USSD Center

Benefits

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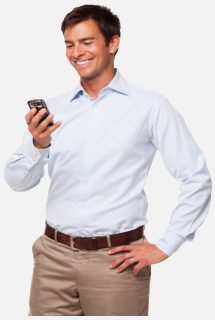
For all players in the mobile and the mobile interaction industry USSD-based services can be used to give them an edge compared to the competition and this way support their business. These are examples of the benefits of the Netfors USSD Centre

- Mobile operators and service providers can use it to enhance the functionality for prepaid subscribers.
- Integrators and aggregators can use it to build a USSD-service that covers all mobile operators in a country.
- Content and application providers can develp and rum services such as banking, quiz or chat.

Unstructured Supplementary Service Data (USSD) is a protocol used by GSM mobile phones to communicate with the service provider's computers. The standard can be used to create value added services for operators, service providers, and enablers in the mobile interaction industry.

USSD is a mature technology that is integrated in all mobile phones. So the technology is stable and it gives the following advantages

- It is possible to push messages to the mobile phone
- The communication with the mobile phone is fast and real time
- It is possible to communicate with all mobile phones no matter their age and brand
- It can be used worldwide

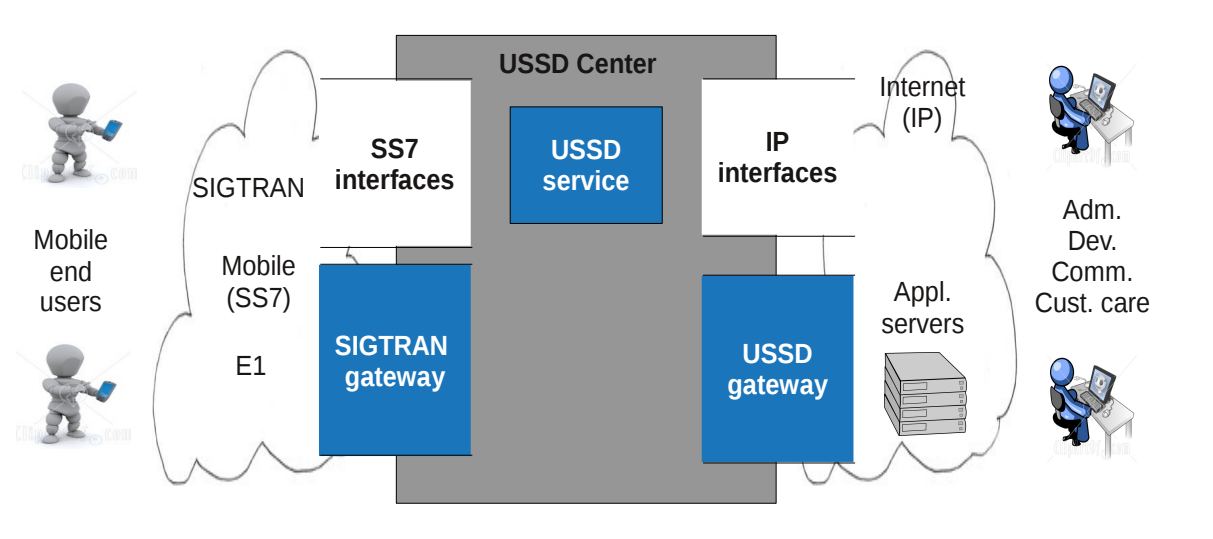


Architecture

The Netfors USSD centre enables the development and management of USSD-based applications that can enhance end user loyalty and revenue streams. Therefore integrators and aggregators, content and application providers, operators and service providers in the mobile industry can use the Netfors USSD centre to enhance their product offering.

As it appears below the Netfors USSC Centre consists of the following elements

- USSC Service that manages the exchange of USSD data between the mobile phones and the application servers.
- USSD Gateway that provides the connection to the IP-based network which enables connection over the internet. The gateway contains application modules that enable development of applications based on an API or Soap interface
- Web manager that enables surveillance and support of the system



The USSD service connects to the mobile networks via a SIGTRAN or an E1 gateway that can be provided by Netfors as well. The developers face an API or SOAP interface.

The USSD Gateway connects to the administrators and supporters via a web interface. Developers that build applications based on the application modules face a Soap or an API interface. When applications have been developed on top of the application modules customer care and campaign managers are able to work on a web interface.

Application modules

The application modules serve as an interface between the USSD Center and the applications using the USSD functionality. The specific application modules are APIs that address the specific issue. Customised modules can be made on request.

Mobile banking

User enter the banking service dialling *147*account number#. NI USSD returns the Banking menu to the mobile phone. The user types the number for the service wanted and presses the key below Answer. The application returns the menu for the choice of service made, and the interaction between bank ap-

plication and user continues until transactions is performed and confirmed or the requested information has been provided.Directory (number) service.

Mobile money transfer

The customer sends a USSD sort code to start the session. During this USSD session a premim charge can be applied to the phone bill and the customer can decide to which mobile number the amout should be transferred. The money is transferred via backgound applications.

Prepaid top up

The customer sends a short code to start the prepaid top up session. Depending on the background application the customer can choose amounts and/or get a receipt of the top up. The money is transferred via background applications.

Call back service

The customer is abroad and wants to call a number outside the visited network. The customer sends a USSD code that triggers a call back from the home network. From here the customer can call any number as if it was from the home network.

The customer saves money and the network operator captures new revenue streams.

Push services (news, weather, sports)

Initially the customer sends a USSD message to subscribe to an entertainment of information service. Then the wanted content is flashed to the mobile screen on the agreed terms.

This can e.g. be used for updates on news, weather, films, sports, the currency and stock market

Dialogue services (quiz, survey, Q&A)

Mobile subscriber can answer a quiz, do a survey, receive questions and send using text messaging. The service can be initiated either from the mobile subscriber or from the application server. The application posts a question and the user answer the question. Q&A interaction continues until all the questions are answered.

Polling Service

The mobile subscriber can make a vote and receive polling result using USSD text messaging. To make a vote, subscriber types her/his opinion/choice selection on the mobile e.g. *159*<Poll item ID># and push the <send> button. The subscriber receives a message with the polling result.

Directory service

The directory service requires a back-end system that has the customer/number databases. These 2 types of services are available: Reverse directory service, a simple request reply session where user dials *118*number#, and the system replies with the person having this number. Normal directory service. User dials *118#, and the system initiates a dialogue with the user, starting asking the name of the user or company to search for, and asking for additional information (city, street etc.) until few candidates are found and presented by to the user. The options to (send V-card to mobile) or (Establish call) is provided. The user selects the choice and pushes the Answer button. The USSD application makes actions respective the choice made.

Chat service

User (A-number) dials *119*number# and the system uses NI USSD to contact the phone having the number (B-number) and asking for whether the user want to start chat with the user having A-number (possible with name found using a directory lookup). Any input entered by B-number is sent to A-number and vice versa.

RSS feeds via USSD

The mobile subscriber activates the RSS feeds by dialling e.g. *369#. The system uses NI USSD to send a menu to the mobile phone so that the subscriber can decide which news to subscribe to. The customer types the number of the news wanted and pressed the answer key. Confirmation of news services activated is sent to the mobile phone.

When the news provider publishes news feeds the system uses NI USSD to send the news to the mobile subscriber.

Netfors

Netfors develops and markets high performance products that mediate content and communication between the mobile end users and the telecom operators, service providers, integrators and aggregators, as well as content and application providers in the telecom and mobile interaction industry. This way we help them improve their value proposition towards their customers.

We have more than 20 years of experience from the telecom industry and a special expertise in SS7, IP networks and Asterisk.

Being a small company we are flexible able to react fact on customer demands. We focus on cost, price and robust solutions with high performance.

Netfors has an installed SMSC base that is currently delivering more than 2,000 mio. sms per month via customers in Europe, Asia, the Middle East, USA and South America.

Please do not hesitate to contact us for further information about how our USSD Center can help you increase your efficiency and your revenue stream.

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