Abstract:
The invention provides a method of negotiating a contract for a consumption type service between a user equipment (UE) and a provider of the service, the method including the service provider operating a computer to formulate at least one offer for a service contract based on a set of usage requirements relating to the UE, the set of usage requirements including, without limitation, any one or more of duration, price, services offered, quality of service, geographical location, total volume of services, time of consumption, location of consumption, content type or call destination; transmitting a data carrying signal to the UE which includes data representing the offer, receiving from the UE a data carrying signal representing an acceptance or rejection of the offer, and activation of the service contract between the UE and the service provider upon acceptance of the offer by the UE.

The invention provides a method of negotiating a contract for a consumption type service between a user equipment (UE) and a provider of the service, the method including the service provider operating a computer to formulate at least one offer for a service contract based on a set of usage requirements relating to the UE, the set of usage requirements including, without limitation, any one or more of duration, price, services offered, quality of service, geographical location, total volume of services, time of consumption, location of consumption, content type or call destination; transmitting a data carrying signal to the UE which includes data representing the offer, receiving from the UE a data carrying signal representing an acceptance or rejection of the offer, and activation of the service contract between the UE and the service provider upon acceptance of the offer by the UE.

Title: METHOD OF NEGOTIATING A USER EQUIPMENT SERVICE CONTRACT
METHOD OF NEGOTIATING A USER EQUIPMENT SERVICE CONTRACT

FIELD OF THE INVENTION

This invention relates to a method of negotiating a contract for consumption services, such as incremental usage and multimedia content consumption type services, particularly a data communication service.

BACKGROUND TO THE INVENTION

Service providers in respect of incremental usage or consumption type services, such as data communication services, telephony, multi-media content consumption, and electricity supply services, typically provide their customers with a limited number of fixed contracts to elect from. These contracts are typically entered into for a fixed period, such as two years, and include a fixed service definition for the contract price. The contract is typically billed on a monthly basis and the cost of the contract is thus expressed as a monthly figure.

Any usage of services that exceed the maximum allowed in terms of the contract is usually billed at a much higher than "normal" rate (sometimes called the "out-of-bundle" rate). In some instances usage of the service below the maximum allowed is forfeited, i.e. a use-it-or-lose-it approach. In some instances unused services are carried over to a following period, but these are normally limited in some manner or form, and at some point also subject to a use-it-or-lose-it approach. This is commonly referred to "breakage".

These types of contracts are not negotiated in the normal sense - the service provider makes available to the user a list of available options and the user elects one from it. No real negotiations take place and with the offerings of the various service providers not being much different, the user does not really have much choice.

A subscription to any of these contracts is typically manual and requires at least some administration from the user. Typically contracts have to be completed before the contract is made effective with respect of the user's equipment. The user himself has to select a particular contract, and very often the choice of contract is decided not so much by the services provided in terms of the contract but by the extras added to the contract to sweeten the deal, for example a free new mobile telephone. In most instances users are enticed into
an "upgrade" or "extension" by the lure of a new mobile telephone whilst the user's existing mobile telephone is still perfectly functional. The cost of the new mobile telephone is of course, at least to some extent, factored into the contract cost. This adds to the overall cost of the service. To not upgrade or extend a contract is also not a sensible course of action, since the contract price remains the same when a user goes over an extension date.

In this specification the phrase "user equipment" or "UE" refers to a hardware device that a user uses to exploit the services offered by a service provider, for example a mobile telephone or a communication enabled laptop or tablet, or machine-to-machine ("M2M") type devices which may be fitted to a wide range of domestic, industrial, or commercial appliances for purposes of sensing and control.

This patent application is filed contemporaneously with the applicant's separate patent applications "INCREMENTAL USAGE SERVICE CONTRACT ENACTMENT AND ENFORCEMENT" under application number ZA201 2/03276 and "BILLING METHOD AND SYSTEM FOR INCREMENTAL CONSUMPTION SERVICE" under application number ZA201 2/03274, all of the same priority date, and the contents of these applications are incorporated into this application by reference.

OBJECT OF THE INVENTION

It is an object of the invention to provide a method of contract negotiation for a consumption type service which at least partly overcomes the abovementioned problem.

SUMMARY OF THE INVENTION

In accordance with this invention a method is provided for negotiating a contract for consumption type service between a UE and a provider of the service, with the service provider operating a computer to formulate at least one offer for a service contract based on a set of usage requirements relating to the UE, the set of usage requirements including, without limitation, any one or more of duration, time of day, day of week, price, services offered, quality of service, geographical location, content type or call destination, and total volume of services, transmitting a data carrying signal to the UE which includes data representing the offer, receiving from the UE a data carrying signal representing an acceptance or rejection of the offer, and activation of the service contract between the UE and the service provider upon acceptance of the offer by the UE.
There is further provided for the method to include the step of the service provider first receiving from the UE a data carrying signal representing a request for service contract offers, and including the set of usage requirements.

The invention further provides for at least part of the set of usage requirements to be stored on storage means associated with the service provider and accessible by the computer to either form the set of usage requirements, alternatively to supplement the set if usage requirements provided by the UE.

There is still further provided for the UE to be operated to compare an offer against the set of usage requirements and to select the offer if it complies to a predetermined extent with the set of usage requirements, and to reject it if it does not comply to such predetermined extent with the set of usage requirements, alternatively for the UE to be operated to compare a plurality of offers against the set of usage requirements and to select from the plurality of offers a single offer if it complies to a predetermined extent with the set of usage requirements, and to reject all of the offers if none complies to such predetermined extent with the set of usage requirements.

There is also provided for the method to include the transmission of the data carrying signal relating to the offer and receipt of the data carrying signal relating to acceptance or rejection of the offer is transmitted via an intermediary service provider, for transmission to the UE and service provider respectively.

A further feature of the invention provides for a plurality of service providers to transmit to the intermediary service provider data carrying signal relating to a plurality of offers for service contracts for the UE, for the intermediary service provider to receive from the UE data carrying signals relating to acceptance or rejection for each offer.

There is further provided for the method to include providing the UE with no more than a predetermined number of offers, and optionally with an option to purchase an additional number of offers, and preferably to include providing the UE with offers which are open for acceptance within a predetermined limited time period.

There is still further provided for the method to include the transmission from the UE of a data carrying signal representing acceptance of a plurality of offers, in which the service
contracts relating to such offers may be valid at the same time and for the same or differing services, and optionally for the plurality of offers to be from a plurality of service providers.

There is also provided for an offer to relate to a service with a future starting date, and for the offer to be for a service contract with the intermediary service provider, and for the data carrying signal which includes data representing an offer for sale or part or whole of a service contract between the UE and a service provider or intermediary service provider to be received by a service provider or an intermediary service provider UE.

According to a still further feature of the invention there is provided for the method to include the provision by a service provider or intermediary service provider of a virtual trading platform which receives from the UE the data carrying signal relating to the offer and from purchasing service providers or purchasing intermediary service providers data carrying signals representing acceptance of the offer.

There is further provided for the method to include receiving from a UE a data carrying signal which includes data representing an acceptance from the UE of an offer for a service contract listed on the trading platform.

The invention further provides for the method to include bulk buying of service contracts from service providers by UE’s or intermediary service providers, and trading of components of such bulk service contracts to further UE’s.

There is also provided for the method to include providing the UE with an option to transmit to a service provider or an intermediary service provider a set of usage requirements, alternatively for the method to include requiring the UE to provide at least some of such usage data to the service provider or intermediary service provider before an offer is formulated.

There is further provided for the method to include the service provider receiving from the UE a data carrying signal which includes data representing a request from the UE to the service provider for the service provider to offer to it a service contract on specific terms within a predeterminable period of time, alternatively the service provider or an intermediary service provider predefining contracts or defining contracts upon request by a UE, whether on fixed terms or on hybrid terms which include fixed and variable components.
According to a still further of the invention there is provided for the method to include the operation of the UE to execute a contract negotiator process associated with it to collect consumption related data of the UE and to detect the activation of a data consuming connection made by or to the UE, to determine whether the UE has an active data contract in respect of a service provider and to compare the data consumption requirements of the current data connection with such active service contract, and in the event that the UE has no active service contract or the active service contract is determined to not be adequate for the requirements of the current data connection in comparison with a set of consumption rules stored on storage means associated with the UE and accessible by the contract negotiator process, to transmit to at least one service provider a data carrying signal which includes data representing a request from the UE to the service provider for the service provider to offer to it, within a predeterminable period of time, a service contract on specific terms which satisfy the requirements of the current data connection.

There is also provided for the consumption related data to include the volume of data and the activity of the UE over a predeterminable period, preferably per hour, and preferably for the comparison of the data consumption requirements of the current data connection with an active service contract to include comparing historical data relating to the current data connection with the data connection provisions of the active service contract.

There is further provided for the method to include, in the event that an active data contract is set to expire, the contract negotiator process transmitting a data carrying signal which includes data representing a request from the UE to a service provider to either renew or obtain a new service contract.

The invention also provides for the method to include contract negotiator process presenting the user of the UE with a request for a selection of a contract if the contract negotiator process is unable to select between contracts presented to it, and for the user to make a selection preferably by means of input on a display screen or keypad associated with the UE.

A still further feature of the invention provides for a method of negotiating a contract for a consumption type service between a UE and a provider of the service in which the service provider receives from the UE a data carrying signal which includes data representing an offer to the service provider to contract with the UE on specific terms and within a predeterminable period of time, operating a computer to determine acceptance or rejection of the offer, transmission of a data carrying signal representing acceptance or rejection of the
offer by the UE, and activation of the service contract between the UE and the service provider upon acceptance of the offer by the service provider

These and other features of the invention are described in more detail below.

5 BRIEF DESCRIPTION OF THE DRAWINGS

A preferred embodiment of the invention is described below with reference to the accompanying drawings which display a deployment of the method of the invention in respect of a mobile communication device accessing data services in the form of a Facebook application and negotiating a fresh contract based on this.

DETAILED DESCRIPTION OF THE INVENTION

An incremental usage service is a service where a service provider provides a service to a consumer and the consumer is allowed to use the service on an on-going basis in small portions.

A specific example of such a service is the mobile communication environment, and a preferred embodiment of the invention is the deployment of the invention in this environment.

In this environment a consumer will be registered with more than one service provider, by way of a SIM (Subscriber Information Module) card on his UE, which in this embodiment is a mobile telephone. The SIM card may be a physical SIM card that is manually inserted into a card reader slot in the UE, or it could be a "soft SIM", meaning it is integrated into the UE. The SIM data and unique number of the UE device (the IMEI number) are used to uniquely identify a UE. In the event that the UE contacts the service provider by means of an alternative data communication channel, such as a Wi-Fi channel, the UE may still be identified by means of its IMEI number, and preferably account details of the consumer and/or the UE at the service provider. It could also use a normal account logon system requiring a username and password.

The UE is enabled by means of software operating on it, in the form of any one of hardware, firmware or operating system level software, to collate relevant usage data and present it automatically to the service providers. The UE connects to one or more service providers and sends the terms (bandwidth, volume, duration, start date, etc..) of a contract it is
seeking from them. Further the UE may opt to, or may be forced to, send certain historical usage data to optimise the selection.

The service providers respond based on the request from the UE with one or more offers/contracts they are willing to enter into. These steps may be repeated any number of times. It should be noted that not all terms will be as per the request. This is thus not a pure reject/accept version of "negotiating" as in the current methods of how contracts are presented to customers in a one-sided manner. However, this method can be deployed in a variation thereof where a customer agrees upfront to receive and accept contracts for his UE from a specific service provider or service providers, based on relevant usage of his UE. In such a case, the service providers will dynamically alter their contracts to suit current conditions and activate such contracts in respect of the UE, within the guidelines pre-agreed with the customer. This presents the UE with the option to receive the benefit of reductions in charges when such become applicable, from which he may otherwise be excluded if he is locked into a long term contract.

The UE evaluates all the contract responses received from the various service providers and decides on one or more suitable contracts for current and future needs.

The acceptance and rejection of the contracts is sent back to the various service providers.

The UE starts using the services from the service provider which is drawn against the relevant contracts.

In another aspect of the implementation the service provider could choose to initiate the process by pushing an offer towards the customer.

A specific application of the invention, which explains the above steps of the method in more detail is illustrated in Figure 1. It involves a user of a UE in the form of a mobile telephone with a data connection, accessing a Facebook application which requires the data connection to download and upload data.

1. An application, called Negotiator Service (1) runs continuously in the background on the UE (2) and gathers measurements about the volume of data sent and duration of activity per hour of week by the various applications running on the UE (2).

2. The user (3) starts up (4) an application, in this example Facebook (5).
3. The Negotiator Service (1) receives a signal from the Operating System (6) signalling that Facebook (5) wants to start sending data.

4. The Negotiator Service (1) retrieves the past historical measurement for Facebook (5) and other relevant services.

5. This historical data together with other user preferences are sent to a Negotiator Server (7) operated on a remote server (8) to request terms and conditions for the service from a Mobile Operator (16).

6. The Negotiator Server (7) then matches this request against a set of predefined service contracts offered by the operator (16). In this example two predefined contracts are selected, namely Facebook Data (9) and a package with 40 megabyte worth of data being valid for 24 hours (10).

7. These predefined service contracts are thereafter customized on the remote server based on the information presented by the Negotiator Service (1) on the UE (2) as in step 5 above and taking business rules (15) as defined on the Negotiator Server (7) into consideration. In this example the Facebook duration is set to be 48 hours based on the data sent up in the request during step 5 above and gathered in step 1 above.

8. These two contracts are then returned to the UE (2) for evaluation by the Negotiator Service (1).

9. The Negotiator Service (1) on the UE (2) evaluates these contracts (9, 10) based on a predefined set of rules (11) set either by the user (3) or some third party, and which is stored on the UE (2).

10. In this example the criteria as defined in step 9 above on the UE (2) is not enough to make a final decision and the option (12) is presented to the user (3).

11. The user (3), for example, selects (13) the Facebook contract (9).

12. The UE (2) then transmits a confirmation (14) to the Negotiator Server (7) indicating which contracts were accepted and rejected.

13. The user continues to use Facebook (5) whereupon the data generated by the application is drawn from the most applicable contract being active on the UE (2). In this example it is the Facebook contract (9) as selected in step 11 above.

14. After 47 hours the UE (2) detects that the contract in place will expire within an hour and the process as described above is repeated.

In addition to the above, it should be noted that:

• An intermediary exists to act as an aggregation for the service providers and should be seen in this context as another service provider;

• A service provider can buy bulk from other service providers in advance and on-sell to the UE (commodity trading);
• Any interaction from the UE should be seen as both the device and a person driving it;
• There could be a fixed fee to allow the UE to negotiate for a limited number of times during a certain period. This fee could be zero rated but based on an agreed number of acceptances;
• UE could agree to the number of offerings to be pushed; and
• The method also includes the ability to negotiate an extension/renewal prior to expire of the contract. This could be initiated from the UE or the service provider.
• It is possible to include a ranking capability to step 12, which will allow a Mobile Operator to determine how far apart the different contracts are.
• In respect of step 14 it is possible to include an option for the user to on-sell any remaining portion of the contract.

The transmission of the contract requirements from the UE may also be set to be triggered by the user operating the UE. The software operating on the UE that manages the method could alert the user by means of a notice that it requires authorisation to transmit contract requirements to the service providers, and upon the user inputting an authorisation code or accepting the request, the software may initiate the transmission.

The user may also be provided with the option to make selections in terms of preferences that override other data collected by the UE, for example the option to require a specific quality of service at a specific time of day, or at a specific location, or for a specific application, or any combination thereof. Another aspect allows for third parties to be provided with permission and access to make such elections in respect of the UE, including the third party selecting one or more contracts on behalf of the UE. Third parties may also be allowed to provide guidelines for an application in respect of when to select a contract.

It will be appreciated that the above embodiments are given by way of example only and are not intended to limit the scope of the invention.
CLAIMS

1. A method of negotiating a contract for a consumption type service between a UE and a provider of the service, the method including the service provider operating a computer to formulate at least one offer for a service contract based on a set of usage requirements relating to the UE, the set of usage requirements including, without limitation, any one or more of duration, price, services offered, quality of service, geographical location, total volume of services, time of consumption, location of consumption, content type or call destination; transmitting a data carrying signal to the UE which includes data representing the offer, receiving from the UE a data carrying signal representing an acceptance or rejection of the offer, and activation of the service contract between the UE and the service provider upon acceptance of the offer by the UE.

2. A method as claimed in claim 1 which includes the step of the service provider first receiving from the UE a data carrying signal representing a request for service contract offers, and including the set of usage requirements.

3. A method as claimed in claim 1 or 2 in which at least part of the set of usage requirements is stored on storage means associated with the service provider and accessible by the computer to either form the set of usage requirements, alternatively to supplement the set if usage requirements provided by the UE.

4. A method as claimed in any one of claims 1 to 3 in which the UE is operated to compare an offer against the set of usage requirements and to select the offer if it complies to a predetermined extent with the set of usage requirements, and to reject it if it does not comply to such predetermined extent with the set of usage requirements.

5. A method as claimed in any one of claims 1 to 3 in which the UE is operated to compare a plurality of offers against the set of usage requirements and to select from the plurality of offers a single offer if it complies to a predetermined extent with the set of usage requirements, and to reject all of the offers if none complies to such predetermined extent with the set of usage requirements.

6. A method as claimed in any one of claims 1 to 6 in which the transmission of the data carrying signal relating to the offer and receipt of the data carrying signal relating
to acceptance or rejection of the offer is transmitted via an intermediary service provider, for transmission to the UE and service provider respectively.

7. A method as claimed in claim 6 in which a plurality of service providers transmit to the intermediary service provider data carrying signal relating to a plurality of offers for service contracts for the UE, and the intermediary service provider receives from the UE data carrying signals relating to acceptance or rejection for each offer.

8. A method as claimed in any one of claims 5 to 7 in which the UE is provided with no more than a predetermined number of offers.

9. A method as claimed in claim 8 in which the UE is provided with an option to purchase an additional number of offers.

10. A method as claimed in any one of claims 5 to 9 in which the UE is provided with offers which are open for acceptance within a predetermined limited time period.

11. A method as claimed in any one of the preceding claims in which the UE transmits a data carrying signal representing acceptance of a plurality of offers, in which the service contracts relating to such offers may be valid at the same time and for the same or differing services.

12. A method as claimed in claim 11 in which the plurality of offers are from a plurality of service providers.

13. A method as claimed in any one of the preceding claims in which the offer relates to a service with a future starting date.

14. A method as claimed in any one of claims 6 to 13 in which the offer is for service contract with the intermediary service provider.

15. A method as claimed in any one of the preceding claims which includes a service provider or an intermediary service provider receiving from the UE a data carrying signal which includes data representing an offer for sale or part or whole of a service contract between the UE and a service provider or intermediary service provider, and a purchasing service provider or purchasing intermediary service provider, as the case may be, transmitting to the UE a data carrying signal which includes data representing an acceptance of the offer from the UE, upon which the service contract
with the UE is transferred from the UE to the purchasing service provider or purchasing intermediary service provider.

16. A method as claimed in claim 15 which includes a service provider or intermediary service provider providing a virtual trading platform which receives from the UE the data carrying signal relating to the offer and from purchasing service providers or purchasing intermediary service providers data carrying signals representing acceptance of the offer.

17. A method as claimed in claim 16 in which the trading platform also receives from a UE a data carrying signal which includes data representing an acceptance from the UE of an offer for a service contract listed on the trading platform.

18. A method as claimed in claim 16 or 17 which includes bulk buying of service contracts from service providers by UE's or intermediary service providers, and trading of components of such bulk service contracts to further UE's.

19. A method as claimed in any one of the preceding claims which includes providing the UE with an option to transmit to a service provider or an intermediary service provider a set of usage requirements, alternatively for the method to include requiring the UE to provide at least some of such usage data to the service provider or intermediary service provider before an offer is formulated.

20. A method as claimed in any one of the preceding claims in which the service provider receives from the UE a data carrying signal which includes data representing a request from the UE to the service provider for the service provider to offer to it a service contract on specific terms within a predeterminable period of time.

21. A method as claimed in any one of the preceding claims which includes the service provider or an intermediary service provider predefining contracts or defining contracts upon request by a UE, whether on fixed terms or on hybrid terms which include fixed and variable components.

22. A method as claimed in claim 20 or 21 which includes the operation of the UE to execute a contract negotiator process associated with it to collect consumption related data of the UE and to detect the activation of a data consuming connection made by or to the UE, to determine whether the UE has an active data contract in respect of a service provider and to compare the data consumption requirements of
the current data connection with such active service contract, and in the event that the UE has no active service contract or the active service contract is determined to not be adequate for the requirements of the current data connection in comparison with a set of consumption rules stored on storage means associated with the UE and accessible by the contract negotiator process, to transmit to at least one service provider a data carrying signal which includes data representing a request from the UE to the service provider for the service provider to offer to it, within a predeterminable period of time, a service contract on specific terms which satisfy the requirements of the current data connection.

23. A method as claimed in claim 22 in which the consumption related data includes the volume of data and the activity of the UE over a predeterminable period, preferably per hour.

24. A method as claimed in claim 22 or 23 in which the comparison of the data consumption requirements of the current data connection with an active service contract includes comparing historical data relating to the current data connection with the data connection provisions of the active service contract.

25. A method as claimed in any one of claims 22 to 24 in which, in the event that an active data contract is set to expire, the contract negotiator process transmits a data carrying signal which includes data representing a request from the UE to a service provider to either renew or obtain a new service contract.

26. A method as claimed in any one of claims 22 to 25 in which the contract negotiator process presents the user of the UE with a request for a selection of a contract if the contract negotiator process is unable to select between contracts presented to it, and for the user to make a selection preferably by means of input on a display screen or keypad associated with the UE.

27. A method of negotiating a contract for a consumption type service between a UE and a provider of the service in which the service provider receives from the UE a data carrying signal which includes data representing an offer to the service provider to contract with the UE on specific terms and within a predeterminable period of time, operating a computer to determine acceptance or rejection of the offer, transmission of a data carrying signal representing acceptance or rejection of the offer by the UE, and activation of the service contract between the UE and the service provider upon acceptance of the offer by the service provider.