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# Financial Inclusion through M-Banking: Scope and Problems in India

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## Abstract

With the help of modern information communication technology, m-banking as a new type of banking services carrier can provide efficient and effective financial services for unbanked and rural peoples in India. Increased cellular service users in rural Indian provide wide opportunity to expand m-banking service in India. However, in spite of opportunities there are numbers of problems and threats in m-banking system. Their major shortcomings are network coverage, security, low cost effectiveness, inconvenience in using mobile handset, IT literacy etc. The outcome of the paper is a defined set of customer requirements to m-banking services in India and an explanation of major failure reasons along with opportunities for their improvement.

## **Introduction**

Financial inclusion is delivery of banking services at an affordable cost to the vast sections of disadvantaged and low income groups. Unrestrained access to public goods and services is the sine qua non of an open and efficient society. As banking services are in the nature of public good, it is essential that availability of banking and payment services to the entire population without discrimination is the prime objective of the public policy (Leeladhar, Deputy Governor, RBI). At present, many peoples in remote areas and rural areas have not appropriate banking services in India. Therefore, the government of India and the Reserve Bank of India encouraging to commercial and cooperative banks to provide banking facilities to those peoples through modern technology i.e. internet banking, ATM, smart cards, mobile banking and business correspondents. However, it is realized that mobile banking is one of the important way to financial inclusion in India. Recent scenario shows that, wireless infrastructures have emerged as an effective option of connecting to an ever-evolving expansive information network such as the Internet and mobile phone service in India. In the 21st century, "mobile" does not only mean of communication it is now mean of banking and financial services. Even Various initiatives use mobile phones to provide financial services to 'the unbanked and mobile banking provides the benefit of convenient financial transactions. The emergence of mobile banking technology has implications for the general discussions about mobile telephony in the developing world.

## **Research Methodology**

This study is based on both primary and secondary data sources. Primary data was collected through interviews of the m-banking users and non-users. In spite of collecting statistical data regarding to m-banking service author was used qualitative method to study the issue m-banking concern to financial inclusion. However, some findings and conclusions made in this paper based on primary data collected to my major research work (PhD) and historical information was collected through secondary data sources.

## **Term 'M-Banking'**

Mobile banking is simply application of mobile (Cell) phone dives as mean of banking via Wireless Application Protocol (WAP), GPRS and 3G technology and short message service (SMS) facilities. Mobile financial services is a term applied to a range of financial activities conducted using mobile devices, such as cellular phones or personal digital assistants (Cheney, 2008). The terms m-banking, m-payments, m-transfers, m-payments, and m-finance refer collectively to a set of applications that enable people to use their mobile telephones to manipulate their bank accounts, store value in an account linked to their handsets, transfer funds, or even access credit or insurance products (Donner, 2007; Donne and Telleze, 2008). Mobile banking allows bank customers to check balances, monitor transactions, obtain other account information, transfer funds, locate branches or ATMs, fund transfer, mobile phone recharge, pay bills,tax pay etc. All these service are performing via SMS, WAP, GPRS, 3G or mobile Internet. According to

[International Finance Corporation \(World Bank\)](#), m-banking refers to financial transactions undertaken using a mobile device against a bank account accessible from that device i.e. M-Payment, Mobile-money Transfer, M-Wallets etc it is the broader set of payments and financial transactions that can be enabled across mobile networks.

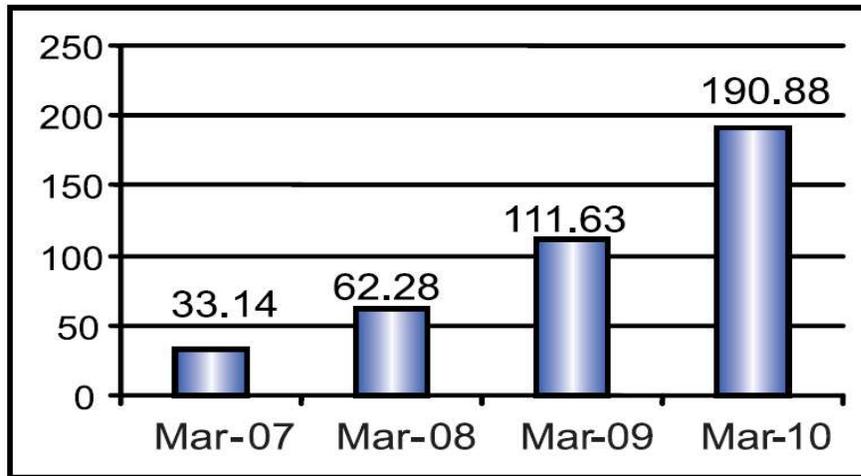
### **Origin of M-Banking**

According to [Ogawara, Jason and Pete \(2002\)](#) the concept of mobile payment originates in Finland. Sonera, a telecommunication company in Finland, released a mobile payment system named *Sonera Mobile Pay* (SMP) in 1999. Then cellular payment service named *PayBox* started in 2000 to online shopping In Germany. In 2001, service like SMP service *Pro-tect* was released as *Mobile Money System (MMS)* in Japan. Korean banks also developed mobile banking network to reduce transaction cost in banking operations and increase convenience since 2002 and launched post pay mobile payment system ([Terri and Fumiko, \(2007\)](#)). Bank of America offers mobile banking through a browser-based program In USA. Wells Fargo offers mobile banking through either a browser-based program or SMS text messaging service and Wachovia offers mobile banking either through a browser-based service or a downloadable mobile banking application in USA. Over 1.6 million users was using m-banking services in 2007, Bank of America, reported having 5,00,000 active users of its mobile banking service In USA. Mobile banking users are projected to reach almost 35 million by 2010. In order to demand of mobile divides to use in m-banking almost of cellular device developer companies alike Ericsson, Motorola, Nokia, LG, Siemens, Samsung, Sony etc. are developing their mobile handset according to m-banking requirements. Most recent handsets are enabled with CDMA, GSM, WAP, 3G, SMS, MMS, JAWA, GPRS, Bluetooth, Infrared, and windows also.

### **Scope for M-Banking in India**

Indian telecommunication service scenario indicates that cellular or mobile phone service was growing tremendously in last five years. As [TRAI's](#) report on telecommunication industry in India, The wireline phone connections were declining in the last few years and mobile phone connections were increased very fast. At present, 16 cellular service providers providing cellular service in Indian and there were 621.28 million phone connections in India out of these 584.32 million mobile phone connections. Mobile phone service was not only spread in urban areas but also in rural areas in India. The rural mobile connections have reached the 190.88 million (See Figure 1) mark as against 111.63 million in the previous year and now 32.67% of total wireless subscribers are now in rural areas and the rural teledensity at the end of March 2010 was 24.29%. It is great opportunity to the bankers to facilitate banking service to 'unbanked' through mobile banking system in India. Providing mobile banking services to the unbanked is not only social responsibility of the bankers but also it is a golden opportunity to the business expansion.

**Figure 2: Rural Wire-Less Subscribers in India (figures in millions)**



**Source: Annual Report of TRAI, 209-10**

### **Economics of M-Banking**

M-banking is cost effective way to provide banking services to the unbanked because there is no need to set up physical branches to facilitate customers it called as it is '**branchless banking**'. It is branchless bank model includes enhanced ability to carry out limited banking transactions via mobile phone. Only bank should develop their m-banking system and register their customers' electronically for m-banking. It is note that, initial cost for establishment of m-banking system may be high but marginal cost for additions of new customers in m-banking wills declines continuously till full utilization of existing installed capacity. Connectivity for mobile device is not the part of banking service it is duty and part of business of telecommunication department and cellular service providers. Hence, bank should only lease the telecommunication lines provided by telecommunication department to provide access to the customers.

From a consumer's point of view, m-banking is expensive to enter the m-banking world because they should have JAVA enable or windows based mobile handset, with GPRS, WAP or 3G system. Almost all m-banking software are either JAVA based or windows based and works thorough GPRS, WAP or 3G system of the cellular service. However, recently it is noticed that mobile handsets having mentioned facilities are available in ` 1500 to onwards. Because of decreased price of mobile handset and service charges of mobile communication is becoming increasingly affordable for the poorer segment of the population ([Bångens and Söderberg, 2008](#)). According to mobile handset market reports most of existing users were using at least JAVA based mobile handsets and having GPRS and WAP facilities. Recently, 3G enable handsets are also available in the Indian market.

### **Mobile banking in India**

Mobile banking has not widely accepted but there is significant growth found in recent years after spread of mobile network. Since 1995 in India, there is found tremendous growth in mobile users in India.

In past two years, mobile banking users have increased three times if we compare the use of either debit card or credit card. Now, 32 banks had been granted permission to operate Mobile Banking in India till June 30, 2009, of which 6 belonged to the State Bank Group, 12 to nationalized banks and 13 to private / foreign banks<sup>1</sup>. The RBI has adopted *Bank Led Model* in which mobile phone banking is promoted through business correspondents of banks. Recently, Indian banks are offering followings facilities through mobile banking:

- 1) Check account balance
- 2) Get automatic updates on bill payments
- 3) Get automatic updates scheduled payments
- 4) Mini account statement
- 5) SMS alert about deposit and withdrawal
- 6) Electronic fund transfer
- 7) Bill Payment, Donations, Subscriptions etc.
- 8) Information about new schemes, changes in charges and interest rates
- 9) Stop payment order and cheque book request
- 10) ATM and branch locating
- 11) Mobile Top Up, Recharge of Other DTHs,
- 12) Merchant payment, SBI life insurance premium
- 13) De-mat Enquiry Service
- 14) Real-time stock quotes

### **RBI's and M-Banking service in India**

Recognizing its potential to achieve financial inclusion faster, RBI has issued guidelines for enabling mobile telephony-based financial services the Reserve Bank of India issued the guidelines for Mobile Banking Transactions in October 2008. Some important guidelines are:

1. Only banks which are licensed and supervised in India and have a physical presence in India including core banking solution will be permitted to offer mobile banking services.
2. The services shall be restricted only to customers of banks and/or holders of debit/credit cards issued as per the extant Reserve Bank of India guidelines.
3. Only Indian Rupee based domestic services shall be provided. Use of mobile banking services for
4. cross border inward and outward transfers is strictly prohibited.
5. The guidelines issued by Reserve Bank on “Know Your Customer (KYC)”, “Anti Money Laundering (AML)<sup>2</sup>” and Combating the Financing of Terrorism (CFT) from time to time would be applicable to mobile based banking services also.
6. Banks should follow the rules of Know Your Customer (KYC) and provide full details of the Terms and Conditions of the service offered shall be communicated to the customer.
7. Technology used for mobile banking must be secure and should ensure confidentiality, integrity, authenticity and non-repudiability i.e authentication by ID and mPIN. (As per new

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<sup>1</sup> Report on Trends and Progress of Banking in India 2008-09, RBI.

<sup>2</sup> Anti-money laundering (AML) is a term mainly used in the financial and legal industries to describe the legal controls that require financial institutions and other regulated entities to prevent or report money laundering activities.

- guidelines Transactions up to Rs 1000/- can be facilitated by banks without end-to-end encryption.)
8. The customer /consumer protection issues assume a special significance in view of the fact that the delivery of banking services through mobile phones is relatively new.
  9. For the present, banks are permitted to offer this facility to their customers subject to a daily cap of Rs. 5000/- per customer for funds transfer and Rs.10,000/- per customer for transactions involving purchase of goods/services (Daily cap of Rs 50,000/- per customer for both funds transfer and transactions involving purchase of goods/services since December 2009).
  10. Banks wishing to provide mobile banking services shall seek prior one time approval of the Reserve Bank of India, by furnishing full details of the proposal.
  11. Banks are required to maintain secrecy and confidentiality of customers' accounts. In the mobile banking scenario, the risk of banks not meeting the above obligation is high. Banks may be exposed to enhanced risk of liability to customers on account of breach of secrecy, denial of service etc., on account of hacking/ other technological failures.
  12. Banks are required to make mandatory disclosures of risks, responsibilities and liabilities of the customers on their websites and/or through printed material.

### **Problems in M-Banking**

Mobile banking is simplest and cost effective way to provide banking services to the unbanked in India. However, at present it is not accepted by common peoples in India because of followings reasons:

1. Less IT literacy is adversely affecting on the use of mobile phone as electronic device for banking. They have just using mobile phones for communication.
2. Most of rural peoples have no idea about m-banking and how it is used. Even we realized that about only 3 per cent of existing customers are using m-banking services in urban areas they have not clear idea about benefits of m-banking.
3. Continues and good quality of cellular service connectivity is not available in the rural areas.
4. Security and trust are most important aspects of any banking service, but people have much of doubts about its security and trustworthiness.
5. M-banking provides limited range of services it not provides deposit facility which is essential service for the customers. If they want to deposit their money they must go in the branch.
6. Refund service is very poor in the m-banking. If customer made some wrong transaction and he/she sent money to wrong person by mistake the bank does not refund that money immediately. Stipulated time for refund such money is defined maximum 15 days.
7. Breakdown of M-banking create inconvenience for customers. Many time it fund that m-banking services are not ready to use.
8. Language used in the m-banking software is also one of the barrier, almost all software using English as common language but rural people and less literate unable to use this software' due to poor knowledge about English.

9. Charges on GPRS or 3G service is not cheap to use in m-banking service. It reduces cost effectiveness of m-banking.
10. What about very poor (Poorer) people who can't purchase mobile phone, if they used mobile phone with the banking correspondents staff is to be used for transactions, how will transactions be authenticated and recorded? It is basic problem in m-banking from poor's point of view.
11. If customer is using m-banking, he would not be able to change to a different service provider and his phone number (it may be permanent customer of the particular cellular service provider).

### **Suggestions for Action**

Several actions are necessary to accelerate the financial inclusion through m-banking while at the same time ensuring customer protection. Many of these actions fall in the policy and regulatory space.

1. Building customer awareness and informing the public on use of M-banking modes is required.
2. The RBI and commercial banks should plan a coordinated campaign in partnership with the trainers and professional to educate customers.
3. Technology used for mobile banking must be secure and should ensure confidentiality, integrity, authenticity and non-repudiability i.e authentication by ID and mPIN.
4. Customer should regularly check transaction history details and statements to make sure that there are no unauthorized transactions. Change password or PIN and avoid using easy-to-guess passwords.
5. Mobile number portability programme should implement immediately it will be led to use their mobile phone as m-banking device.
6. Bank should develop m-banking software in regional language and should use most commonly used phrases, name and shortcuts in the software.
7. Telecommunication department and cellular service providers should extend their network coverage in rural and remote areas to facilitate them communication and m-banking also. The government should provide conditional financial support to cellular service providers to extend such networks in rural areas.
8. Bank should enhance their refund facilities concerns to if wrong transactions made by customers by mistake or if any.
9. Bank can offer EMI or rental based mobile phone handsets to poorer peoples with tie up with mobile handset company. It may gives access to them via m-banking service.

### **Conclusion**

Indian banking scenario shows that there is need of m-banking for financial inclusion of poor and urban people. Since last five years mobile telephone service extended tremendously in India and it provides golden opportunities to extend m-banking service in India. However, because of various problems in m-banking system this is not widely accepted by Indian bank customers. Hence, there is need to improve m-banking service including network coverage and security in m-banking.

## Endnotes

1. **GPRS (General Packet Radio Service)** offers high speed data services in GSM network. It uses Packet Mode Technique to transfer data and provides connectivity to Internet. Users will be able to browse Internet using handsets supporting Internet browsing. They will also be able use their e-mail accounts as is being done through landline Internet access.
2. **WAP (Wireless Application Protocol)** It provides a standardized way of linking the Internet to mobile phones. WAP is an application communication protocol. WAP is used to access services and information. It is inherited from Internet standards. It is used for handheld devices such as mobile phones and PDAs. It is a protocol designed for micro browsers. It enables the creating of web applications for mobile devices
3. **3G or 3rd Generation** is a generation of standards for mobile phones and mobile telecommunications services fulfilling specifications by the International Telecommunication Union. 3G is the next generation of mobile communications systems. It enhances the services such as multimedia, high speed mobile broadband, internet access with the ability to view video footage on your mobile handset. With a 3G phone and access to the 3G network you can make video calls, watch live TV, access the high speed internet, receive emails etc.
4. **Java** is a programming language originally developed by James Gosling at Sun Microsystems (which is now a subsidiary of Oracle Corporation) and released in 1995 as a core component of Sun Microsystems' Java platform. Java is currently one of the most popular programming languages in use, and is widely used from application software to web applications.

## References:

1. Bångens L and Söderberg, B. (2008), Mobile Banking –Financial Services for the Unbanked?, ISBN: 978-91-85991-01-3, [http://www.spidercenter.org/files/m-banking\\_study.pdf](http://www.spidercenter.org/files/m-banking_study.pdf) accessed on 02/01/2011
2. CGAP Consumer Protection Policy Diagnostic Report, 2010, [http://www.cgap.org/gm/document-1.9.42213/India\\_Consumer\\_Protection\\_Diagnostic\\_Report.pdf](http://www.cgap.org/gm/document-1.9.42213/India_Consumer_Protection_Diagnostic_Report.pdf) accessed on 20/12/2010
3. Cheney, Julia S. (2008), An Examination of Mobile Banking and Mobile Payments: Building Adoption as Experience Goods? Discussion paper, the Federal Reserve System, USA [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1266809](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1266809) accessed on 25/12/2010.
4. Donne and Telleze, (2008), Mobile banking and economic development: Linking adoption, impact, and use, Asian Journal of Communication Vol. 18, No. 4, December 2008, 318-332
5. Ghosal S. N. (2010) Mobile Banking For Inclusive Growth, PNB quarterly journal, vol. VI no. 1, january-march-2010 [www.pnbiit.com/download/JanMar10.pdf](http://www.pnbiit.com/download/JanMar10.pdf) accessed on 30/12/2010
6. [http://en.wikipedia.org/wiki/telephone\\_banking-](http://en.wikipedia.org/wiki/telephone_banking-) accessed on 02/12/2011
7. International Finance Corporation (World Bank), (2010), Mobile Banking in Indonesia: Assessing the Market Potential for Mobile Technology to Extend Banking to the Unbanked and Underbanked, [http://www.ifc.org/ifcext/eastasia.nsf/AttachmentsByTitle/Mobile\\_banking\\_report/\\$FILE/Mobile+Banking+Final+Report.pdf](http://www.ifc.org/ifcext/eastasia.nsf/AttachmentsByTitle/Mobile_banking_report/$FILE/Mobile+Banking+Final+Report.pdf) accessed on 01/01/2011
8. Key Pousttchi and Martin Schurig (2008), Assessment of Today's Mobile Banking Applications from the View of Customer Requirements, Proceedings of the 37th Annual Hawaii International Conference on System Sciences, ISBN: 0-7695-2056-1, <http://www.computer.org/portal/web/csdl/doi/10.1109/HICSS.2004.1265440> accessed on 01/01/2011

9. Leeladhar, V., (2005) Lecture delivered on “Taking Banking Services to the Common Man-Financial Inclusion”Deputy Governor Reserve bank of India at the Fedbank Hormis Memorial Foundation at Ernakulam on December 2, 2005,
10. Ogawara, Jason and Pete (2002) Mobile Commerce', Journal of Internet Commerce, 1: 3, 29 -41
11. Terri Bradford and Fumiko Hayashi (2007) Complex Landscape: Mobile Payment in Japan, South Korea and the United States, <http://www.kansascityfed.org/PUBLICAT/PSR/Briefings/PSR-BriefingSept07.pdf> accessed on 02/01/2011
12. Tiwari, and Buse, (2007), The mobile Commerce prospects: A strategic Analysis of Opportunities in the Banking Sector, Hamburger University Press. (E-Book) pp.73-74.
13. TRAI, Annual Report 2009-10