the media broadcasted clip as RBT of the user based on pre-defined conditions.

2. The method of claim 1, wherein broadcasting further comprises:
   a. assigning the media code to the media broadcasted clip; and
   b. recording the media code.

3. The method of claim 1, wherein setting the media broadcasted clip as RBT further comprises:
   a. mapping the media code with a content id of RBT;
   b. storing the media broadcasted clip and the content id of RBT;
   c. updating a RBT profile of the user, the RBT profile comprising a user identifier and the content id of RBT; and
   d. sharing the RBT profile with communication service provider.

4. The method of claim 1, wherein the media broadcasted clip comprises at least one of a song, a speech, a joke, a news clip a serial clip, an advertisement and a recorded performance.

5. The method of claim 1, wherein the pre-defined conditions comprises checking subscription status and checking the user balance.

6. A method of setting a media broadcasted clip as ring back tone (RBT) for a user, the media broadcasted clip being broadcasted by a media house over a broadcasting network, the method comprising:
   a. receiving a request for setting the media broadcasted clip as RBT of the user, wherein the request comprises the media code;
   b. obtaining the media broadcasted clip and the media code from the media house; and
c. setting the media broadcasted clip as RBT of the user based on pre-defined conditions.

7. A system for setting a media broadcasted clip as ring back tone (RBT) for a user, the media broadcasted clip being broadcasted over a broadcasting network, the system comprising:
   a. a content management module for managing the media broadcasted clip;
   b. a reporting module for providing statistics; and
   c. a provisioning module for setting the media broadcasted clip as RBT of the user based on pre-defined conditions.
Start

Broadcasting a clip over a broadcasting network

Receiving a request for setting RBT

Setting media broadcasted clip as RBT

Stop

FIG. 2
FIG. 3
Start

Broadcasting a media clip over a broadcasting network along with a media code

Receiving a request for setting the media clip as RBT

Are the predefined conditions met

No → Prompting the user

Yes → Setting media broadcasted clip as RBT

Stop

FIG. 5