यांत्रिक अनुदेश
Engineering Instructions for
MOBILE VALUE ADDED SERVICE

प्रलेख संख्या Document No.	:	EI/ MOBILE VAS/12-13/09
पृष्ठसंख्या No of Pages.	:	15
जी आर का संदर्भ GR reference	:	NIL
संशेधन क्रमांक (यदि कोई) Amendment No. (If any)	:	NIL
पृष्ठ संशेधित Page Nos. Amended	:	NIL
जारीकर्ता Issued By	:	Telecom Quality Assurance circle, Bangalore
अनुमोदित Approved by	:	The CGM, TQA circle, Bangalore
जारी करने का दिनांक Date of Issue	:	18.01.2013
Written by	:	**ATISH PAL (QA CIRCLE)**
Expert Comments	:	**K.N.JYOTHI (KARNATAKA CIRCLE)**

Restricted use by BSNL Employees only

All efforts have been made to incorporate all relevant up to date information available, any discrepancies or need for addition or deletion is felt necessarily may please be intimated to this office for further improvement,on E-Mail Id cgmtqa_ei@ bsnl.co.in (or) cgmtqa.ei@gmail.com

BHARAT SANCHAR NIGAM LTD.

मुख्य महा प्रबंधक का कार्यालय
दूर्संचार गुण आशवासन परिमण्डल
दूसरा मंजिल, संचार काम्प्लेक्स,
डब्ल्यू एम एस काम्पौण्ड ४१ व क्रास,
९ व मुख्य रास्ता, ५ व ब्लाक, जयनगर
बेंगलूर – ५६० ०४१

Office of Chief General Manager
Telecom Quality Assurance circle
II Floor, Sanchar Complex,
BSNL-WMS Compound, 9th Main,
Jayanagar 5th Block, Bangalore - 560 041
Tel: 91 80 26533100 Fax: 91 80 26530681
Visit us at www.qa.bsnl.co.in

CONTENTS

MOBILE VALUE ADDED SERVICE

1.0 SCOPE :

This Engineering Instruction describes about Mobile Value Added Service.

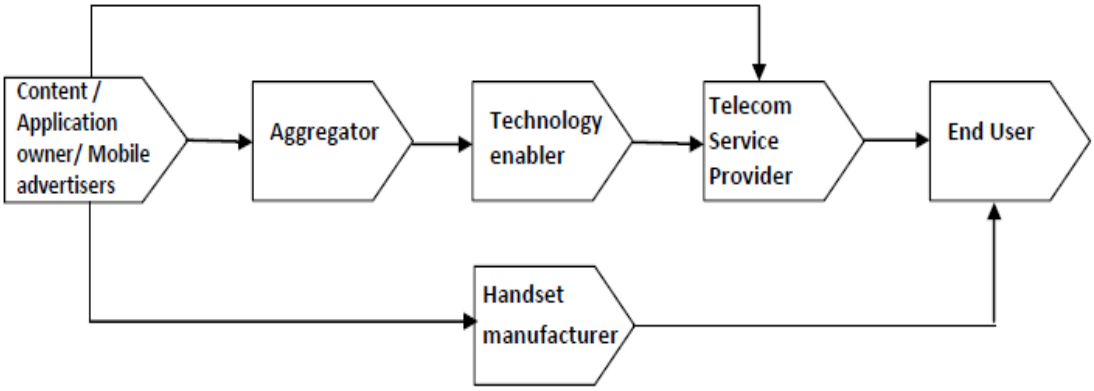
2.0 Overview – Mobile VAS

Mobile value-added service (Mobile VAS) is popular as a telecommunications industry term for non-core services, or in short, all services beyond standard voice calls and fax transmissions. In the telecommunication industry, on a conceptual level, value-added services add value to the standard service offering, spurring the subscriber to use their phone more and allowing the operator to drive up their ARPU. For mobile phones, while technologies like SMS, MMS and data access were historically usually considered value-added services, but in recent years SMS, MMS and data access have more and more become core services, and VAS therefore has begun to exclude those services.

A distinction may be made between standard (peer-to-peer) content and premium-charged content. These are called mobile value-added services (MVAS) which are often simply referred as VAS. Value-added services are supplied either in-house by the mobile network operator themselves or by a third-party **value-added service provider** (**VASP**), also known as a **content provider (CP) .**VASPs typically connect to the operator using protocols like Short message peer-to-peer protocol (SMPP), connecting either directly to the short message service centre (SMSC) or, increasingly, to a messaging gateway that gives the operator better control of the content.

3.0 Mobile VAS – Value Chain

A typical value chain in the MVAS industry encompasses content creators/providers, mobile advertisers, aggregators, technology enablers, telecom service providers and end users or subscribers. Content aggregation and provision of technology platform is usually performed by a single entity known as Value Added Service Provider (VASP). It is also to be noted here that in the value chain of MVAS, telecom service providers are very big entity in comparison to the content providers/content aggregators who are basically SMEs. Mobile handset manufacturers have also started playing an important role in the VAS value chain. Advertisers are also looking for higher delivery of marketing activities through mobile VAS platform.



(i) Content owner/ provider:

The first stakeholder in the value added services value chain is the Content Authors/Producers or copyright owners known as content owners. These entities provide the core content which drives the VAS – which may be owned or sourced by them. Examples include the music companies, movie production houses, media companies, TV channels etc. Their offerings include copyright of songs, entertainment news, movies, television listings, movie trailers, and promotional media content. Advertisers are also producing content for promotion and delivery of marketing communication to consumers through mobile VAS platform.

(ii) Content Aggregators :

These are the companies that aggregate content obtained from various content owners/providers, convert it into the digital or any other suitable format and make it available to technology enablers (value added service providers) or telecom service providers.

(iii) Technology Enablers:

These entities also called as Value Added Service Provider (VASP) provide the technology layer for the telecom networks, which in most of the cases also performs the task of Content aggregator. The technology layer often includes a VAS platform, Mobile Application development & hosting, MIS & reporting tools, operator billing, collection & payment settlement engine. Technology enabler may or may not be dependent on content developers, e.g. mobile phone back up facility does not require any content from the developer but the solution is directly provided to the telecom operator.

(iv) Telecom Service Provider :

Telecom service providers own the access network & end users and also provide end-user billing & collection for the provision of VAS. They have commercial agreements or arrangements with the VASPs for providing the VAS.

(v) Handset manufacturers:

In some cases the Mobile handset manufacturers have direct agreement with content owners or VASPs for content which are embedded in the handset or terminal device. An example of such content is games coming with the mobile handset. They also provide features such as on-device portals which are accessible through embedded links provided in the handsets.

4.0 Categories of Mobile VAS:

There are innumerable value added services like gaming, video and audio streaming, stock quotes, news, cricket, tele-voting, chatting, astrology, which add value to the basic telecom services. Each service differs in content, cost and demand and is customised for different segment of consumers. Primarily MVAS can be divided into following categories:

(i) Entertainment VAS:

Services like music, ringtones & games are very popular and have contributed significantly to the growth of VAS in India.

(ii) Information VAS:

Services like news and information on bank account, real estate, education etc.

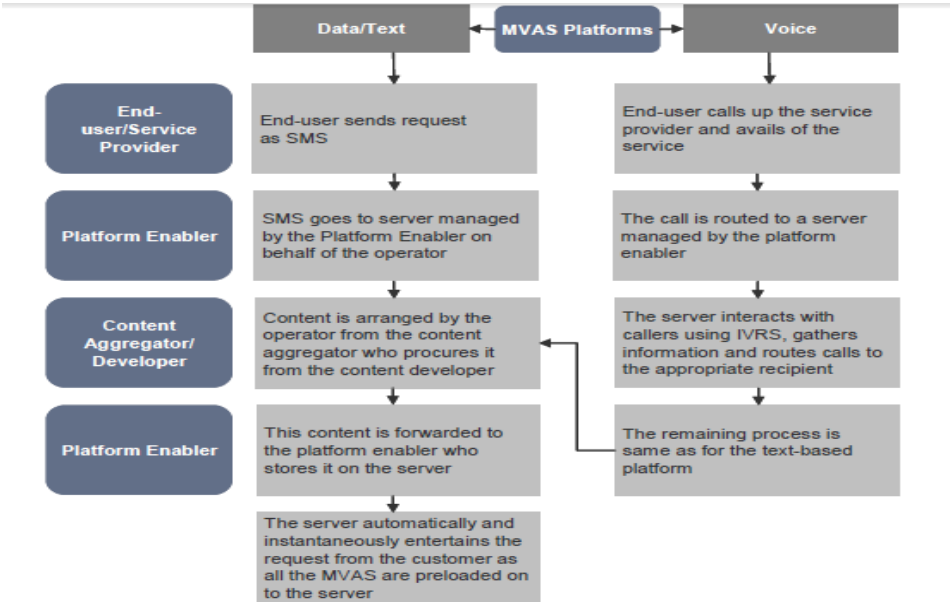
(iii) Transactional VAS:

Enable customers to conduct transactions like banking and payment through mobile phone.

Range of Mobile VAS

Delivery Platforms	Entertainment	Alerts and News	Commerce	Social VAS	Enterprise VAS
SMS	• SMS • Ringtones CBRT • Customised Wallpaper • Animations • Quiz • Jokes	• Cricket / Match alerts • News • Astrology, Vaastu, Fengshui, Personality Test • Banking Info Alerts • Travel alerts details like Train, Flight Details etc.	• Mobile Banking • Ticketing • Travel and Holiday Bookings • Payment confirmations • Due date reminder	• Location Infotainment Search • Advertising • Chat	• Pull on short code for contests, voting, information • Push for advertising • LBS System • Enterprise IM • Group Messaging
IVRS	• Religious Chants • Music on Demand	• Astrology • Vaastu • Fengshui • Personality Test	• Mobile Banking • Ticketing	• Astrology Service • Voice SMS	• IVRS based contact centres • Self Help centres • Voice Portals
WAP Portals	• Video Clip • Mobiles Games • Mobile Themes • Mobile Radio	• Movies Related Info • Stock Portfolio Managers • News Tickers/ Alerts	• Mobile Banking • Ticketing • Travel and holiday bookings	• Mail • Mobile Greetings • Dating, Chatting, Blogging etc. • Infotainments • SNC/UGC • Internet search and advertising • Messenger	• Location based Informations • Internet mobile email • Mobile calender • Access to internet and core business • Applications • Mobile VPN • Push email over handheld devices (e.g. Blackberry) • Wireless email

5.0 Delivery Platforms of Mobile VAS:



SMS are used for downloading monophonic ringtones, whereas WAP/GPRS platform is used for downloading polyphonic and true-type ringtones. Some of the Mobile VAS delivery platforms are as follows:

(i) Short Message Services (SMS):

To process and deliver SMS based value added services SMSC Platform is used by the telecom service providers. SMS can be person to person (P 2 P) and person to application (P 2 A & A 2 P). The subscriber sends an SMS to the server, which then sends back an SMS to the subscriber with the service requested e.g. downloading ringtones, seeking information like news, cricket scores, subscribing to jokes and accessing other such services.

(ii) Interactive Voice Response (IVR):

This platform integrates computer and telephony to detect voice and touch tones using a normal phone call. The subscribers interact with an IVR system with or without embedded voice recognition technology for accessing VAS such as news, live talk to astrologer, movie information, jokes, listening to live commentary etc.

(iii) Wireless Application Protocol (WAP) and General Packet Radio Service (GPRS):

It is a service which enable users the access to Internet on the mobile. These include basically data based value added services such as Internet browsing, MMS, entertainment, download music/video/wall papers, Games and Mobile TV etc.

(iv) Unstructured Supplementary Services Data (USSD):

This is a method of transmitting information/instructions over GSM network. It is a session oriented service where user gets a flash message in real time. Services like content download, cricket updates, jokes, news alerts etc. can be acquired by subscribers using USSD.

(v) Call Management Services (CMS):

Services like missed call alerts, call forwarding, voice mail, incoming call block etc. are provided using this platform.

(vi) SIM Application Tool Kit (STK):

The SIM Application Toolkit allows for the service provider or a bank to house the consumer‘s mobile banking menu within the SIM card. STK is the most secure method for mobile banking. It allows the bank to load its own encryption keys onto the SIM card with the bank‘s own developed application. Thus the consumer‘s data can be stored on the SIM Card and the consumer can be authenticated on the handset prior to having to carry any data across the mobile network.

6.0 Mobile VAS Business Model:

The MVAS market is basically a three-player market comprising of content owners, content aggregators/enablers and mobile operators. There are two business models through which the content is delivered to end consumer.

On deck model:

In this model, the telecom operator undertakes the branding, marketing and selling of mobile VAS content. The billing is also done by telecom operator and it collects the revenue from subscriber. As a result, it retains the largest portion of revenue (60-65%) and the rest is shared among content aggregators and content developers. Presently, in the Indian market on deck value added services, service platform including gateway/middleware is provided either directly by the telecom service providers or by the Value Added Service Providers (VASPs). In the first case VASP only provides the content. In the second scenario VASPs provide technology platform along with content. Commercial arrangements exist between telecom service providers and Value Added Service Providers (VASPs) for providing these services. In some of the cases the VASPs do not own the contents but they have arrangements with the content providers/content developers or copyright owners known as content owners. In the commercial agreements, compliance to copyrights, digital rights management including sourcing of the content is the responsibility of VASPs.

Off deck model:

In this model, the VASP sells content directly to subscribers. The content can be provided either through the operators' portal or through their short code. These short codes are uniform across all telecom service providers. The economics in this model are opposite to that of on deck model. In this model, content developers and aggregators retain 60-65% of revenue whereas 30-35% is being passed on to the telecom service providers.
Off-deck VAS provider needs to integrate with multiple operators to be able to use the same short code to provide services to subscribers across carriers. This can

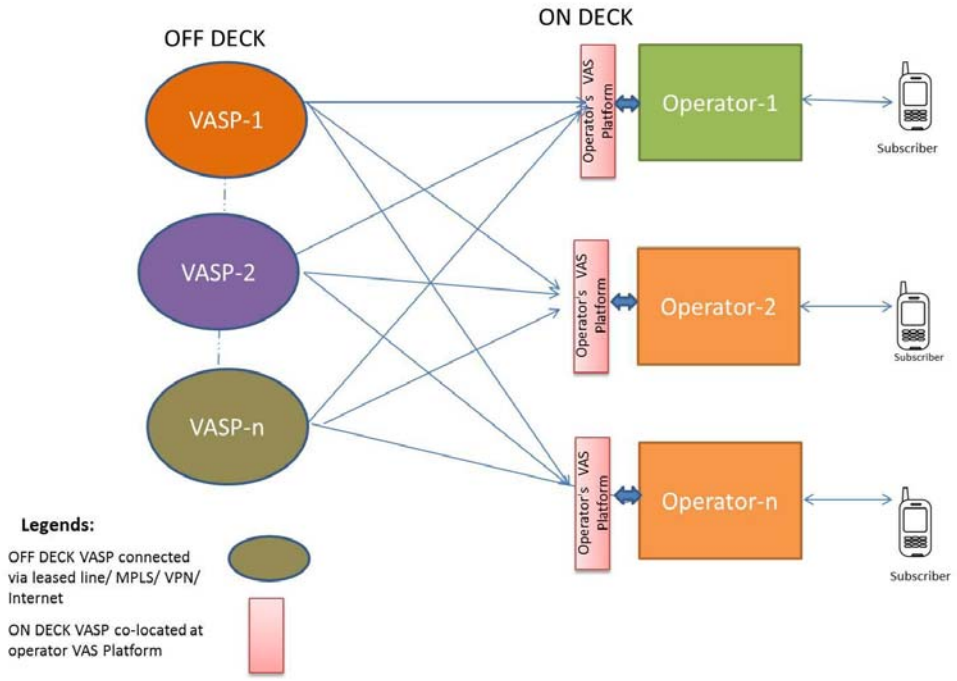
increase the cost and time of integration. Also, the operator has an influence on deciding the end user price as well as the potential revenue share expected by the VASP.

7.0 Mobile VAS Access model:

There could be different modes of access to contents by customers. Based on the control of telecom service provider on access to content, following three models are possible:

a. Walled Garden
b. Open Access
c. Semi-walled Garden

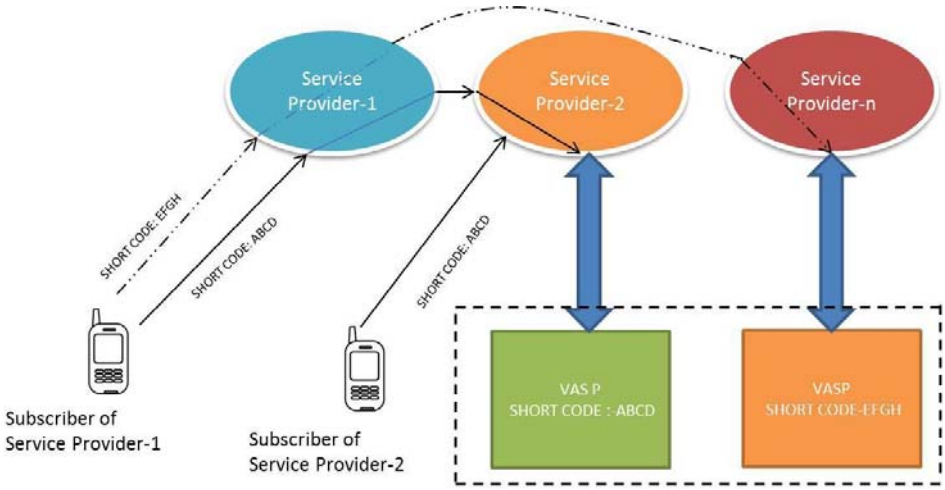
In the **Walled Garden** model, users can only access content on a mobile service provider‘s platform. The selection and placement of content is controlled by the mobile service provider. Telecom service providers decide what goes through their network and what does not. Customers need to choose only from the services available from service provider‘s platform at a price fixed by the service provider.



Walled Garden model

Open Access Model or non-restricted access allows a user to obtain content from any provider offering mobile content. This content can be accessed independent of the mobile service provider‘s platform, through a link to any of the third-party

content provider, through a Web browser on the mobile handset, by sending a SMS or accessing IVR. In an open access environment services and applications are decoupled from the network complexities, facilitating applications/content based services to be provided easily and also enabling third party application service providers to compete with the telecom service providers in the provision of services making the network more open. Open access can promote innovation and can lead to development of various applications depending on the customer needs.



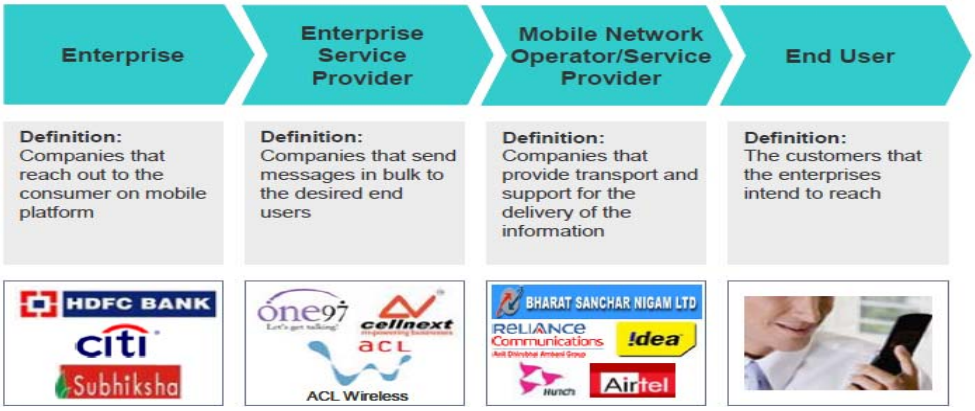
Open access model

In **Semi-walled garden** Model users can access both, the content available on the mobile operator‘s platform, as well as directly from other value added service/content providers. Users often have easier access to the content on the operators' platform, but will likely demand access to content beyond that selected by the mobile operator.

8.0 Enterprise Mobile VAS:

Mobile VAS has provided a platform to enterprises to communicate with existing and potential customers using technology as a common denominator. In the context of Mobile VAS, enterprise service providers are companies that reach out to the consumer through the mobile platform. Enterprises across a wide range of industries such as financial services, retail, real estate, cargo and courier, and FMCG companies are using VAS as a marketing and customer development tool. The flow of information from the enterprise to the end-user can be either via automated alerts or user-generated requests.

The enterprise VAS value chain comprises enterprises, enterprise service providers, mobile operators, and users.



Other players in the Enterprise VAS chain include

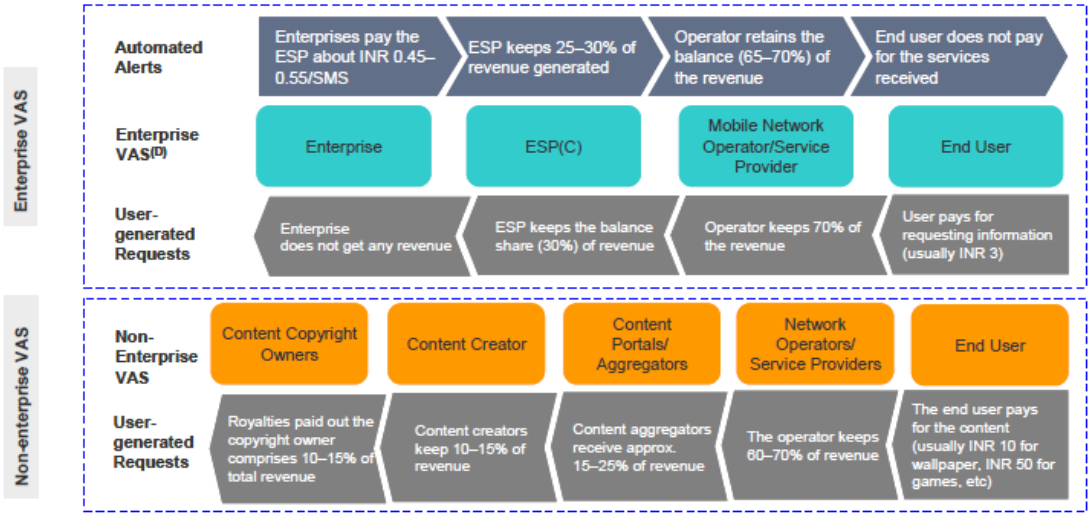
Enterprise services provider (ESP):

Provides the interface between the enterprise and the mobile operator. ESPs are companies that send messages in bulk to the target end-users. Examples include One 97, Cellnext, and ACL Wireless.

Mobile operators:

Provide transport and support for delivery of information from enterprises to end-users through the ESPs. Examples include BSNL, Airtel, Reliance, MTNL, Hutch, Idea Cellular, etc.

9.0 Revenue Sharing in Mobile VAS:



10.0 Mobile VAS in BSNL:

i) SIM Tool Kit (STK) Based Services:

These are SMS based services, embedded in SIM tool kit and are easier to use as they are preconfigured on BSNL mobiles, through Cellone Menu users can get various information like News, Finance, Rail/Air Reservation status, Cricket scores etc.

ii) Push Based Services:

These services are not user initiated. Customer receives an SMS alert from an Insurance company, Bank or Financial Institution or a utility company. Such SMS alerts may relate to reminding the customer about the payment due or about new scheme or a new insurance product.

iii) GPRS Based Services:

These services are available on short code through content providers own WAP site

iv) New VAS in 3G:

In 3G higher bandwidth, maximum up-to 2 Mbps, would be available to end users. BSNL has planned Video on Demand (VoD), video streaming and other multi-media applications in 3G network.

v) BSNL Live'

It is a WAP Portal which offers one stop shop for all Information, Entertainment, and Communication related requirements. BSNL Live' provides a variety of services : Movies /Videos /Game etc. 'BSNL Live' can be accessed by all GSM (2.5 G and 3G) subscribers.

vi) New Value Added Services:

- Mandi Bhav:

Mandi Bhav service provides rate list of more than 500 commodities from over 3000 Mandis across India. To subscribe to this service we need to send SMS MANDI to 59696.

- YOSMS:

  The service allows a subscriber to send SMS with fonts in different colours, backgrounds, sounds and smiley which essentially gives effect of MMS. To subscribe to this service we need to send SMSYO SMS to54444.

- Handset Security:

  The service provides a solution for security of subscriber's mobile handset. Whenever a mobile phone is stolen and SIM is changed, subscriber gets a message about change of SIM to pre-registered mobile nos. To subscribe to this service we need to send SMS MS to 52222.

- Data Security and Backup:

  In case of theft / loss of subscriber mobile handset, this solution protects the subscriber data stored in the phonebook of handset. To subscribe to this service we need to send SMS MS to 52222.

- Call Tricker:

  With this service a user can play various pre recorded sounds in the background while accepting the call. To subscribe to this service we need to send SMS CALL to 52222.

- Mail on SMS:

  This application makes it possible for a subscriber to receive mails on his/her mobile as SMS. To subscribe to this service we need to send SMS subemail 56688.

- Mob-Share (Photo Video Sharing):

  BSNL mobile users to instantaneously share a mobile media viz. photos and videos with other BSNL mobile users directly, start this service need to send SMS 'subs name' to 59696.

- SMS Counselling:

  This service provides counselling for general problems/queries from experts across the globe in 6 major fields namely Love, Workplace, Family, Stress

Management, Feelings, Career and Visa, subscribe to this service we need to send SMS HOPE to 54000.

- Humshakal**:**

This application helps to understand the similarities a person has with other celebrities, icons etc. To subscribe to this service we need to send SMS HMM to 54000.

The MVAS services are frequently changeable , hence latest update can be obtained from Internet www.bsnl.co.in/service.

11.0 Abbreviations:

VAS: Value added service

STK: SIM Tool Kit

VASP: Value-Added Service Provider

CP : Content Provider

SMS : Short Message Services

UASL : Unified Access Service License (UASL)

ESP : Enterprise services provider (ESP)

12.0 FAQs:

i) What is VAS ?

In the Unified Access Service License (UASL), VAS is defined as follows -

"Value Added Services are enhanced services which add value to the basic tele services and bearer services for which separate license are issued"

ii) What is the other name of Transactional VAS ?

mCommerce VAS

iii) What are Short Code Providers in the context of Mobile VAS?

These are the companies who own a short code (e.g. 58888, 53456 etc) which is sold to a third party client for some keyword and a specific period. On one hand they need to tie up with the operators to ensure their short code works across subscriber base and on the other hand they sell their short code to other companies like real estate, hospitals, etc. who advertise their products using the short code.

iv) What is content convertor in the context of Mobile VAS?

Since most of the content in MVAS is originally designed for some other media, it needs to be converted into mobile compatible format. This is where content converters enter the value chain. They interact with the operators and work closely with them.

v) What are Technology enablers in the context of Mobile VAS ?

Technology partner & platform enablers handle software platforms and authoring tools. Thus they provide the backbone to all the MVAS being provided. The technology backend include solutions like Tele voting system, Voice portal, etc.

vi) What are the Delivery Platforms of Mobile VAS ?

For WAP CP pushes the WAP URL on to the customers Mobile Handset as an SMS. On clicking the URL, services can be subscribed or downloaded. For Eg Mimobi TV (i.e 2G & 3G TV service on mobile.), Download Wallpapers, ringto0nes etc.

For USSD Service, the customer dials a USSD string and gets subscribed. The alerts may be received as SMS or USSD. E.g. Indiatimes, Spicedigital etc.

13.0 References:

Technical documents on Mobile VAS.