Eko's comments on the Consultation Paper on USSD-based Mobile Banking Services for Financial Inclusion issued by TRAI.

Introduction – ` 6000 Crore already processed by Eko on USSD

Eko democratises access to formal financial services using mobile phones as a financial identity for people at the bottom of the pyramid. Eko stands out for simplicity of user experience while still ensuring secure transactions.

Eko is a Technology Service Provider and Business Correspondent partners to leading banks including State Bank of India and ICICI Bank and Yes Bank. We facilitate transactions like deposit, withdrawal and money transfer using simple number dialing (especially USSD) and use an OTP + PIN based system for 2-factor authentication. Eko has been a pioneer in providing a comprehensive and successful financial inclusion service using just basic mobile phones.

We also leverage existing retail shops like groceries, chemists and mobile recharge points as CSPs (Customer Service Points) to enable the customers to open their accounts and do cash-in/ cash-out services.

Eko's Mobile Money solution is unique in many ways as it is one solution which works on all mobile phones - across all platforms, technologies and Mobile Network Operators. And also for all customers across all languages and degress of literacy. It works on the universal language of numbers and now a universal behavior - dialing of numbers.

Eko processes ` 3-5 Crore every day over USSD. Since early 2008, Eko has enabled over ` 6,000 crore in transaction volume and over 30 Lakh transactions using USSD on mobile phones. In fact, Eko was the first company in India to realize and pursue the use of USSD as the primary transaction channel. This also makes Eko one of the highest value transaction processor for mobile initiated transactions in India.

Eko has been widely recognized for its innovative and unique transaction interface by dignitaries like Bill Gates (Chairman, Microsoft; Bill & Melinda Gates Foundation), Barack Obama (President, USA), Timothy Geithner (Treasury Secretary, USA), Sheila Bair (Chairperson FDIC, USA), and Thomas Freidman (Author & Columnist, The New York Times), John Kerry (Secretary of State, USA), Alan Duncan (Minister of State for International Development, UK), among others.

The industry and the media have very well recognized Eko. Some of our awards include, PC Quest - Best IT implementation Award of the year 2010, World Summit Award - Mobile Content 2010, IAMAI - Internet and Mobile Association of India - Best Digital Socio-economic Initiative, M Billionth - Award South Asia 2010; m Business and Commerce category, NASSCOM Emerge 50

Start Up Category, Innovator's Competition for DST-Lockheed Martin India Innovation Growth Program 2011, Leap of Faith Awards - Entrepreneur of the Year in Financial Services by ET Now, Tech Laureate 2011, Technology Development Board - Govt of India and US India Science & Technology Endowment Fund.

Q1. Do you agree thatUSSD is one of the most appropriate modes formobile banking for financial inclusion? If not, which mode do you think is more appropriate? Please support your viewpoint with reasons.

USSD is indeed very well suited as a medium for true and pervasive financial inclusion due to the following reasons:

1. **Number literacy.**

   A significant proportion of Indians are illiterate. It is also interesting to note that mobile phones have become pervasive even among this population. Our research has provided us insights that the reason why many people are able to use the basic functionality of the mobile phone is because they understand and recognize the digits from 0 to 9 and numbers in general. This is called numeric literacy. USSD being a number dialing interface similar to missed calls, thus stands a very good chance at being adopted by this populace.

   Another interesting fact is that numbers transcend even regional barriers like languages. India with its hundreds of languages and dialects would otherwise remain a distant dream for any other design.

2. **Works out of the box on handsets.**

   USSD does not require provisioning or activation or downloads or installs. It just works out of the box on all GSM handsets. This seemingly simple feature may well be one of the strongest reasons for its adoption as it drastically cuts down on the cost and effort that would have otherwise been required to just get the 'solution' to work.

   Also, despite the growing number of smart phones, a significant proportion of mobile phone users are still on Ultra Low Cost Handsets (ULCH). Downloads and installs are nearly impossible on ULCH thus leaving only SMS, Voice or USSD as universal alternatives.

   However, we must raise caution on some of the finer points on USSD implementation, which if not thought through properly, may actually impede its adoption:

   a. **Menu based vs. Non-menu based USSD.**

Non-menu based. A USSD session could be a simple request-response pair. That is, user dials a transaction string (based on a prescribed format or syntax) like *543*9812345678*100*1234# and press the call button. This initiates a USSD session where the transaction hits the transaction server (and the bank) and then the bank through the same session sends back a response USSD message that gets displayed as a simple text e.g.:

"Money sent successfully.
To: 9812345678
Amount: ` 100
TID: 121212.
Thanks…"
The session ends.

Menu based. A USSD session could also be interactive. E.g., the user dials *111#. This request reaches the server, which responds with a menu e.g.:

"Please select from the following menu
1. For account balance
2. For last transaction.
3. For money transfer.
Please enter your choice:
[-------------------]"

The user now has to press the 'Answer' button, then type in the choice and then click the send button. Such iteration continues until all the required input fields for the transaction have been captured. Then, the transaction server is invoked and a transaction response similar to the one in the Non-menu based section above is sent back.

Eko has consciously chosen the non-menu based (single string / single shot) USSD transaction interface due to the following reasons:

• Mobile phone users may wait for some time before giving their responses and inputs to menu choices. However, they have no visibility or control on whether they have exceeded the session timeout. Most often, by the time they reach the final step, the USSD session would have expired forcing them to repeat the transaction. On some handsets, even repeat needs to be done after waiting for some more time or after restarting the device itself! Based on some anecdotal evidence, we have found the success chance to be less than 40% for menu based USSD. This will only lead to frustration with the user experience.

• Menus require users to read and understand the (menu) text that will be presented before them. This effectively negates all advantages of USSD to transcend illiteracy or inability to read a given language.

- Menus do have an advantage for some sections of users. However, it must not be the only option available.

b.   Input data types.

Interestingly the mobile banking implementation of SBI's *595# has a critical flaw. While activating the service it prompts the user to enter the bank's 'Mobile Banking User ID', which is alphanumeric. However, most ULCH handsets do not support alphanumeric input (the earlier version of USSD only required numeric inputs). Thus only the high end users can ever activate these services thereby rendering the access advantage of USSD useless.

3.   Familiarity with other USSD services

The fact that most telecom operators have already spent years and money in educating customers with USSD based services like mobile prepaid talk-time balance check and other VAS e.g.: "*121#" or "*123#" is a great advantage. People are familiar with this number dialing based interface and that familiarity will help with the financial inclusion agenda. It also helps that over 96% of the telecom subscribers use pre-paid billing which implies that at some point or the other they would have definitely used a USSD service.

4.   Eko's success with USSD

Eko has processed millions of financial transactions using USSD in India. The fact that our customers continue to like and use this service in urban as well as rural areas, across languages and literacy levels, is proof enough that USSD, as an interface (if designed properly) will work.

Q2. Do you agree that the Mobile Banking (Quality of Service) Regulations, 2012 should be amended for mandating every TSP, acting as bearer, to facilitate not only the banks but also the agents of banks acting as the aggregation platform providers to use SMS, USSD and IVR to provide banking services to its customers? Please support your viewpoint with reasons.

Yes.

1.   Openness fosters innovation. Without doubt, the greatest, the most successful and the most inclusive technological initiatives of our age have been built on creating eco-systems. Open APIs have fuelled most of the Internet, as we know of it today. Not only must 'agents' but also any legal entities that are capable of adding value to the customer proposition must be allowed access.

The reason is simple. It is impossible for banks or TSPs alone to create innovative solutions (think out-of-the box). The eco-system must itself be inclusive to foster innovations that will further increase usage, usability, features and access to financial services.

2. Continual improvement. One approach would be to create something static and stagnant and leave it as such. Unless there is an entity whose main focus is providing more value to the customers on the interface and to keep upgrading, the initiative will die a slow but sure death. Another approach would be to create a dynamic platform that would allow more entities (especially agent network/ technology companies because they interact directly with the end-consumers and come with a lot of valuable insights). Thus, it is in the interest of continual improvement that not only banks but also its agents be allowed access.

3. India is a vast country. While it is possible to try and design a Minimum Value Proposition product, it will be impossible to think that this will be able to cover all the possible use cases. Allowing other technology service providers access will allow the interfaces to be customized to a multitude of requirements: regional, product-wise or based on some specific scenario.

Q3. Do you agree that in the case of USSD transactions for mobile banking, TSPs should collect charges from their subscribers as they do in the case of SMS-based and Application (App) based mobile banking? Please support your viewpoint with reasons.

Customers are not currently used to being billed for USSD usage for most direct TSP services, while they may be billed for the service itself.

To foster greater adoption and financial inclusion, the financial institutions may have to subsidize this cost or recover this cost indirectly from the customers.

The option (not a mandate) for a bank or its agent to take on this cost and not have the customer billed must also be available.

Q4. Do you agree that records for USSD transactions must be generated by the TSPs to provide an audit trail for amounts deducted from prepaid subscribers and bills raised to postpaid subscribers? Please support your viewpoint with reasons.

1. Customers are not currently used to being billed for USSD usage for most TSP services. To foster greater adoption and financial inclusion, the financial institutions may have to subsidize this cost or recover this cost

indirectly from the customers. The option (not a mandate) for a bank or its agent to take on this cost and not have the customer billed must also be available.

2. If the customer is not being billed, the TSP and the bank/ agent of the bank may enter into a suitable commercial agreement where mutual logs of transaction hits could be used to generate the bills. However, if the customer is being directly billed, it becomes imperative to provide the details of billing and thus direct CDR generation would be required.

3. To avoid the cost and hassles of keeping track of individual transaction sessions, the USSD services could be provided on a monthly or annual subscription basis. Where, for a reasonable charge (we have found on an average, an end customer uses one to two transactions only per month), the customer could be provided unlimited access (subject to reasonable limits).

Q5. Would it be appropriate to fix a ceiling of ` 1.50 per USSD session for mobile banking? Please support your viewpoint with reasons.

The short answer would be *no*.

If a ceiling is being decided, there must be a fair justification to why the ceiling is ` 1.50 and not ` 0.50? The figure must neither be simply speculative nor plain prescriptive.

In the interest of customers and service providers, neither should a fixed pricing be prescribed nor should the billing mode be made inflexible. It is best for the honorable regulator to provide guidelines that foster a level playing field. Lay down fundamental rules and leave the market to develop a sustainable model ensuring sustenance of all and above all, to ensure that customers' interests be protected.

Q6. In case your response to Q5 is in the negative, please suggest an alternative methodology to fix a ceiling tariff for a USSD session for mobile banking. You may also support your viewpoint with a fully developed model with associated assumptions, if any.

An interesting start would be to analyze what it would really '**cost**' a TSP to provide these services and to realize that by providing more usage of the infrastructure that it has already put in, the TSP makes a better return on an investment already made.

1. A non-menu based USSD takes a lot less resource overhead from the TSPs than a menu based one. A menu-based implementation may have a higher cost in terms of reserving resources for the entire duration of the

session and having multiple steps. For TSPs with billing systems integrated, it must also be possible to bill based on duration.

2. Actually, the TSP resources used for such a USSD transaction would be even lesser than what would be required for an SMS. A bulk/ quantity based commercial pricing model exists today for SMS and could simply be applied to USSD as well. At similar volumes, the pricing should be definitely less than the cost of an SMS. The guideline must only say that the cost for access should be less than the cost of a transactional SMS, but leave the actual cost open for negotiations as a few months ago, the cost of sending a transactional SMS was as low as `0.3 and it currently is around ` 0.18 per message. USSD may be extended at similar costs.

3. Mandate that services must be available on the basis of transparently available and published commercial rates based on the cost of the infrastructure and then allowed to evolve basis free market forces but keeping in mind the nature of micro transactions that take place as part of the financial inclusion.

Q7. Is there any other relevant issue, which should be considered in the present consultation on the use of USSD as a bearer for mobile banking services?

1. *TRAI / DoT / Neutral entity should be the nodal agency to approve of USSD Short Codes across all the TSPs.* When the service provider approaches the TSPs with a Short Code request they are mostly drawn into unreasonable negotiations by the TSPs. This is a non-competitive practice and should be definitely avoided. Short code is akin to domain name and hence a nodal agency must provision it across all TSPs.

2. Security is an important aspect for a transaction. In USSD, the data essentially travels in clear-text though the GSM channel itself is encrypted using A5. A5 and its variants have shown to be vulnerable, sufficient research material exists on the Internet.

   Also, personnel with privileged access to the USSD end-points can view transaction logs and potentially also every message that passes through.

   Appropriate methods should be utilized to ensure that customer PIN cannot be compromised even with personnel with privileged access. Also, policies must be implemented to ensure that logs are purged periodically and access to these systems be strictly monitored and controlled.