

Can you carry your money in
your mobile?

M-Banking & M-Payments:
The Next Frontier



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M-Banking & M-Payments: An Introduction



The Indian telecom industry has shown high growth in the mobile business, enrolling over 870 million¹ subscribers, reaching not just urban, but almost 40% of rural India. This has enabled provision of communication, entertainment & information based services to the last mile without the need of in-person service delivery. Innovative mobile applications have offered an opportunity even to sectors other than telecom (e.g. M- governance, M-commerce, M-health) to solve challenges of reach, transparency and provision of good quality services at low costs.

The Indian Financial services sector has recognized the opportunity to ride on the telecom wave not only to achieve higher financial inclusion, but also improve service quality for the financially included. However, the stakeholders – financial services players, regulators, telecom and technology players – have not yet invented any truly successful business model and technology solution to provide financial services over mobile devices. While, the opportunity of mobile based financial services – broadly termed M-Banking, M-wallet and M-Payments ('Mobile Money') – is recognized, stakeholders are still calibrating the consumer proposition, service delivery mechanism and regulatory environment to find the sweet spot.

¹ TRAI Report, May 2013
– 870.20 million wireless subscribers with 40.83% teledensity in rural India, and overall teledensity of 70.90% in May 2013

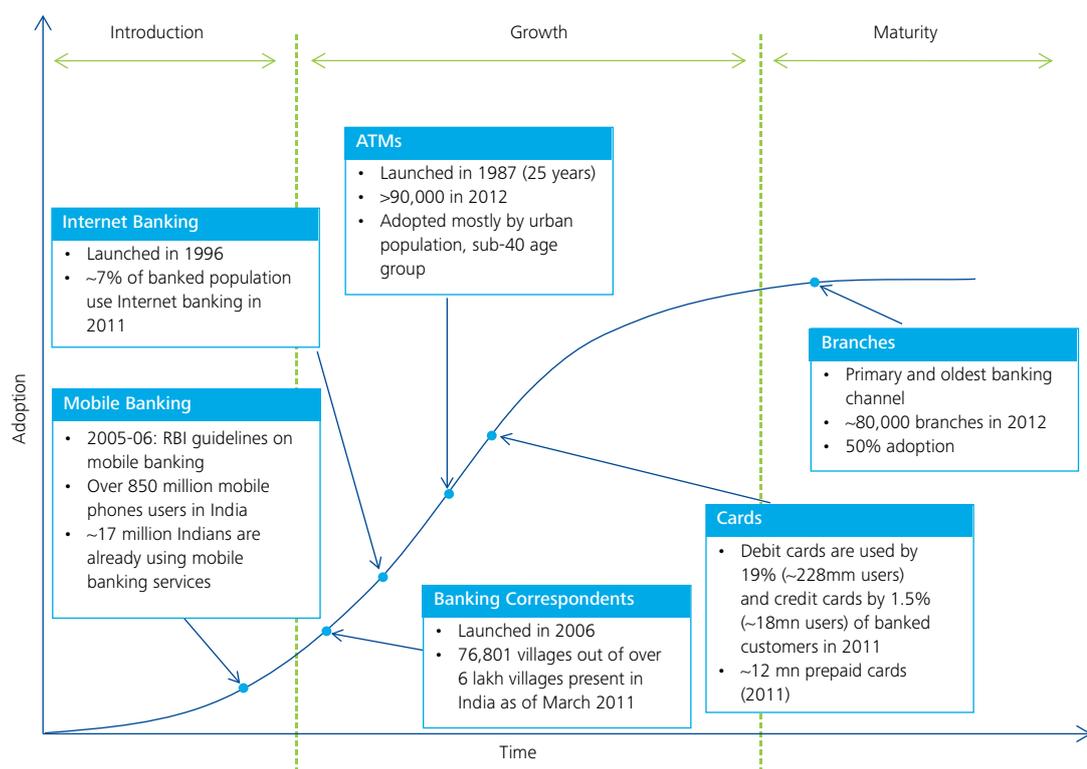
Scaling the maturity curve

Can mobile banking and payments scale the maturity curve to become the first inclusive banking and payment delivery channel for India?

41%² of India's households are unbanked and approximately 67%³ of all retail transactions are still being conducted in cash. In contrast, mobile phone subscribers have reached over 870 million in 2012 (from 165 million in 2007) resulting in mobile penetration of ~73%¹. Mobiles could therefore provide a good platform to offer financial inclusion in terms of banking or payment services. Compared to other banking delivery channels, mobile phone has an advantage in

terms of reach and cost to serve, though it may not yet score high on ease of use. Mobile phones are already being used by ~17million⁴ Indians for banking purpose and its usage for banking and payment transactions is on the rise. Although currently, the banking services available on mobile phones are fairly limited, there is tremendous potential to offer many more services on this channel for both the financially excluded, as well as, the banked population. Increasing the number of services offered with a focus on customer convenience, comfort and security may propel the growth of this banking and payments channel.

Maturity of Banking and Payment Channels



2 RBI, http://rbi.org.in/scripts/BS_SpeechesView.aspx?ld=726

3 RBI, Deloitte Research, <http://www.assocharm.org/arb/study-on-mobile-payments.pdf>

4 http://www.business-standard.com/article/finance/1-72-cr-customers-using-mobile-banking-facilities-112121400624_1.html

Driving Financial Inclusion

What unbanked and under-banked customers can be offered on Mobile channel:

- **Money management and cash flow management solutions** - There is a need for convenient savings-deposit products as a large section of the population does not have access to formal banking channels.
- **Remittance solutions** - A large section of the migrant population in Indian cities still incur disproportionate charges while remitting money, mostly use unsafe means (nearly 60% remittances⁵ are through informal hawala channels) and are looking for safe, convenient and low cost means of sending money home.
- **Credit** - About 20% of the unbanked avail of credit, primarily from local lenders (up to 60%)⁶. Convenient access to loan assessment and disbursement facilities in a cost effective manner can address the credit needs of the under-banked population.
- **Bill Payments** - With over 250 billion bill pay transactions⁷, and less than 1% of these through electronic means, there is a large potential for mobile based bill payments, especially for the under-banked who do not have access to banking or other bill pay vendors' services.
- **Receipt of Subsidies** - Schemes such as the NREGA, Disaster Relief, Subsidies, Ration cards cater to a large segment of the under-banked population for distribution of funds and can be distributed more efficiently through a mobile money mechanism.
- **Business payments / collections (especially for MSMEs)** - For small and medium enterprises, cash continues to be the dominant method for payment transactions to their suppliers. There is a potential for offering a convenient mobile based payment service for such enterprises and improving the efficiency of payment transactions.

One can expect that low income households would be interested in savings and loan instruments, but distance from a bank branch, inability to cash out, and lack of awareness maybe deterring them from using formal banking.

5 NABARD-GTZ Technical Study 2009

6 http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1674328

7 Consumer Finance: Euromonitor from trade sources/national statistics - 2011

An evolving channel for the banked

While the mobile phone can be used to offer certain basic financial services using SMS, USSD or less data intensive technology on lower end devices as well, in case of the financially included population, the mobile phone could be leveraged as an advanced delivery channel which offers high convenience and speed

riding on new technological developments in mobile technologies (e.g. better data connectivity using 3G and 4G, increase in high-end devices such as tablets and smart phones, increase in features such as location based systems and customized user interface).

What existing bank customers can be offered on the Mobile channel:

- **Customized mobile banking solutions** - Customizable and convenient (e.g. available on the go, ensuring fewer clicks) mobile banking solutions have potential to provide improvements over current laptop/desktop based internet banking experience. Already almost 45% of internet users access internet through their mobile phones⁸ and mobile phone can enable continuous and convenient access to banking services for these users.
- **Location based payment services** - In developed countries such as the US, 74%⁹ of smartphone owners use their phone to get real-time location-based information, with increasing effectiveness on-the-go (e.g. effective mobile based price discovery and instant payments, location based real time discounts on mobile payments).
- **Real time, always on person to person payments** - Mobile phone has potential to provide electronic P2P payments which is real time and easy to use. An example of such a service is IMPS from NPCI which aspires to provide easy-to-use, on-the-go payments using simple mobile interface.
- **Integrated mobile based retail payments and loyalty programs** - Mobile based applications allow smaller banked merchants to receive payments using just mobile phones (e.g. Square in USA and Canada which has a network of over 2 million merchants, offers device which connect to mobile phones and enable credit / debit card swipes thus using mobile devices as PoS). The mobile application can also allow small merchants to maintain loyalty programs and enable reward computation for their customers.
- **Multiple wallets on mobile** - Products which reduce the need for carrying multiple cards can be useful for the modern multi-carded consumer. Mobiles offer the unique advantage of having multiple payment instruments stored on a single device, enabled for NFC based transactions. (E.g. NFC based Google Wallet).
- **Utility payments** - On an average Indian household across 10 cities in India pay almost 50 bills a year. Enabling bill payment anytime, anywhere with features like reminders, 'pay-by-texting' and aggregated payments could provide high convenience to the bill payers.
- **Investment Management** - Banked customers would look at easy-to-use mobile applications for monitoring and managing their portfolio of investments across various instruments as a great convenience.

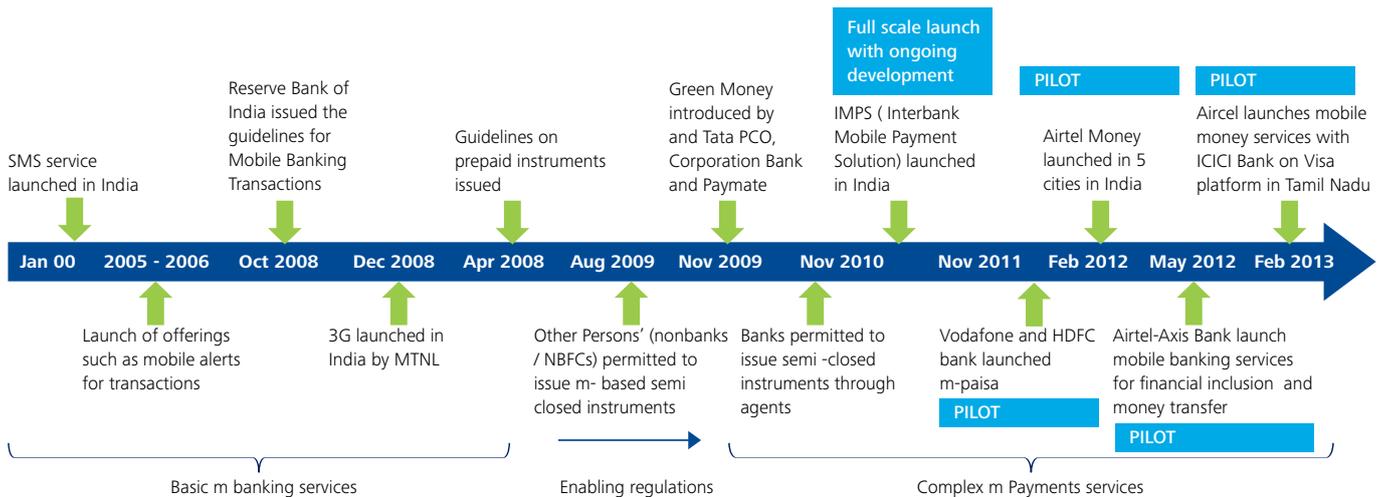
For existing bank customers, the potential to use the mobile channel for better services and new products is currently underexploited in India and has a great future potential.

8 Statcounter, ThenExtWeb, <http://thenextweb.com/in/2012/05/03/mobile-internet-to-exceed-pc-access-in-india-by-the-end-of-this-year/>, Deloitte Analysis

9 Pew Research, <http://pewinternet.org/Reports/2012/Location-based-services.aspx>

The journey so far

M-Banking in India have evolved from basic services such as alerts to complex ones such as money transfer



Source: Secondary Research

Over the last decade, M-Banking and M-Payments in India have evolved from basic services such as information alerts to complex ones such as money transfer, riding on regulatory initiatives, as well as, initiatives from banks and telecom players.

Various models for M-Banking & M-Payment currently prevailing in the Indian market are:

- Account Based Model:** This requires a bank account which can be operated using a mobile based application and there are fewer restrictions (e.g. inter-bank transfers, cash outs are allowed), however specific restrictions such as transaction limits may apply. Applications can be pre-installed on the SIM card (SIM Tool Kit- STK) or handset or can be downloaded using SMS or data (e.g. mChek pre-loaded on Airtel SIM). This model can be used to provide all internet banking services, as well as, specific payment services linked to a bank account. Specific bank applications such as ICICI's iMobile or IMPS (Immediate Payment Service, erstwhile Interbank Mobile Payment Service) which offer an interoperable platform for payment related services on the mobile phone are other examples of account based models.
- Prepaid Wallet:** This has so far been offered primarily by telecom companies (as a licensed prepaid instrument issuer) through a semi-closed loop instrument operated using mobile phones (e.g. Takatak Money from FINO, Airtel Money Power

and Express accounts). In this model, currently no cash-out is allowed and a maximum balance of INR 50,000 with full KYC and up to INR 10,000 for utility payments with no KYC is premitted. Because of such restrictions this model has mainly found usage for utility bill payments. This is typically made available through modes like USSD, SMS or Apps (data access) or an agent assisted model.

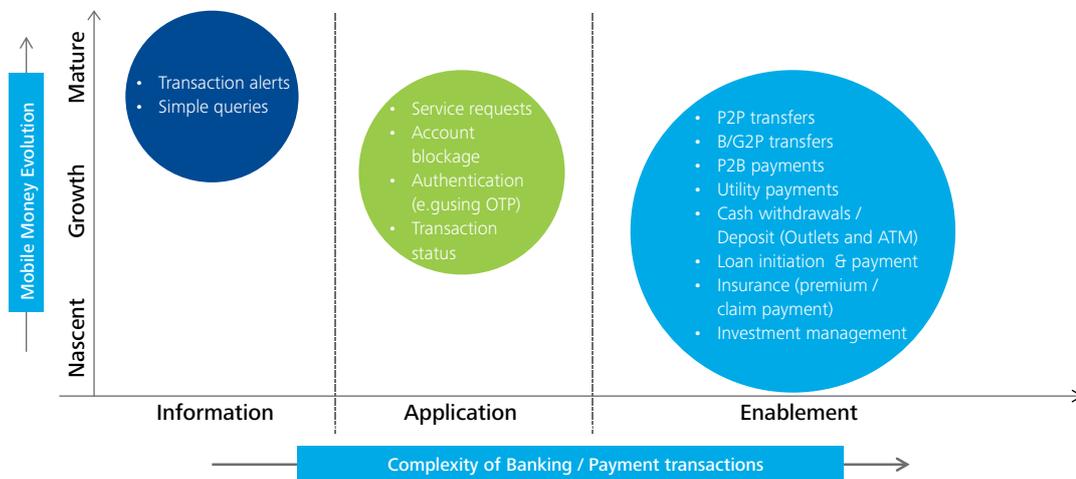
- No Frill Account or Open Loop Prepaid Wallet:** Organizations with large distribution networks have allied with banks to offer open loop prepaid services through mobile devices (e.g. Super account of Airtel Money). Under this service, a maximum account balance of INR 50,000 is allowed and the bank is accountable for customer KYC. Cash-out is allowed at enrolled agent outlets (which act as Business Correspondents of the partner bank). This service is based on a more open architecture and offers transactions across banks, merchants and billers through use of payment processors like Visa and MasterCard.

All three models discussed above have evolved given the regulatory requirements in India, and currently bank involvement is required for telecom players to offer services beyond closed ecosystem payments. While, this is often perceived as a hindering factor, it also underscores the importance of acquiring the right skills in terms of financial-services capabilities for players in this space.

In terms of types of services, pure Information services such as transaction alerts are in a fairly mature state in India. Other services such as authentication using One-Time-Passwords, Transaction Status enquiries which are Application oriented (which can supplement existing

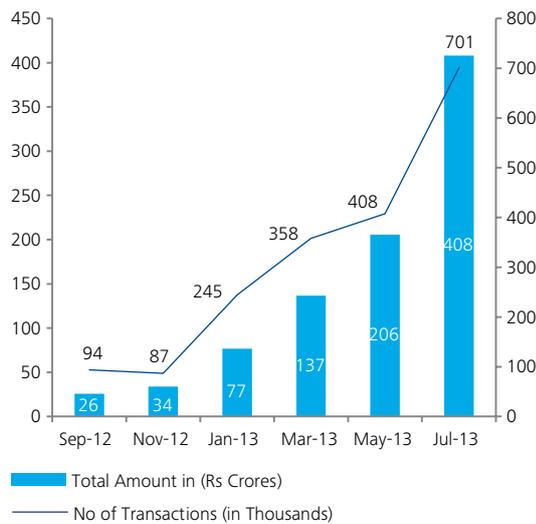
services) are on the growth trajectory. However, services which can act as enablers (replacing the physical service equivalent) especially for the unbanked and the under-banked, e.g. savings and insurance products, are still in a very nascent stage.

Maturity of Mobile Money services



IMPS: A Case Study

Introduction of IMPS has resulted in increase in mobile based transactions in India, however there is significant room for growth



Key Observations

- Immediate Payment Service (IMPS) was launched in India in November 2010. This facility is provided by National Payments Corporation of India (NPCI) through its existing national financial switch (NFS)
- IMPS offers an instant, 24X7, interbank electronic funds transfer service through mobile phones. It facilitates customers to use mobile instruments as a channel for accessing their bank accounts and do interbank fund transfers in a secured manner.
- Transaction value through IMPS has increased rapidly from ~Rs. 26 crores in September 2012 to ~Rs. 701 crores in July 2013. The number of transactions have also increased over 7 times from 93,715 per month in September 2012 to ~701,110 per month in July 2013
- NPCI has recently launched person to a/c and merchant transfer, as well as, USSD based (National Unified USSD Platform) based transfers on MTNL and BSNL

Banks are currently looking for use cases for IMPS

Type of service	Banks live on IMPS (as of July 2013)
Person to person transfer	57
Person to a/c transfer	43
Person to merchant transfer	28
NUUP based transfer	28

Customer adoption challenges

While M-Banking and M-Payments services are expected to provide greater convenience at lower costs to retail customers, retail merchants and government agencies, adoption is currently low. Some of the key barriers to adoption of M-Banking and M-Payments by customers are:

- **Lack of awareness of potential use of mobile phones:** Mobile phones have traditionally been looked at as a voice and SMS devices. Even amongst the banked and more upwardly mobile population, while smartphone adoption is increasing, lack of easy to use applications restrict usage of phone for banking and payment transactions.
- **Lack of standardized and easy to use services:** Currently, different service providers use different channels, different means of authentication, different interfaces and provide limited support for local and vernacular languages. Certain services require KYC documents which many potential unbanked and under-banked users do not have. These factors make it difficult for users to adopt, easily understand and start using the mobile money services.
- **Lack of trust in digital money:** Most people today still prefer to deal in cash since they have concerns about security, privacy, speed, as well as, transparency of usage charges when using digital money. For all mobile based transactions, intimation and confirmation of transactions may also be required through channels other than mobile (e.g. paper statements, e-mail).
- **Lack of interoperability across service providers and other usage opportunities:** Inability to transfer money across different mobile wallets and inability to use mobile money for various everyday transactions (e.g. making small value payments or purchases such as transport or food needs) is also a inhibiting factor in widespread adoption of mobile money.
- **Inability to withdraw cash:** Once money is loaded on or received through mobile devices, limited facilities exist which could enable cash withdrawal. Even on instruments such as open loop prepaid instruments or account based wallets or remittance products (bank account to cash) where cash out is allowed, the distribution reach is limited and there is a limit on cash withdrawal amounts.



Benefits for key stakeholders

Other than the obvious advantages of meeting the financial inclusion goals of regulators, mobile payment services can offer significant business potential and cost optimization opportunities for all the stakeholders – banks, telecom players, software players/ application developers, service providers or merchants and payment intermediaries.

- **Low cost:** M-banking costs 2% of branch banking¹⁰ offering opportunity to banks to optimize operational costs.
- **Increased reach:** Leading telcos now have over 1.5 million outlets, including in remote areas which provide opportunity to offer banking and payment services, thus increase their service portfolio and increase average revenue per acquired customer.

- **Increased revenues:** Banks could offer mobile payment services to their banking customers and increase share of revenue from existing customers. For telecom players, currently VAS share of ARPU is at ~15%, still lower than global average of ~23% and expected to grow at a ~30% CAGR¹¹ where mobile money services can play a significant role.
- **Rich consumer data analytics:** Reaching large sections of society which are currently excluded from organized banking / payment services should enable service providers to access rich customer behavior data (e.g. savings, purchasing patterns, credit history etc). This intelligence can enable providers to refine their product offerings, marketing initiatives, promotions, product bundling and increase their share of customer wallet.



Challenges for key stakeholders



Commercial success of mobile money requires that multiple players – regulators, government, technology players, service providers, banks, telecom players and handset manufacturers – work in alignment, a challenge in itself for a nascent service.

The challenges faced by stakeholders in propagating mobile money services span across many aspects of delivery value chain:

- **Technology:**
 - Development of easy to use applications can be a challenging proposition considering multiple devices, operating systems and fast evolving mobile standards.
 - Speed of transactions can be a problem where latency has to be minimized for a better user experience.
 - Acquiring merchants and their integration to payment platform at a large scale can also be a significant challenge.
 - Security through common channels e.g. USSD needs to be addressed as any breaches will undermine customer confidence and push back adoption dramatically.
- **Operations:**
 - Strict KYC norms may pose challenges and so may cash management for outlets offering cash deposit and withdrawal at such a large scale.
 - Interoperability across mobile service providers and banks is a big challenge.
 - Issues of theft of mobile handsets, migration across banks / telecom providers also need to be addressed.
- **Business case:**

Building a business case for launch and proliferation of M-Banking and M-Payment services will be important:

 - Each player may have multiple partners who need to get a share of revenues and profits commensurate with their investments.– Since a lot of the new customers will be from the unbanked and under-banked population, many of the services will be low margin, which will make it imperative to control costs and innovate.
- **Customer Dynamics:**
 - Literacy levels and presence of multiple local languages are other factors that stakeholders will have to address.
 - Lack of trust in digital money will need to be addressed through adequate marketing by telecom operators, banks, regulators, and industry associations.

The way forward

Enabling a successful experience for mobile money will require each provider to contribute –pre-installing mobile apps by technology providers, selectively easing KYC norms by regulators, enabling increased interoperability by providers, promoting acceptance amongst merchant establishments and subsidizing certain types of services by the government.

Regulatory agencies are well placed to play a critical role in pushing Mobile Money from the fringes to the mainstream. Since it straddles the financial and telecom sectors, a cohesive effort involving RBI, DoT and TRAI is required to bring banks and telecom players together and work in synchronization. Some of the key action steps for the consideration of various stakeholders are:

- **A forum involving regulators and players for greater coordination**

A common body (e.g. committee or forum) comprising banking and telecom regulators, banks, telecom players and application developers needs to be setup to enable joint visioning, planning and implementation of Mobile money strategy for India. This body may be responsible for charting a roadmap, suggesting policies and strategies for improving supply (e.g. business models, technologies, services, innovation) and usage (e.g. customer awareness, use cases) of mobile money. This body may work towards enabling greater interoperability (of user transactions and interfaces) across telecom players and banks and launch solutions which are offered uniformly by different telcos and banks. This body may recommend liberalized policies to the government and encourage incubators to setup ventures to develop innovative technology solutions for various customer segments.

- **Revenue models that benefit all stakeholders**

A successful mobile money solution will require all stakeholders – banks, telco players, software providers – to commit resources for research, development and marketing the solutions. Stakeholders need to jointly work out revenue sharing models so that each entity finds commensurate commercial benefits for their investments. Fee structures for providing mobile based financial transactions may be appropriately designed to benefit all the stakeholders in the value chain, while making them affordable to customers.

- **Developing a customer acquisition engine**

A customer acquisition strategy which leverages the strengths of banks and telco may be put in place. Telcos may leverage their large subscriber base to propagate mobile money solutions, while banks may leverage their knowledge of offering financial products and risk management to increase customer acquisition. Campaigns to improve consumer trust, confidence and highlight convenience may be undertaken to achieve scale and hence financial inclusion.

- **Designing simplified processes for mobile money**

Defining simplified mobile money specific processes can facilitate high quality of service and allow interoperability. While KYC is rightly a key concern for the regulators, its rigor needs to be balanced with effective customer servicing. Processes across customer acquisition and servicing lifecycle (e.g. KYC, cash management, and query resolution) may be simplified for all servicing channels – bank branch, telco retail outlet or the mobile device itself – to encourage greater channel participation. Periodic reviews of KYC requirements for various transaction types and values, enablement of UIDAI based e-KYC are some of the measures that can be examined to implement simplified but effective KYC processes. Technology advances can also be used to simplify customer processes post registration (e.g. Using UIDAI/ bio-metric data for authentication, seamless withdrawal, transfer or usage of money using OTP or missed call based authentication, storage of multiple mobile wallets in a single mobile based virtual wallet etc.).

- **Devising adequate security and quality of service standards**

Defining robust standards of security and high quality of service including encryption protocols to be adhered to and uptime to be provided, may be important as various private players from banks to telcos to other retail and technology players, enter this space, and attempt to reach a large segment of society. Assurance against money fraud is one of the key issues that need to be looked into by the regulators. Common standards to implement anti-money laundering, and ensure transparency and security to the customer may be an enabler to propel the use of mobile money.

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