

Reliance Communications Ltd Comments on Quality of Service Requirement for delivery of basic financial services using mobile phones

General Comments

Mobile Banking and Financial Inclusion

1. Financial exclusion is one to biggest challenge which contributes to the stark socio - economic divide that exists in the country. The financial exclusion mainly restricts rural areas where accessibility is limited and the population density is substantially lower. However, the phenomenon is now also common in urban areas where some segment of the populace remains financially excluded due to constraints such as access timings and income potential.
2. The use of technology is obvious choice to drive the financial inclusion programs as it helps reduce the cost of operations without compromising on service and security. It is becoming increasingly clear that mobile is the only way forward. In India, the mobile market is burgeoning, achieving unprecedented penetration in rural, remote and urban areas. The total number of mobile subscribers by October 31, 2010 is about 680 million. India is now adding more subscribers per month than any other country. The potential of leveraging this ubiquity has to be realized for Financial Inclusion of masses.
3. RBI has changed regulation and enabled banks to leverage a partner network to service customers. In this model, banks can tie-up with business correspondents in various areas to provide banking services. This regulation provides huge potential to provide banking services through vast telecom retail and infrastructure network. Mobile-led financial inclusion has huge growth opportunity as India has experienced an unprecedented mobile penetration. The financial inclusion has not been able to catch pace with mobile penetration but with supporting policies of the government reaching out to the unbanked citizens may now become a reality.

Methods of Communications

4. The mobile space is filled with a wide variety of devices each offering a different set of capabilities such as SMS, WAP Browser, Mobile web browser, , USSD capability, among others. **To have a wider and seem less acceptance of the services, all modes of communication subject to security requirement should be permitted.**

Need for different regulatory approach for Pull and Push Mobile Banking SMSs

5. Mobile SMS banking services are operated using both push and pull messages. Push messages are sent by banks without the customer initiating a request for the information. Typically push messages are transaction alerts, balance information etc. These are not customer originated mobile banking messages and should remain outside the domain of current consultation. Millions of messages are being sent by banks on daily basis generally for their existing customers. These messages are not particularly linked to no-frill bank accounts for which this consultation is being conducted. **Therefore, the quality of services for Push Banking should be as per SLAs between the service providers and Banks and should not be covered under proposed quality of service regulation for financial transactions.**

6. Pull messages are those that are initiated by the customer using a mobile phone, for obtaining information or performing a transaction in the bank account. Information of an account balance enquiry is a common example of pull banking SMS. Pull SMSs are more relevant for popularizing mobile banking services. **We understand the current consultation is only with regard to the pull SMS Banking services and not push SMS banking services.**

RCOM Comments on Issues for Consultation

1. What method(s) of communication on mobile network (GSM and CDMA) would be suitable for enabling financial transactions using mobile phones? Please explain your answer

(a) Mobile Banking is delivered in the following main three ways:

- (i) Message based which is predominantly SMS but also uses USSD
- (ii) Mobile Browser
- (iii) Downloadable application based on STK or Java client
- (iv) IVR

(i) SMS Based Mobile Banking

(b) This is currently the most popular method of mobile banking and the easiest to deploy. It is generally used to alert bank customers of account balances, overdraft limits and for the notification of important transactions, such as transfers. The main advantage of SMS Mobile banking applications is that almost all mobile phones can use SMS. Although there are security issues relating to SMS as end to end encryption is not available. RBI has allowed only transaction upto Rs 1000 using SMS banking.

(ii) **Mobile Browser**

(c) Banks have deployed mobile Internet and WAP websites which are fast gaining popularity. Most mobile Internet banking website users will have access to mini statements and balance enquiries at the base level and more advanced services including payment instructions and bill payments. The advantages of using a browser based service include security (no information is left on the phone) and from the viewpoint of rapid rollout, the browser is the universal application.

(iii) **Downloadable Application**

(d) A development of recent years has been the downloadable that offer bank customers a selection of banking services through a single application delivered by the bank to the customer's mobile phone. The applications is also often Java or brew-based, but can also be based on a STK (SIM toolkit) which is used by operators to provide added value data applications. In addition, mobile applications enable a very secure environment.

(iv) **IVR**

(e) IVR is a simple mode of communication which can be accessed through any of the handsets. India having lower level of literacy, especially digital literacy, IVR can be used to provide mobile banking service to consumers. This method is also secure mode of communication due to DTMF (Dual-tone multi-frequency signaling) process.

(f) Service providers will be using one or combination of these communication methods to provide mobile services. More complex transactions may use downloadable applications but simple services like balance enquiry can be provided using IVR or SMS.

(g) RBI current guidelines on Mobile payments provide that customers having mobile phones of any network operator should be in a position to request for service. Restricting communication method to only few communication modes may exclude certain subscribers. For example USSD and STK are only GSM standards. **Therefore, it is suggested that the following forms of communications be adopted to provide Mobile Banking services:**

1. SMS
2. USSD
3. IVR
4. STK
5. Java or brew based or any other downloadable application
6. WAP

2. What in your view would be appropriate time frames for delivery of messages and responses with respect to the method(s) suggested by you? What parameters need to be defined to ensure timely delivery of information to support financial transactions using mobile?

- (a) We suggest TRAI need not intervene and mandate quality of service standards as operators have already entered into agreement to provide service. These should be continued to be governed as per SLAs. The mobile banking is already growing at a phenomenal growth especially push mobile banking transaction. The same trend is also expected for pull mobile banking transactions. Service providers are already providing enough capacity for financial transactions and thus quality of service does not seem to be an inhibiting factor for mobile banking adoption and growth. The mobile banking is at infancy stage and high costs in terms of mandated quality of service may impede service growth. **Therefore, quality of service and setting up of infrastructure for priority delivery of financial transaction messages may not be mandated.**
- (b) In case the Authority believes that intervention is imminent then the following parameters can be used to study the quality of service for financial transactions using mobile:
 - (i) End to end Transaction time (Average Transaction time on monthly basis)
 - (ii) Transaction Success Ratio (on Monthly basis)

3. In the method suggested by you would it be possible to prioritize the transaction messages over other messages on the network? If yes what would be the cost implications? Please also reply this with reference to SMS as means for financial transactions.

- (a) Dedicated SMPP accounts in SMSCs can be created “pull SMSs” for financial transactions which can reduce average delivery time of SMSs.
- (b) USSD does not have store-and-forward capability, as is typical of other short-message protocols like SMS. It is associated with real-time or instant messaging services and therefore the issue is not relevant for USSD service.
- (c) Dedicated IVR can be set up for quick response to the user but it will definitely drive up the cost based.
- (d) User can have a quick access to JAVA / WAP servers due to recently deployed high speed CDMA networks and 3G network where higher data bandwidth is available.

- (e) We suggest TRAI need not intervene and mandate setting up of separate infrastructure for prioritizing banking transactions as that will increase cost and may impede mobile banking growth. Service providers are already providing enough capacity for financial transactions and thus quality of service does not seem to be an inhibiting factor for mobile banking adoption and growth. Service providers would expand capacities with large adoption of mobile banking services so that subscribers get good quality service. The mobile banking is at infancy stage and high costs in terms of mandated quality of service may impede service growth. **Therefore, quality of service and setting up of infrastructure for priority delivery of financial transaction messages may not be mandated.**

4. What do you think would be the security requirement using the method proposed by you for the five basic transactions ie no-frills account opening, cash in, cash out, checking balance, and money transfer?

- (a) Security is one of the critical issues for successful adoption of mobile banking. A frame work for delivery of basic financial services using mobile phones has been finalized by an Inter Ministerial Group (IMG) and approved by the Government in April-2010. The frame work envisages creation of “Mobile-linked No-frills Accounts” by the banks, which will have various transaction limits and can be operated using a mobile phone.

Opening of Account Balance

- (b) A customer who has a mobile phone will be able to open a mobile linked no-frills account. For opening the mobile linked no-frills account, a customer can either visit the Business Correspondent (BC) or sub-agent of BC or directly visit the bank branch.

M-PIN based Transactions

- (c) Once the mobile linked no-frills account is opened by the Bank, a mobile based PIN (called m-PIN) will be provided to the customer using which he/she can directly make financial transactions like cash in, cash out, checking balance and money transfer using his/her mobile phone. It shall be possible for a customer to perform the transactions pertaining to ‘Money Transfer’ and ‘Balance Enquiry’ directly through his/her mobile phone. However for other transactions Business like cash in and cash out the assistance of a Business correspondent would be required.

M-PIN to be transmitted in an encrypted manner

- (d) m-PIN should be stored or transmitted in an encrypted manner in the SIM/UIM and over the network or the system. Encryption of m-PIN can be end-to-end or link-by-link i.e., mobile network link and subsequent data link. As an additional security no financial transaction process will require inputting the customer's m-PIN on POS device of Business Correspondent or any mobile other than his/her own registered mobile.

Transactions to be allowed only after validation of m-PIN

- (e) All transactions should be carried out only after authentication of the mobile number and m-PIN associated with it. Mobile number should also be authenticated based on Calling Line Identification (CLI) received from the mobile network. In case of WAP/Mobile Internet CLI

Transactions using SMS

- (f) SMS banking is not as secure as other banking channels. The default data format for SMS messages is in plaintext. The only encryption involved during transmission is the encryption between the base transceiver station and the mobile station. End-to-end encryption is currently not available. The encryption algorithm used is A5 which is proven to be vulnerable. Therefore a more secure algorithm is needed.
- (g) The convenience of executing simple transactions and sending out information on the mobile phone using SMS is often overriding the security concerns. Therefore it is not intended to be used for very high-risk transactions. RBI has permitted SMS for financial transactions upto Rs 1000.

Transactions Using WAP and WEB

- (h) It is suggested that for channels such as WAP and WEB which do not contain the phone number as identity, a separate login ID and password should be provided. RBI has existing guidelines that this ID and password should be different from internet banking password.

RBI has already provided standards for transaction security which are attached as Annexure I. These are sufficient to meet the security requirement and we suggest additional security standards are not required for mobile banking transactions

5. What would be measurable QoS parameters for such networks? Please specify both network and customer centric parameters.

(a) The quality of service for pull mobile transactions can be measured using following parameters:

- (i) End to end Transaction time
- (ii) Transaction Success Ratio

Measurable Metrics for above Parameter as below:

(b) We have submitted above that TRAI need not intervene and mandate quality of service standards as operators have already entered into agreement to provide service as per SLAs. In case Authority believes that the market is not functioning well and there is need to specify minimum standards, then it is suggested that following standards may be specified.

Network Centric Parameters

Access Methods	Time[End to End]
SMS/STK	After complete inputs given by user, to receive response within <60 sec
USSD	
IVR	
WAP	
JAVA Client	

Customer Centric Parameters

(c) Mobile banking will involve multi-parties in the transaction including service provider, banks etc. During all these stages the transaction information will flow from one partner to other partner within the ecosystem. Therefore there should be a single partner answerable to his queries.

(d) A detailed SLA should be decided between partners to address customer queries.

6. Please list any other issue that you think is important and your comment thereon to finalise QoS parameters for facilitating financial transactions on mobile network

NIL