Unified Mobile Messaging and Other VAS System

With SMSC, USSD, MMS, VMS, Missed Call Alert, RingBackTone, CallBack

Thanks to the Halys integrated architecture, MNOs can deploy a single system for all their Messaging Value Added Services and all their depending networks (MNO and MVNOs multi-tenant system) with an optimization of their Capex (shared hardware) and Opex (Unified Management).
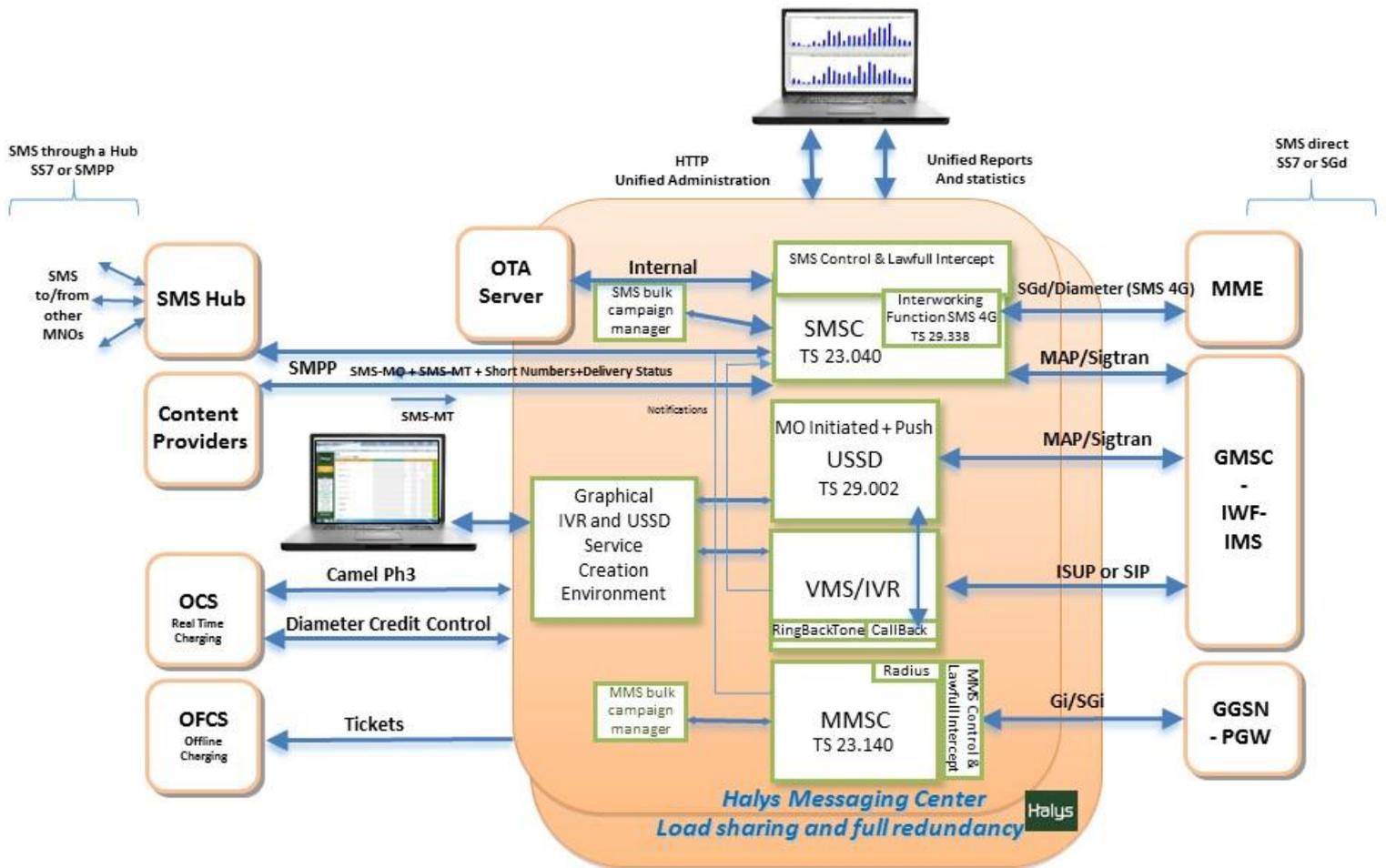

Figure 1: Unified messaging services

1- SMS (P2P/A2P/International Hub/Firewall-SMS Control) 3G and 4G/Diameter

The Halys SMS center provides a comprehensive service for messages between Persons (P2P), with Applications (A2P), to/from Partners or Peers (SMS hub), with full control and protection (Firewall-SMS Control).

It benefits from the Halys experience in the inter-MNOs SMS communication (refer to our SMS hub product) in providing a full centralized control of the route used by the short messages. It can connect using sm_submit/SMPP (or SS7) to SMS Hubs to extend the SMS sending services to reach additional MNOs.
Its full TS 23.040 compliance includes the support of concatenated long binary messages and SMS commands from the mobile.

Halys Unified Mobile Messaging and Other VAS System   VAS

The SMS First Attempt router function eases the handling of growing numbers of subscribers (no need to segment between multiple SMSCs).

The SMS Firewall and Control function with anti-spoofing and anti-spamming protects the communications with "Home Routing". All SMS sent and received go through the SMSC, can be logged (lawfull intercept) and the complete communication with the subscribers can be actively managed.

The A2P and P2A functions over SMPP and SS7/MAP allow a flexible technical and business management of those higher value flows.

The integrated SMS campaign manager allows an easy setup and a detailed management of the MNO or business partners marketing communication campaigns.

The SMSC can directly send/receive SMSs from MMEs using the interface SGd/Diameter.

The SMSC is used by the OTA server to send/receive messages for the SIM configuration.

2- USSD (Push/Pull interactive services/Service creation environment)

The Halys USSD server allows the easy deployment of pervasive interactive services and brings the benefit to allow roaming of prepaid subscribers in all partner networks.

The Halys USSD gateway combines MO originated dialogs with Network Originated Push dialogs. It allows easy and smooth interactions with the subscribers (no timeouts), the sending of Push USSD alert messages and an optimal usage of the network resources (HLR long timers, paralleling of sessions).

For an easy interconnection with third party application servers, the SMPP Halys USSD augmented interface is used, based on the well-known standard SMPP communication protocol.

The integrated Service Creation Environment allows the definition and the deployment of new USSD services. His graphical user-friendly interface permits its use by non-IT skilled staff.

USSD Call Back and SMS by USSD are additional options of particular interest for prepaid roaming of subscribers at partners that do not have any Camel agreements. The USSD server interfaces with the VMS/IVR to implement the two legs of the callback. With Halys STK in the SIM card the callback can be set to be transparent while using the handset's address book.

3- Voice Services (VMS, IVR, Missed Call Alert, CallBack, RingBackTone)

The Halys Unified Voice Server brings to the subscribers Voice MailBoxes (VMS) for the deposit of voice messages by the calling parties, allows customized Interactive Voice Responders (IVR), permits the notification of the subscribers (MCA) and add subscribers personalized Ringing Tones (RBT).

The Halys System associates the handling of the vocal interactions with the subscribers as well as the associated notifications by SMS to called and calling parties.

- Voice Messaging Service:

The service can be fully customized to the actual marketing needs of the MNOs by the use of the Halys Service Creation function. The system provides the facility to manage the start time of the charging of the calls and its prepayment. The integrated Email gateway allows to retrieve messages from the internet.

- Missed Call Alerts

Notifications are fully flexible with management of the events reported (includes MCA notification capability to the called party), origin (short code or call parties), content (groupings), charging (prepayment) and time of day restrictions (no notification at night).

- Call Back

Instead of initiating calls from the visited MSC, Call Back calls are initiated from the Voice server that allows to optimize the costs (no partner IOT) and user experience.

- Ring Back Tone

The service allows the customer to browse into a portfolio of media, to define his own preferred selection or to record his own tone and to affect the different tones for the reception of some or all their calling parties. Time based subscriptions to the service and to the different medias are provided including prepayment

4- MMS (P2P/A2P/International Hub/Firewall-MMS Control)

The Halys MMS service allows the sending of rich multi-media messages from/to other Persons or Applications on the GSM network or email clients. The Halys MMS service benefits of the close integration with the Halys SMSC for a comprehensive management of the MMS deliveries.

The MMSC has its own separate radius server (no need of a WAP Gateway) in order to obtain the originating party number of the MMS by matching with the IP address.

Beyond the basic MM4 standard support of the inter-communication with other MMSCs, the integrated MMS Exchange allows an advanced control of the peering with partners and hubs.

The MMS control provides firewalling and anti-spam. All MMS sent and received can be securely logged (lawfull intercept).

MMS to email as well as email to MMS services are provided. Subscribers can also retrieve MMS with their Internet browser.

Multimedia marketing communication campaigns are made with the integrated campaign manager or are launched from an external server with the MM7 Soap interface.

5- Standards compliance for interoperability

The Halys product is standard based and compliant in particular with the following standards:
- TS 23.040 for SMS
- TS 23.038 for Alphabets and Language Specifics
- TS 23.140 for MMS (MM1, MM4, MM9)
- SMPP V3.4 Protocol Specification
- TS 29.078 for Camel
- TS 32.299 for Diameter Charging
- RFC 2865 for Radius
- TS 29.002 for MAP
- TS 29.229 for Sh/Diameter
- TS 29.338 for S6c/Diameter
- TS 23.204 for IP-SM-GW including SIP message IWF

Technical Data:
Linux OS on Intel Servers or Virtual Machines
Licensing: Pay-as-you-grow capacity license based on the throughput or number of active subscribers