System and Method for Converting Loyalty Points to airtime credit for use of a cellular radio telephone network

Field of the Invention

The present invention relates to a system and method for converting loyalty points to airtime credit for use of a cellular radio telephone network.

Background Art

The following discussion of the background of the invention is intended to facilitate an understanding of the invention. However, it should be appreciated that the discussion is not an acknowledgement or admission that any of the material referred to was published, known or part of the common general knowledge of the person skilled in the art in any jurisdiction as at the priority date of the application.

Payment for the use of cellular radio telephone services can be effected in a number of ways. Traditional users of cellular radio telephone services have a service contract in which they are billed on a regular basis for the services that they use. However, the use of so-called pre-paid mobile services is becoming increasingly popular. In pre-paid mobile services, a customer pre-pays for the service by purchasing a certain amount of 'credit' and which is then credited towards the services used by the customer. Credit can be purchased in a number of ways – electronically, via phone and through the purchase of cards. When the customer has used up his credit then he must purchase additional credit.

While pre-paid services do help customers keep track of their expenditure, it can be inconvenient as the customer needs to keep track of the amount of credit that he has available, and regularly needs to purchase the credit and make sure that it is credited to his account. Sometimes the subscriber may find himself without credit, and without the facility to be able to easily 'top-up' his account.

The provision of so-called loyalty or reward points is a well-known concept. Examples of Loyalty/Reward Point Systems are airline frequent flyer miles, credit card Loyalty/Reward points, or any other similar reward structure where customer loyalty, employee Loyalty/Reward or frequent use of a product or service are

rewarded with non-financial “reward” credits which can be converted to other services such as gifts, discounts and upgrades to services.

The current manual system for redeeming points awarded varies, but typically requires that the customer calls or writes to a customer service call centre of the organization from which he wishes to redeem his points. The customer would then need to visit an item redemption centre and/or submit a signed statement stating which items he wished to acquire in exchange for a certain number of points. Once this information is submitted to the organization, the information is then manually verified to determine if the customer has sufficient points for the required item and that the item is in stock. If this is the case, then the required item is then dispatched to the customer in a suitable way – typically by post – or the customer has to call at a service desk with appropriate documentation.

Typically, the complete transaction can take some time to complete.

Disclosure of the Invention

Throughout the specification, unless the context requires otherwise, the word “comprise” or variations such as “comprises” or “comprising”, will be understood to imply the inclusion of a stated integer or group of integers but not the exclusion of any other integer or group of integers.

In accordance with a first aspect of the invention there is provided a system for converting accumulated points in a company loyalty programme to airtime credit on a cellular radio telephone network, the system including:

means for receiving a request from a network subscriber having a network account and holding accumulated loyalty points, the request including details of a company loyalty programme;

means for verifying that the subscriber holds a predetermined number of company loyalty points; and

means for crediting the customer network account with airtime credit in response to a verification that the subscriber holds the predetermined number of company loyalty points.

The request may include details of the number of accumulated loyalty points to be converted, and details of how often the loyalty points are to be converted.

The system may include means for registering the subscriber prior to converting points to airtime credit.

The system may include means for requesting details of a personal identification number, and only proceeding to convert the points to airtime credit upon receipt of the correct personal identification number. Preferably, the personal details are linked to the customer network account initially and are then not required subsequently.

The requests are preferably SMS messages.

In another embodiment of the invention, there is provided a system for converting accumulated points in a company loyalty programme to airtime credit on a cellular radio telephone network, the system including:

means for receiving a request from a network subscriber having a network account and holding accumulated loyalty points, the request including details of a company loyalty programme;

means for verifying that the subscriber holds a predetermined number of company loyalty points; and

means for crediting a second customer network account with airtime credit in response to verification that the subscriber holds the predetermined number of company loyalty points.

In another aspect of the invention, there is provided a method for converting accumulated points in a company loyalty programme to airtime credit on a cellular radio telephone network, the method including the steps of:

receiving a request from a network subscriber having a network account and holding accumulated loyalty points, the request including details of a company loyalty programme;

verifying that the subscriber holds a predetermined number of company loyalty points; and

crediting the customer network account with airtime credit in response to a verification that the subscriber holds the predetermined number of company loyalty points.

The request may include details of the number of accumulated loyalty points to be converted, and details of how often the loyalty points are to be converted.

The method may also include the step of registering the subscriber prior to converting points to airtime credit.

The method may also include the step of requesting details of a personal identification number, and only proceeding to convert the points to airtime credit upon receipt of the correct personal identification number.

The requests are preferably SMS messages.

This has the advantage that, unlike the prior art, the invention does not process a financial transaction, but rather only targets the accumulated points that a subscriber has accumulated. It allows a subscriber to use up their accumulated points instead of purchasing airtime credits, thus providing a very economical way of reloading airtime credits and maximizing the use of their accumulated points. The subscriber has the option of specifying a conversion interval for regular, automated conversions of his Reward/Loyalty points into airtime credits.

The invention allows subscribers to greatly simplify the process of redeeming their accumulated points and increasing the options available for convenient reloading of airtime credits. Also, the invention allows subscribers to redeem their points anytime, any day, even on weekends and after normal business hours, as the invention does not require any over-the-counter interaction with a staff from the participating organizations/companies.

Brief Description of the Drawings

The invention will now be described in the context of the following drawings, of which:

Figure 1 is a schematic representation of a system for converting loyalty points to airtime credit for use of a cellular radio telephone network.

Best Mode(s) for Carrying Out the Invention

Figure 1 illustrates schematically a cellular radio telephone network 100 including a central switching centre 101, a multiplicity of base stations 102 and many cellular radio telephones 103. The telephones 103 are able to communicate with other telephones of this – and other – networks via the base stations 102 and the central switching centre 101. The configuration and operation of cellular radio telephone networks is well known to persons skilled in the art, and, in so far as it is not relevant to the present invention, need not be described in any further detail herein.

Typically, the network 100 enables the sending and receiving of voice calls, SMS (short message service), MMS (multimedia messaging services), email, internet access and other available network services. Again, the operation and configuration of these services is also well known to persons skilled in the art.

The switching centre 101 includes a billing and account system 10, and a SMS centre (SMSC) 11. The billing and account system 10 operates to manage the billing and accounting services of the subscribers of the telecommunications carrier operating on the network 100, and the SMSC 11 operates to manage the SMS service provided on the network. The SMSC 11 includes a server (not shown) which operable to perform the functions required by the SMSC 11.

The network includes a service centre 104 which is operable to provide the service that is the subject of the present description – that is a system for converting loyalty points to airtime credit – that will be described in further detail below. The service centre 104 includes a server 15 and database 16, and is

operable to receive SMS messages from the SMSC 11, and is coupled to the billing and account system 10.

This service centre server 15 and database 16 are arranged to send and receive SMS messages required to implement the present invention.

The billing and account system 10 includes a database (not shown) holding required subscriber information and one or more servers (not shown) to implement the required services. Again, the use of such billing and account services is common in cellular radio telephone network services and need not be described in any further detail herein.

The SMSC 11 receives SMS messages sent by subscribers to the network 100, and processes them to be sent to the intended recipient – whether subscribers to this or other networks. Conversely, it processes SMS messages received from outside the network 100 to send them onto subscriber recipients. Again, the process for sending, processing and receiving SMS messages is well known.

In the system and method of the present invention, subscribers are able to convert accumulated loyalty points to airtime credit for use of network services.

In the embodiment described herein, the system is described with reference to a subscriber 13 who has a pre-paid payment plan for use of the network 100. The subscriber 13 is able to 'credit' his account with a chosen value of credit using any of the suitable known means – for example electronically as referred to above. The information regarding the subscriber's account and the amount of credit is stored in the billing and accounting system 10 data indicating that the subscriber 13 has credit that he can use to pay for network services. This is well known feature of cellular radio telephone networks.

The subscriber is also a member of a customer loyalty program – for example provided by a credit card company. The credit card company is also registered with the cellular radio telephone network 100.

The credit card company also has a one - or more - servers 200 which are able to interface with the switching centre 101. The method of interfacing with the

switching centre 101 may be of any suitable, known, means. The server 200 includes a database 201 which stores information regarding customers and their accumulation of loyalty points.

The company server 200 is also arranged to communicate with the service centre 104 and in particular the service centre server 15.

The system operates to convert accumulated loyalty points into airtime credit in the following manner:

All subscribers who wish to use this service must first register before they can use the service. This verifies that they are customers of the loyalty scheme provider such as the credit card company discussed above. This registration process links the ownership of the loyalty scheme account with a particular network subscriber account e.g. a mobile number. The customer will have been provided with the keyword which identifies the company with which the registration is linked to, an account identifier (such as a credit card number), as well as a security code (SERVICE_PIN). A security code is not necessary for the invention, but is preferred for extra security. In order to register, the subscriber needs to send a registration SMS to the cellular network provider and which will be processed by the SMSC 11. As is well known, the SMS includes sender and recipient identification details as well as a main body of predetermined maximum length. The format of the registration SMS is as follows:

KEYWORD <space> REG <space> ID_NO <space> INTERVAL <space> SERVICE_PIN

This registration SMS is sent to a special access number, which identifies the recipient of the SMS to be the service centre 104, and the server 15.

For example:

Let KEYWORD be UBVISA

Let ID_NO be 9999888877776666

Let SERVICE_PIN be 1234

Let the Special Access number be 2318

The completed registration SMS would then be:

UBVISA REG 9999888877776666 1234, and sent to: 2318

When the SMSC 11 receives the registration request SMS, it determines from the access number that it is intended for the dedicated service centre server 15. Upon receipt of the registration request SMS, the service centre server 15 parses the SMS to determine the information contained therein – as is well known in the art. The service centre server 15 determines that the SMS is a registration request and interfaces with the company server 200 which, in response generates a Mobile PIN (MPIN) for use in all future transactions. The company server 200 returns this MPIN to the service centre server 15, which then sends this MPIN to the subscriber in an SMS message. The service centre server 15 stores the MPIN in the database 16. As an alternative, the MPIN can be stored at the company server 200.

In the embodiment described herein, the registration process is carried before the subscriber can begin to use the service. The registration process is required to be done initially, and subsequent requests for top-up credit do not require the registration/ authentication process. However, as an alternative, an authentication process can be carried out before each loyalty point conversion request.

As an alternative to the use of a registration request using SMS, the company server 200 can be operable to provide a data file of pre-enrolled subscribers to the service centre server 15. This data is then stored on the database 16 and used to authenticate requests for loyalty point conversion.

Once registered, the subscriber can then proceed to convert accumulated points into airtime credits by sending a specifically formatted SMS to the special access number referred to above so as to be received by the service centre 104 and processed by the server 15 as discussed in more detail below. The ratio of points to airtime credit conversion will depend on the agreement the company and the network provider.

The SMS body for a request to convert loyalty points to airtime credit will have the following format, and will be sent to the same special access number referred to above. The format of the message will detail the keyword used in the initial registration step above, the number of points that the subscriber wishes to redeem (LOAD_AMT), his subscriber mobile number, and the time interval at which the subscriber wishes these points to be redeemed (INTERVAL). The option of setting an interval at which points can be redeemed is an optional feature. The format is as follows:

KEYWORD <space> REDEEM <space> LOAD_AMT <space> MOBILE NUMBER <space> INTERVAL

For example:

Let KEYWORD be UBVISA

Let LOAD_AMT be 500

Let MOBILE NUMBER be 09179871234

Let INTERVAL (optional, in days) be 14

Completed SMS body would then be:

UBVISA REDEEM 500 09179871234 14

Upon receipt of the SMS, the service centre server 15 will reply to the subscriber with a challenge SMS requesting that the subscriber reply to the message with their MPIN for identity verification. The service centre server 15 will also generate a transaction ID that will be stored in the database 16. Upon receipt of a response to the challenge SMS, the service centre server 15 will determine whether the MPIN received from the subscriber is valid. Should the MPIN be valid, the service centre server 15 will interface with the company server 200 to verify that the subscriber has enough loyalty points to complete the transaction. Upon receipt of a request from the service centre server 15, the company server 200 will check the subscriber account details in the database and will send a confirmatory message to the service centre server 15 that there are enough loyalty points in the

subscriber's account. The company server 200 will amend the record in the database 201 to deduct the requisite number of loyalty points from the subscribers loyalty account. In response to this verification being received by the service centre server 15, then the service centre server 15 will, in real-time, credit the subscriber account with the amount requested by interfacing with the billing and accounting system 10. The service centre server 15 will then send a confirmation SMS – via the SMSC 11 - with a trace number to the subscriber verifying the transaction. This trace number can be used for any future investigations regarding the transaction.

A confirmation SMS would be as follows:

You have just received <currency><amount> worth of airtime credits. Trace number: 99999

Should the transaction fail because either the MPIN is invalid or the subscriber does not have enough loyalty points to complete the transaction, an error SMS will be sent to the subscriber instead.

The error SMS would be of the form:

Sorry, this request cannot be processed. Please contact the Customer Service Department at 999-9999. Trace number: 99999

Should the customer opt for a scheduled, automated conversion of loyalty points into airtime credits, then the SMSC server 15 will still go through the process of verifying that the subscriber has enough loyalty points to perform the transaction at every scheduled conversion request and send the appropriate success/error SMS messages.

The subscriber can also target other mobile phone numbers to reload them with airtime credits from his loyalty points. In order to do this, he sends a specifically formatted SMS to the special access number but specifies the other cellular phone number as the target of the transaction (TARGET MOBILE NUMBER). In all other respects the sending of this request is similar to the steps for this process described above. The format of the SMS is:

KEYWORD <space> REDEEM <space> LOAD_AMT <space> TARGET MOBILE NUMBER <space> INTERVAL

Example:

Let KEYWORD be UBVISA

Let LOAD_AMT be 500

Let TARGET MOBILE NUMBER be 09175554444

Let INTERVAL (optional, in days) be 14

The completed SMS body would then be:

UBVISA REDEEM 500 09175554444

Upon approval of the transaction using the same procedure as detailed above, the sender of the request will then receive a confirmation message from the SMSC server 15. Sample confirmation message:

You have just sent <currency><amount> worth of airtime credits to <target mobile number>. Trace number: 99999

The SMSC 11 will also send a confirmation SMS to the recipient of the credits. A sample confirmation message is:

You have just received <currency><amount> worth of airtime credits from <target mobile number>. Trace number: 99999

Should the transaction be denied, the subscriber will receive an error SMS instead. An error SMS would read:

Sorry, this request cannot be processed. Please contact the Customer Service Department at 999-9999. Trace number: 99999

Should the subscriber opt for a scheduled, automated conversion of loyalty points into airtime credits, the SMSC 11 will still go through the process of verifying that

the subscriber has enough loyalty points to perform the transaction at every scheduled conversion request and send the appropriate success/error SMS messages as detailed above.

It should be appreciated that the scope of this invention is not confined to the particular embodiment described above. For example, it can be used for both pre-paid and post-paid accounts. The invention can be used with any loyalty/ reward scheme that can interface with a cellular radio telephone network. The format of the SMS messages can be of any suitable type and contain any appropriate wording. Other forms of communication can be used – such as MMS, WAP CDMA etc.

As an alternative to real-time requests for debit of loyalty points, the company server 200 can be operable to accumulate instructions for loyalty points conversion and provide them in a file to the service centre server 15 in batch mode.