

P E R S P E C T I V E

Achieving Financial Inclusion by  
Leveraging Mobile Technology

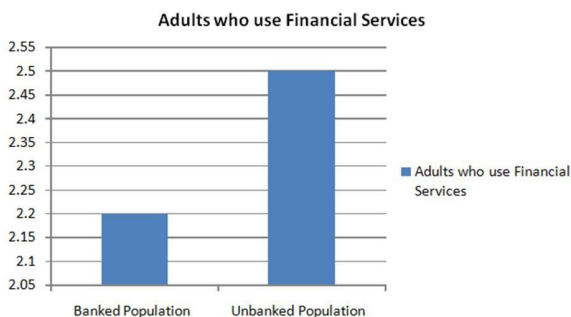


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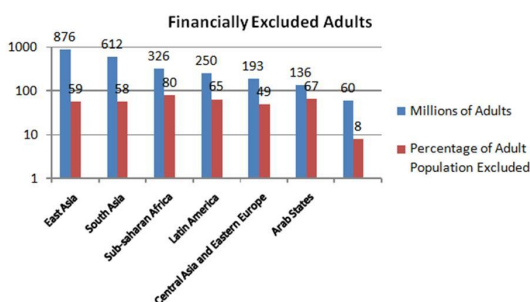
The unbanked is estimated to exceed 2 billion people worldwide and this isn't a problem limited to the emerging economies. Financial exclusion looms large in several growing economies across the world and not only reflects but also contributes to the stark socio - economic divide that exists in these economies. In most countries, financial exclusion is a phenomenon which is restricted to rural areas where accessibility is limited and the population density is substantially lower. However, recently the phenomenon has also been observed in urban areas where some segment of the populace remains financially excluded in spite of the existence of bank branches, due to constraints such as access timings, and income potential.

Nearly 2.2 billion people, i.e. 62 percent of the population, living in Asia, Africa, Latin America and the Middle East are financially excluded. In China and India, only about a third of the population participates in the formal banking sector. In Africa the number is just 25 percent. Africa as a whole has 230 million unbanked households.

For banks, this is a massive opportunity to serve a new demographic and tap into the previously untouched wallets of the unbanked. Traditional methods of serving the unbanked - ATMs and the banking correspondent model - have achieved tepid results. It is becoming increasingly clear that mobile is the way forward. This article highlights mobile's role in banking the unbanked, examines a few models that have worked, breaks down the challenges mobile presents, and



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provides a sneak peek at what the future may hold for mobility in the unbanked space.

### Technology Driven Financial Inclusion

The use of technology has been the obvious choice to drive the financial inclusion programs of banks, as the key objectives of such a program is to reduce the cost of operations without compromising on customer experience and security.

Over the years, there have been several choices of technology solutions, as listed below:

- **ATM-based solution** – The strategy is to install ATMs in areas accessible by the unbanked populace. However, there are several issues around deployment of ATMs, such as:
  - Cost of maintenance of the ATM such as refilling cash, ATM maintenance and ATM security is high, given the distribution
  - ATMs solve the problem of time of access, but the cost of the ATM installations works against a large scale deployment
  - The customer segment is not very digitally savvy, and remembering PIN numbers for ATM access is a hassle. This has a negative impact on customer experience and also increases the cost of customer maintenance with the additional load on PIN management
  - Banks have sampled the use of biometric ATMs which are installed in vehicles. These mobile biometric ATMs were successful in solving issues of reach and security but the cost of maintenance remained quite high and hence the model was not very successful
- **Banking correspondent model** – Regulation changes enabled banks to leverage a partner network to service customers. In this model, banks tie-up with business correspondents in various areas and these correspondents service customers.

### Emergence of Mobile

In the correspondent model of financial inclusion, there are two modes of operation:

- **Location bound** - In this model, the delivery channel has a fixed location and the customer needs to visit this location to avail services. Branches, kiosks, ATMs are examples of location bound delivery channels

- **Remote locations** - In this model, banking services are offered at the customer location. These are primarily self service and limited to “doorstep” banking services in the agent driven mode

While banks were experimenting with ways of servicing customers, the mobile market was burgeoning - achieving unprecedented penetration across all customer segments. In India alone the total number of mobile subscribers by March 31, 2008 was 261.08 million, as against 2007’s 165.09 million (an increase of 58.14 percent). This figure shows that in just three years, the number of mobile subscribers has grown over 4.5 times. India is adding more subscribers per month than any other country. This trend is not isolated to India. It is a reality in almost all developing economies in Africa, Latin America, and Asia.

Banks soon realized the potential of leveraging on this reach. This led to the emergence of Financial Inclusion programs powered by mobile phones. The mobile-led financial inclusion has different flavors based on the service offer mode. The primary ones are highlighted below:

- **Agent/ correspondent mobile as the delivery device** - In this mode of offering, the customer gets assisted service for transactions and the agent services the customer using a mobile device. Security was achieved through the innovative use of Bluetooth enabled biometric scanners, innovative modifications to pre-generated One-time passwords using a combination of a PIN grid and static PIN. This model is very popular in many parts of Asia and Africa
- **Customer mobile as the identity element** - In this mode of offering, the customer’s bank account would be loaded into the customer mobile phone. Customers could visit business correspondents or other delivery channels and follow simple procedures on their mobile phone to process transactions. These simple procedures used ubiquitous technology such as SMS and USSD and did not introduce complexities such as device limitations and hardware footprint on customer mobile. This model is quite popular in Africa

### Implementations in the Market

There have been several successful implementations of mobile-led financial inclusion.

### m-Pesa model in Africa

The m-Pesa model was a mobile-based money transfer service launched in Africa in a partnership between Vodafone and Safaricom. In this model, customers can use a wallet on their mobile phone to make payments, transfer money and redeem the cash. The servicing of these customers is through the network of airtime resellers.

The m-Pesa model offers several features such as:

- Withdraw and deposit cash
- Utility bill payment
- Money transfer

The m-Pesa model is quite popular in many countries of Africa, such as Kenya, Tanzania, South Africa. A recent study also suggests that more than 10 percent of Kenya's GDP now pass through the mobile channel.

### Community banking in Standard Bank

The community banking division of Standard Bank leverages MTNs MobileMoney solution. This product allows the client account to be linked to a SIM card. The customers can then transact on these accounts through an agent or a community banker who is a partner of Standard Bank. This solution allows customers to perform transactions such as:

- Purchase transactions
- Money transfers
- Account Enquiries

These transactions can be performed directly on the customer mobile phone or through the agent mobile phone. The customer money is reflected as information on a wallet on the SIM card which can then be used to perform the various transactions.

### Grameen village phone in Bangladesh

In Bangladesh, the Grameen Foundation launched its much acclaimed Microfinance program. The key objective of the program was to provide wide-spread access to loans to the unbanked women of Bangladesh. In this model, the beneficiary can procure a mobile phone from Grameen Phone with some pre-paid credit. The mobile phone can then be a source of income for the beneficiary as people in the village can use this phone to make telephone calls.

## Current Trends

The mobile led Financial Inclusion channels offer various facilities to meet the requirements of the unbanked and under-banked segment. The offerings can be described based on mode of offering, as described in Table 1.

Mode of Offering	Correspondent Model	Self Service
Technology	Application installed on mobile phone Mobile web browser	SMS USSD
Facilities	Customer registration Cash transactions Account inquiries Money transfers Requests Bill payment Mobile airtime top-up	Account inquiries Bill payment Mobile airtime top-up Money transfers Requests

Table 1: Examining mobile offerings to the unbanked

## Challenges

The penetration of the mobile based delivery channel, while very popular, has its own share of issues which are affecting its growth. These issues primarily affect the security paradigm, customer experience, and data sanity of the financial transactions.

The key issues are as mentioned below:

- Biometric authentication is currently available in a limited set of mobile phones. This poses an issue, as many financial inclusion programs rely on biometric authentication as the primary mode of customer authentication
- Mobile phones are good for limited data entry. However, complex transactions such as customer registration, service requests cannot be offered very easily. This limits the facilities which can be provided
- The user experience in case of self service can be an issue, as mobile phones provide a very simplistic user interface. Also, many of the self service models are not very intuitive and require customer education
- The SMS mode of operation, the most widely used mode of communication in mobile led financial inclusion, is not very secure and this poses a new challenge to be overcome

## Trends which will drive the future

Mobile-led financial inclusion represents a huge growth opportunity as several developing economies have experienced unprecedented mobile penetration. The financial inclusion programs by banks have thus far not been able to catch pace with mobile penetration. A merger of the two represents the next big mode of reaching out to the unbanked to tap into a vast pool of 'dormant dollars'.

This trend will be driven by several innovative offerings and evolutions on the existing platform.

## Open Standard Architecture

The mobile landscape is populated with a broad variety of mobile devices - this poses a major concern for easy adoption. It is expected that an open standard architecture will emerge which will provide a common platform to power financial inclusion programs. This architecture should be mobile device agnostic and easy to use while not compromising the security of these financial transactions. In India, IDRBT-Institute for Development and Research in Banking has published guidelines for technology standards to be adopted for the Financial Inclusion solutions.

## Regulation

In many countries, regulatory bodies do not permit telecom companies to offer financial services. It is envisaged that the regulation will be enhanced to permit telecom companies to participate actively in financial inclusion programs, thus improving penetration. The m-PESA model in Africa, the MTN Banking model in Uganda are examples of early adoption of this model.

## Customer Experience

The target segment for financial inclusion is predominantly uneducated or poorly educated and not technology savvy. This means that the mobile applications must be highly intuitive and should require minimum customer expertise. New trends will emerge to improve customer experience. These include:

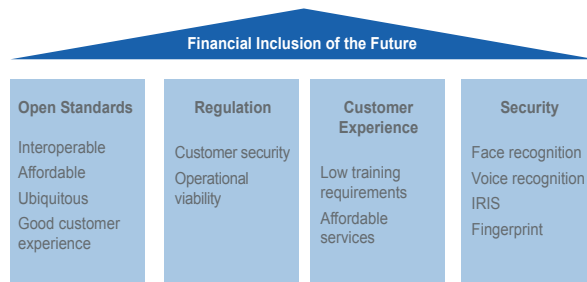
- Speech recognition systems on mobile phone to minimize typed in entry and support spoken entry-this will power both the assisted/ correspondent model to offer more complex transactions using the mobile phone, and the IVR channel will enable a simpler self service

- It can be envisaged that biometric authentication will be enabled on standard mobile phones without the need to invest in expensive peripherals. This will improve the security experience of customers

## Security

The security experience on the mobile phone led financial inclusion is not robust. This is largely due to the fact that biometric security is not seamlessly available on mobile phones. It is envisaged that other modes of security such as face recognition and voice recognition will be permitted by regulatory bodies - enabling existing mobile phones to offer a more comprehensive set of transactions

In India, the UID program aims to create a pan-nation biometric authentication solution accessible through multitude of devices.



## Conclusion

The numbers involved in meeting the needs of the unbanked may seem daunting, but in reality they represent a billion-strong opportunity for banks. By paying greater attention to their wants and developing sensitivity to their needs, banks will be able to develop customized products and include the unbanked in their scheme of things.

The mobile phone, which has seen tremendous penetration among large populace, will play a vital role in ensuring greater reach of these financial inclusion programs. The future will see a greater co-ordination between banks and telcos, a combination which will power the economic progress of many developing countries.

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