

'm Back in the USSD''

(You Don't Know How Lucky You Are, Boy)

*"USSD is doing its comeback.
An old technology that finds its niche solution
providing a web surfing experience -
just using text - and at no cost.
The session ability that is inherent in the technology
is a major advantage over regular SMS."*

*[Amir Dorot](#)
CTO, Cellact*

Start using USSD, come back to the old good things!

For ages we know that certain things are good for us. But we don't use them. We continue on looking for something new, a "magic belt" to loose weight, instead of "getting there" by using something proven; by eating less and exercising, for example.

The same is true for an old and unique technology called USSD. It makes communication from a mobile phone with a computer in the mobile network extremely easy. It gives a subscriber a simple dialog functionality. It is free in roaming.

USSD stands for Unstructured Supplementary Services Data sent to/from GSM mobile networks. USSD technology is defined in GSM standard 02.90 (USSD Stage 1) and 03.90 (USSD Stage 2). What is valuable, however, is a USSD service used by a subscriber and provided by a service application.

Nowadays USSD technology is becoming more popular. It's getting used for various services, most often nowadays for mobile banking (read about applicability of USSD for mobile banking in [these two white papers](#)). USSD is getting used for mobile coupons. USSD is used in roaming for Call Me type services.

USSD Services: the Essence of It All

Of course, technology is secondary, the use of it is primary. What can one do with USSD? The following list compactly summarized the most important cases:

- **Balance Inquiry (dial *100# and receive your balance on the screen of mobile)**
- **Balance Top-Up (e.g. using scratch cards – dial *101#cardPIN# and receive money to your phone account)**
- **Balance Transfer (payment from your balance to another balance – dial *102#phone-number#amount#)**
- **Call Me (requesting another party to call you – dial *103#mobile-number# and the other**

party will receive a "Call Me!" note from the number to call)

- Profile Management (add someone to your plan, change your plan, manage services – portal with a menu at *111#)
- Mobile Banking (e.g., [Barclay's Bank in India](#))
- Notifications ("Time to top-up")
- Subscriptions ("Would you like to subscribe to a news service? 1=Yes, 2=No")
- Voting ("Please rate our customer service: 1= :) , 2= :(" after a call to the bank)
- Games (E.g. 'Maze' where a teenager gets prizes by finding his way in a maze)
- Delivering non-intrusive personalized mobile advertising ("Your balance is \$10. Start saving with a new plan by calling 12345 now")

What is Needed to Get USSD Going?

USSD is a very simple and robust technology for the end user. As a rule, a user just dials a number (usually preceded with a * and enclosed with a #) and receives a text (a menu) on the screen of the mobile that can be responded to (answered). In effect, a user enters [a dialog with the application](#). There is also an alternative way to initiate a USSD session by dialing a regular phone number. If you are interested in learning this new way, [contact us](#).

For a content provider, USSD can be somewhat problematic. In technical terms, a USSD service requires a USSD application which needs to be tailored to a particular USSD gateway/center located in the mobile operator's network. Therefore, a content provider needs to find a suitable technical or aggregation partner (like Eyeline Communications for MTS, Russia) who would help.

Note: It is possible to provide USSD services globally without the use of a particular operator. [Contact Eyeline](#) for more details on this use of USSD technology.

For mobile operators, a USSD center (gateway) ([see Wiki Definition](#)) is a piece of hardware with software that needs to be integrated into the core network and plugged into other modules like billing. If you are interested to know details (there are some), [see our USSD center presentation](#).

There are lots of suppliers of USSD gateways/centers. And I **mean** "lots":

http://eyeline.mobi/sms_ussd_center/

<http://interacctsolutions.com/>

<http://patternmatched.com/products.html>

http://press.nokia.com/PR/199903/777096_5.html

<http://www.6dtech.co.in/products/messaging/ussd.html>

<http://www.acision.com/> also known as Logica/CMG

<http://www.bhartitelesoft.com/products/ussd.htm>

<http://www.cellicium.com/ussd/info/>

<http://www.comverse.com/data/uploads/products/USSD%20Center%20BR%202008%200398b.pdf>

<http://www.flashmedia.co.za>

http://www.inswitch.us/usssd_gateway.htm
<http://www.leibict.com/>
<http://www.mctel.net/art.php/en/ar21/usssd-gateway.html>
<http://www.opencode.com/solutions-1-1.php>
<http://www.sacaya.com/usssd.html>
<http://www.sicap.com/products/usssd-menu-browser/>
<http://www.surizontech.com/products/messaging.htm>
http://www.syniverse.com/content.cfm?section_id=2&service_id=3&service_type_id=1
<http://www.telenity.com/usc.php>
http://www.truteq.co.za/products_telco/
http://www.wind-mobile.com/images/WM_brochures/PharosUSSDGateway_Brochure_EN.pdf

Because I am from Eyeline, I should speak only for Eyeline. As our experience show, the choice of supplier is usually based on whether you know them, whether they had contacted you, or whether other operators are using their solution. It is an OK approach. But if you want to make an intelligent choice, it is better to host a competition and invite all companies (if I missed some in the list above, please [let me know!](#)), having clear criteria to judge them.

As to our center, I see four pluses with my own eyes:

- 1) **Installation.** It is very compact and thus can be easily added to existing infrastructure.
- 2) **Performance.** You can measure it by messages per second, for example. Our developers are spending considerable time building probably the most powerful solution. At the same time it is small and expandable.
- 3) **Maintenance.** Since my officemate is a guy from technical support, I see how we stand by our solution. We have dedicated support specialists who monitor the centers day and night. Not because there are problems but because our customers should have their peace of mind.
- 4) **Track Record.** We have supplied USSD centers for the 10th largest operator in the world since the beginning of the century.

Do you want to have the most efficient USSD solution? [Get in touch.](#)

Knowledge is Power: Get to Know USSD

Well, take the most out of this amazing technology and avoid potential pitfalls. A long and heated [discussion](#) on LinkedIn about obstacles to a faster uptake of USSD, has yielded a list of potential “pitfalls” that I must evaluate here.

Handling USSD Objections

Objection	Assessment	Resolution 1	Resolution 2	Resolution 3
1. "USSD is not well known"	Major	Subscribers are very quick to learn	It is easy to begin with USSD services; the	In fact, USSD increases revenue from VAS,

		how to use USSD	network is basically ready to deploy USSD; some providers give very good terms on their USSD centers	enhancing rather than killing SMS services
2. "Pricing not clear"	Average	Charge for downloads or subscriptions	Although you can charge per click, do so only in games or quizzes	State the price clearly as it is (usually) required by law
3. "Consumes too much network resources"	Minimal	This "worry" is actually found to be a myth; there are no real life instances when a well planned USSD deployment caused trouble.	There are parameters that can help to control utilization of the network: session and answer time-outs and dynamic SDCCH allocation.	The operator can also give the highest priority to calls vs. USSD/SMS services.
4. "Difficult to remember USSD codes"	Minimal	Use a single point of entry for all services, like *111#	Send a Help SMS with all codes upon the first access of *111# or when selecting "Help"	Don't use *--# numbers, use real numbers (contact us to learn how)
5. "It's considered old fashioned"	Minimal	It's the easiest entry point to any other (advanced) service – what functionality of a mobile phone can compare with a phone call in terms of simplicity?	USSD uptake is actually growing over time	Experts forecast a greater use of USSD
6. "Sloppy interface"	Minimal	Use it as an entry point to other "picturesque" interfaces	Text interface works fine on ANY phone	Less obtrusive ("Google Adwords vs. banners")
7. "No standardization"	Minimal	USSD is defined by GSM standards	USSD gateways (centers) are usually connected through a standard protocol like SMPP	USSD services and applications are often purchased with USSD center

All Good... but What Are People Saying?

Dozens of people from all around the world discussed the future of USSD. They shared their real life stories. Although I asked them a question about obstacles to a faster uptake of USSD, they could not hold their personal excitement about USSD services. Below is a digest of what they have said:

- USSD is used "for prepaid top up because many people prefer punching in while seeing on the screen rather than going through an IVR." ([Jean Cerien](#), CEO at COMM4U; [Paulo Correia](#), Telecommunications Consultant; [Niranjan Srinivasan](#), Ericsson - Design & Planning - IN & VAS)
- "USSD is very popular for a number of core and killer services like:
 - Subscriber profile and balance management
 - Non standard call initiation (like shared charging, B-party charging)
 - Call back services
 - Rarely voting services" ([Murad Mamedov](#), Wide Area Specialist, [Paulo Correia](#), Telecommunications Consultant, [Jim Murphy](#), Product Manager Homisco Inc.)
- "More generally, USSD is used:
 - where you need subscriber to confirm some action. For example, a balance transfer service.
 - where a simple menu consisting of a few items is needed.
 - where you want to be sure that your interactive service could be used by all your subscribers disregard of phone model or service settings." ([Yuriy Filatov](#), Solution Architect at Ericsson)
- [Valentin Micic](#) (PRINCIPAL CONSULTANT at PHAROS CONSULTING) adds:

"CallMe service (a service where a subscriber dials an USSD string, resulting in an SMS being sent to another subscriber, asking him/her to phone the caller back). The initial thinking was that this service will never exceed more than 12 requests per second. A few months later, we've been sitting on 100 requests per second – and all that without any advertising. So much for the hard-to-use argument..."

These days USSD is used for a number of things, including mobile banking.

Some operators are using USSD for notifications -- at least one operator in Europe is using USSD gateway to push One-Time-Password to subscribers requiring secure login over the internet (the reason: cost – it is much cheaper than SMS).

USSD is also used to generate revenue for the operators – time-based billing, where subscriber is charged for a time spent utilizing USSD. An interesting point is that introduction of the billing caused the usage of (what used to be) a free service, to drop substantially, only to bounce back to the similar level within few weeks.

Also, there is a number of pilot projects in telemetry and application-to-machine communication, e.g. switching things on and off, checking statuses etc."

- "Broadcast adverts that are spawned by a USSD transaction" ([Graeme Lewis](#), Telecommunications Projects and Marketing Professional with 25yrs experience). "Started to use USSD technology as a promotional channel just with a short message after balance requests." ([Paulo Correia](#), Telecommunications Consultant)
- "The same way that subscribers are using WAP, SMS, IVR or even Web site - they can now operate the same services using USSD. From the feedback we get from our customers - we know it is a very simple way to operate those services - and subscribers rapidly adopt this technology." ([Amir Dorot](#), CTO, Cellact)
- "Mobile payment service based on USSD. Very simple and convenient. Person receives a bill (paper or digital) with the USSD code he has to use to pay the bill." ([Goran Radic](#), Country Manager at Siemens IT Solutions and Services)
- "Our implementation on USSD includes services such as Balance/Recharge, Voice Mail activation, Registration of Family and Friends numbers, Change of Tariff Plan" ([Carlos Mendoza](#), VAS, Product Development at MTN Irancell, Tehran, Iran)
- "For prepaid - balance request after topping up; balance view after calls and SMSs." ([Paulo Correia](#), Telecommunications Consultant) "USSD is the preferred and best mode to do balance checks & recharging prepaid accounts." ([Niranjan Srinivasan](#), Ericsson - Design & Planning - IN & VAS)
- "Transferring money, using refills, making changes to your account. Our USSD gateway has been very beneficial in this area." ([Jim Murphy](#), Product Manager Homisco Inc.)
- "USSD is great for content subscription. An out-roaming customer wants to contact his friend whose mobile number is 9810012345. He simply dials *333*9810012345#. His friend receives a message requesting him to call the customer back -- this increases ARPU for the operator!!! (Call Back service)" ([Gaurav Sarin](#), Telecom Evangelist)
- "USSD allows for very complex and customer oriented services like CUG (closed user group), money transfer from one account to another" ([Patrick MIDY](#), VAS engineer at Digicel)

How to Make Sure USSD Services Spread Like a Wild Fire?

When launching USSD services, **it is paramount to have a good marketing campaign**. I mean a good old classical AIDA campaign. It is absolutely necessary to build *Awareness or Attention*, that is to teach people about USSD (the easiest way to learn USSD is through a balance check routine; it would also be a good idea to start advertising your [*111# portal](#)). Then move on to the *Interest* campaign (for example, by advertising a "killer" application like "Call Me"). *Decision/Desire* can be provoked by a voting application ("Vote Now" via a Balance Check Ad?), and the *Act* can be induced by a FREE trial of a Top-Up, a Weather, a Sports, or a Balance Transfer application.

Besides this marketing campaign for end-users, content providers and operators must have a **clear understanding of what USSD services are capable of** and they must be aware of myths surrounding USSD. As to the latter, operators must understand that USSD [does not impede](#) the network in terms of call (service) availability. It's a myth. There are [no such instances recorded](#) around the globe. USSD also does not replace but rather [add revenue streams](#) to existing SMS services. This is good news for service providers. USSD is often considered a dead-end technology in the view that 3G will replace it. It is a wrong view. What 3G adds to the mobile network is access to a faster Internet from a mobile phone. If porting of USSD services to the Internet consumes resources (as it does) and if it increases end-user costs (in terms of service accessibility from 2G phones, service learning costs, and roaming costs), a mobile operator will loose from switching attention away from USSD portals. Many experts including myself believe that USSD technology will be increasing in use and that it will in fact enhance 3G experience.

It is easy to start/to try using USSD. Of course, big volumes of USSD services need appropriate technical infrastructure. But in order to start serving USSD services NOW, you just need to [contact us](#). We offer 1) immediate global USSD services accessed through a regular or 800 number; 2) global USSD coverage through renting of our USSD center (about 1 week lead time); 3) USSD center ownership (depends on hardware delivery, about 1 month).

When revenues are stabilizing and 3G is not yet paying back, launch USSD services to increase your ARPU!

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