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

At MOMO's Bangalore chapter we feel that all channels for mobile banking should be kept open and be allowed to evolve. There are merits and challenges in all these channels as we currently see it. We feel SMS is the real mass solution if the issue of security is addressed. To ensure better protection of the user we recommend that a security guidelines similar to ISO 27001 or PCI-DSS be devised in consultation with bodies like by TRAI, IRBDT, MPFI and leading Banking IT security players for securing channels that do not provide end-to end protection. The channels could be categorized as below.

End to end secure channels	Needs security recommendations to be considered as a fool proof channel
STK	SMS
WAP	USSD
Applications – Java/ Native	IVR

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?

Most WAP/Application based channels should be addressing this already since the internet banking guidelines could be applied effectively here. For IVR too the current policies governing phone banking could be applied but it's SMS that requires special directions on the delivery process as well as the timelines. The response feedback is also critical in ensuring the success of this initiative.   We recommend a time gap between 3 mins to 5 mins for the consumer to get a response on the action initiated.

The crux is in maintaining this service levels even during peak network loads like Diwali, New Year, other festivals etc. some thoughts were:

- Exploring the feasibility of a dedicated SMSC, dedicated routes between MSCs and SMSCs
- Offer specific/dedicated USSD short-code to proactively fetch receipt(s), to address payment-receipt message loss
- Mandate use "direct-delivery" of SMS's instead of SMSC's store-n-forward.

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- Use Network-Initiated USSD (available in MAP-Ph2+ networks), instead of SMS for notification of payment receipt.

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.

As stated earlier, we restrain from recommending a specific model, since we believe it best to keep all the channels open and secure so that it evolves further. The key will be in identifying the real beneficiary and distributing costs accordingly for SMS based transactions to work. Premium SMS charges could inhibit the consumer and for banks to absorb the cost, it should be in similar lines to that of internet banking.

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?

We recommend that the security is devised not just keeping no-frills banking in mind. As in our observation to the first question, we feel that a security guidelines similar to ISO 27001 or PCI-DSS be devised in consultation with bodies like by TRAI, IRBDT, MPFI and leading Banking IT security players for securing channels that do not provide end-to end protection.

In case of SMS the challenges are that the MSC / SGSN (and possibly BTS/RNC as well) logs may have SMS content in clear-text - Possibility of insider misuse. There is also another possibility of such information being available at SMSC or SMS-GW and SMSC offering IP-connectivity to SMS-GW.

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

We feel describing the QoS requirements for Prioritization of SMS as critical for this.

Objectives could be:

- Ensure that during seasonal peaks (Diwali, Holi, New Years eve etc.) ordinary SMS's load doesn't impact mBanking SMS delivery / latency.
- Guarantee that the store-n-forward nature of SMS's doesn't impact response-time.

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- Ensure that message-loss is prevented and payment receipt notifications are definitely delivered

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?

Exploring the option used by operators prepaid e-topup services, as their QoS (availability, message: MO/MT and delivery-report latency etc.) is a good option. We had limited info on this during the discussion. We would keep this as an open ended query.