# MOBILE BANKING IN INDIA:CHALLENGES AND OPPORTUNITIES

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**Abstract**

With the passage of time, the way banks used to operate has changed due to advent of internet in banking institutions. The implementation of internet in banking organizations has modernize the banks. Implementing the internet banking approach has benefited the both ,customers as well as banks. Recent innovations in the telecommunication have proven to be a boon for the banking sector and its customers: one of these is Mobile Banking, where customers interact with the bank via mobile phones and banks provide them the services like short message services, fund transfers , account details, issue of cheques booksetc. Presently almost all the banks in the world have started providing their customers "Mobile Banking" services. The main issue of this study is to understand the factors which contribute to user's intention to use the mobile banking services. The purpose of this review paper is to explore the factors that influence the adoption behavior of mobile banking services by Indian customers. Further, this paper discusses the challenges and opportunities associated with the internet banking in Indian context. The paper also highlight the concept of internet banking is slowly gaining acceptance in Indian scenario and efforts are being made by government agencies to make it more popular among customers.

**Keywords: Internet banking, Mobile Banking, ATM, Key Factors, Challenges and Opportunities.**

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## INTRODUCTION

Mobile banking is in the cusp of information from a niche services for the technologically elite to a mass market service demanded by all customer segments. Mobile Commerce is a natural successor to electronic commerce. The capability to pay electronically coupled with a website is the engine behind an electronic commerce. Mobile banking refers to provision provided by bank or other financial institution that allows its customers to conduct a range of financial transactions remotely through mobile telecommunications devices. Mobile banking is a system that helps the customers to conduct a number of financial transactions with the help of their mobile devices.

Where a mobile device is used to initiate, authorize and confirm an exchange of financial value in return of goods and services. Mobile devices may include mobile phones,Personal Digital Assistant (PDAs), wireless tablets and any other devices that connect to mobile telecommunications network and make it possible for payments to be made. The realization of mobile payments will make possible new and unforeseen ways of convenience and commerce.

The types of financial transactions which a customer may transact through mobile banking include obtaining account balances and list of latest transactions, electronic bill payments, and fund transfers between customers' or another accounts.

The role of banking is very important in operating the business as well as industry functions. As banks develop their strategies for giving customers access to their accounts through cell phones and other mobile devices, they should also regard this new emerging platform as a potential catalyst for generating operational efficiencies and as a vehicle for new revenue sources. Where the Internet Banking is still in its growing stage, mobile banking has emerged as the next advance way of doing banking. The scope of offered services may include facilities to conduct bank transactions, to administer accounts and to access customized information (Tiwari & Buse, 2007). The biggest limitation of Internet Banking is the requirement of a personal computer with an internet connection, but definitely a big barrier if we consider most of the developing countries of Asia like India. Mobile banking addresses this fundamental limitation of Internet Banking, as it reduces the customers requirement to just a mobile phone. Mobile usage has seen an explosive growth in most of the Asian economies like India. The main purpose of Mobile Banking scores over Internet Banking is that it enables - Anywhere Anytime Banking. Customers don't need access to a computer terminal to access their bank accounts.

Mobile phones have become an essential communication tool for almost every individual worldwide. In India, where mobile subscribers far exceed fixed line subscribers because of better mobile infrastructure in comparison to fixed line infrastructure has made mobile banking much more appealing in India. Technology plays an important role in banking sector. Mobile phone is a common technology device that became part of every individual in the information era. Mobile Banking is an emerging alternate channel for providing banking services. India is the second largest telecom market in the world market, which is having high potential for expanding mobile banking services.

**REVIEW OF LITERATURE**

During the last four years, the numbers of banks providing mobile banking services in India have increased four times. But numbers of mobile banking users have not increased at the same pace. There are many challenges that Indian banks are facing for increasing the mobile banking user database like Handset operability, Security, Scalability and Reliability, Application Distribution etc. Acceptance and adoption of this innovative technology is very complex and this 'complexity' attribute is studied by various researchers and they have suggested that banks should make these services easy to use by the Indian population because Indian population is not very well versed with this upcoming technology(Combs, Chatachawanwan and Vij (2009).

Though most of the banks are investing heavily in mobile technology, there is need to increase demand from consumers, new technological innovation emerging and with growing competition from new entrants, the pressure on banks to develop their mobile banking capability is also set to increase.

A report by Tiwari et al,( 2006),inculcate that Mobile banking builds a cornerstone for mobile commerce.

Mobile Banking , also known as M-Banking, can perform various functions like mini statement, checking of account history, SMS alerts, access to card statement, balance check, mobile recharge etc. via mobile phones(Vinayagamoorthy and Sankar, 2012).Banks are constantly updating their technology and want to increase their customer base by reaching to each and every customer. There are many advantages of using mobile banking, such as people in the rural areas

can also get an easy access to mobile banking whenever required. Vinayagamoorthy and Sankar,(2012) have discussed about the mobile banking and according to them it is a term that is used for performing various banking transactions like fund transfer, balance check, payments etc. via mobile phones.

Mobile banking has emerged as new alternative way of banking which is more convenient and user-friendly than traditional form of banking. It is covering the concept of anytime, anywhere banking into reality (Kaur&Madan, 2013).

Mobile banking is a system that allows customers of a financial institution to conduct a number of financial transactions through a mobile device such as a mobile phone or personal digital assistant. Mobile banking differs from mobile payments, which involve the use of a mobile device to pay for goods or services either at the point of sale or remotely, analogously to the use of a debit or credit card to effect an EFTPOS payment. The earliest mobile banking services were offered over SMS, a service known as SMS banking. With the introduction of smart phones with WAP support enabling the use of the mobile web in 1999, the first European banks started to offer mobile banking on this platform to their customers.

The ***Global Mobile Banking Report***(2015)remarked that while the mobile is considered as the largest banking channel by volume oftransactions through its volume of transactions, its adoption by new customers is now entering an exceptionally rapid phase. Interestingly, adoption ratesbare highest in developing countries: reaching to about a 60-70 per cent in India and China, as compared to developed nationsuch as the USA, Canada and the U.K. It also revealed that mobile banking and payment systems are increasinglybeing integrated with other technologies, driving an era of 'Open Banking'.

In the short-term, the availability of mobile banking services is a key indicator when customers choose to switch mobile bankingand the report highlights a clear link between a strong mobile proposition, customer satisfaction and advocacy. However, mobile bank users, who are typically in their mid to late thirties, are among the most likely to switch banks, suggesting that even an effective mobile banking offering may not be enough by itself to retain these high value

customers. Indian customers demonstrate the highest likelihood of changing banks driven by the availability of better mobile banking services.

According to data compiled by BNP Paribas Securities India Pvt. Ltd,HDFC Bank Ltd has emerged as the leader in mobile banking services with 38.2 percent market share in financial year 2015, followed by ICICI Bank Ltd.

**Objective**

This study plans to review the acceptance of mobile banking services among the consumers. The primaryobjectives of this study are:

1. To study regulatory framework and current status of mobile banking services globally.
2. To identifyfactors which influence the adoption and usage of mobile banking in India.
3. To study various security issues and key factors for enhancing mobile banking services in India.

**Mobile Banking: Overview and Current status**

Mobile banking is one of the alternative channels available to customer for quick and efficient service or anytime and anywhere. It also studies the various incentives and gain by the customers with the usage of mobile banking (Mishra and Sahoo, 2013).

When cellphones turned into smartphones, and began to mimic the power found in most computers, banks have been able to provide consumers with powerful mobile banking apps that allow completing banking anywhere, anytime. This facility includes features like- checking funds, making bill payments, transferring or sending money. Though some European banks offered mobile banking as early as 1999, it took until 2007 for major banks in the U.S. to develop mobile banking apps that actually worked and customers wanted.

After recognizing the potential of mobile as a channel for offering financial services in thecountry the first set of guidelines were issued by the Reserve Bank on mobile banking in October 2008.The bank-led model was considered suitable for the country with a mandate to banks such that all transactions should originate from one bank account and terminate in another

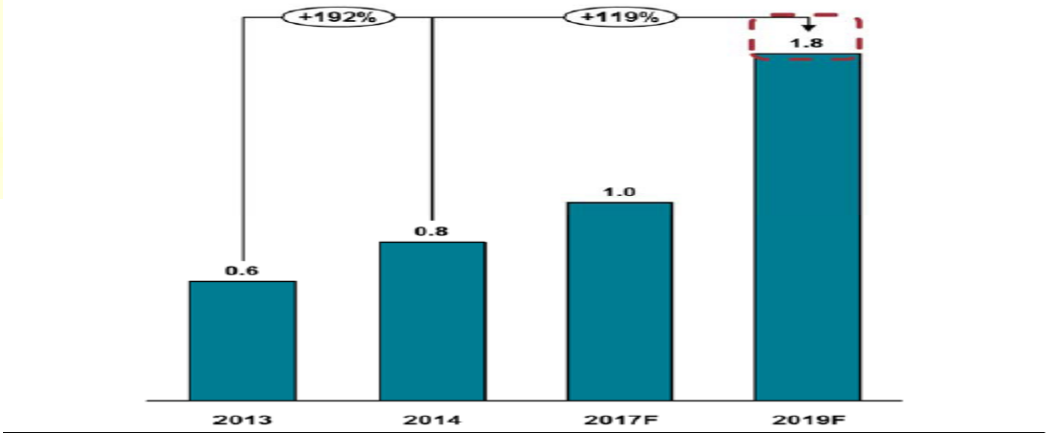
bank account. At this time, a few banks had already started offering information based services like balance enquiry, stop payment instruction of cheques, transactions enquiry, location of the nearest ATM/branch etc. through this medium.

The guidelines issued by RBI in October 2008, permitted banks to facilitate funds transfer from one bank account to another bank account, both for personal remittances and purchase of goods and services. Banks were directed on the regulatory and supervisory issues, registration of customers for mobile banking, to ensure technology standards, interoperability, interbank clearing and settlement arrangements for fund transfers, customer grievance and redressal mechanism and transaction limits in an attempt to ensure safe, secure transfer of funds.

Almost all banks have some kind of mobilebanking offering, either developed in house or by making use of third- party specialist vendors. In the developed world, the rapid proliferation of smartphones and latterly tablets has poured fuel on the mobile banking fire. As furnished in 2014by Juniper Research reported that global mobile banking users standing at 0.8 billion.

A startling finding is that this already impressive level of adoption is set to continue growing very rapidly over the coming years with Juniper predicting a global mobile banking user base of some 1.8 billion people by 2019, which is indicated through a table 1.1.

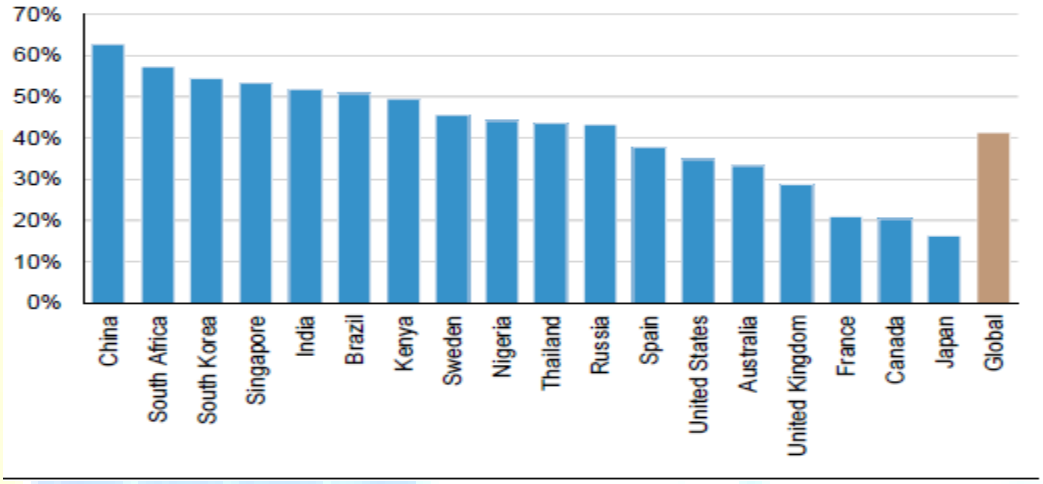
**Table 1.1-Regional and national Mobile Banking trends**




Source: Juniper Research; KPMG analysis, Mobile Banking Report, 2015

In recent primary, survey-based research, UBS Evidence Lab have provided further insight on the comparative demographic profiles of mobile banking penetration by different countries.

**Table 1.2Mobile banking penetration by country**




Source: UBS Evidence Lab, Mobile Banking Report- 2015

Across Europe, the current adoption of mobile banking services were 38 percent, with on average modest growth year on year (Source: Press Articles, KPMG Analysis). There are some notable differences between specific countries in Europe. Adoption in the UK however, exactly matches the average at 38 per cent.

Although economic prosperity is unevenly distributed – from the rich city state of Singapore to the newly emerging economy of Myanmar – technology trends are impacting all of ASEAN in very similar ways,especially when it comes to financial services. Young ASEAN consumers are more open than ever before to considering non-traditional alternatives for their financial services, while the number of users of core services such as banking are set to double by 2020 across South-east Asia as the 'unbanked' begin to be served through their new mobile devices (source: UBS Evidence Lab).

The explosive growth of smartphones –mobile phone penetration approaches 100 percent of adults in most of ASEAN (source: UBS Evidence Lab) – together with increased comfort in using mobile commerce and improved regional connectivity, are setting the scene for major

disruptions among the established ASEAN players in the banking sector – some of whom have perhaps been too comfortable within their respective home markets, assuming they were in some way immune to external competitive forces.

The current scenario of India is being depicted from Table 1.3, which shows the status of Mobile Banking services of some popular banks.

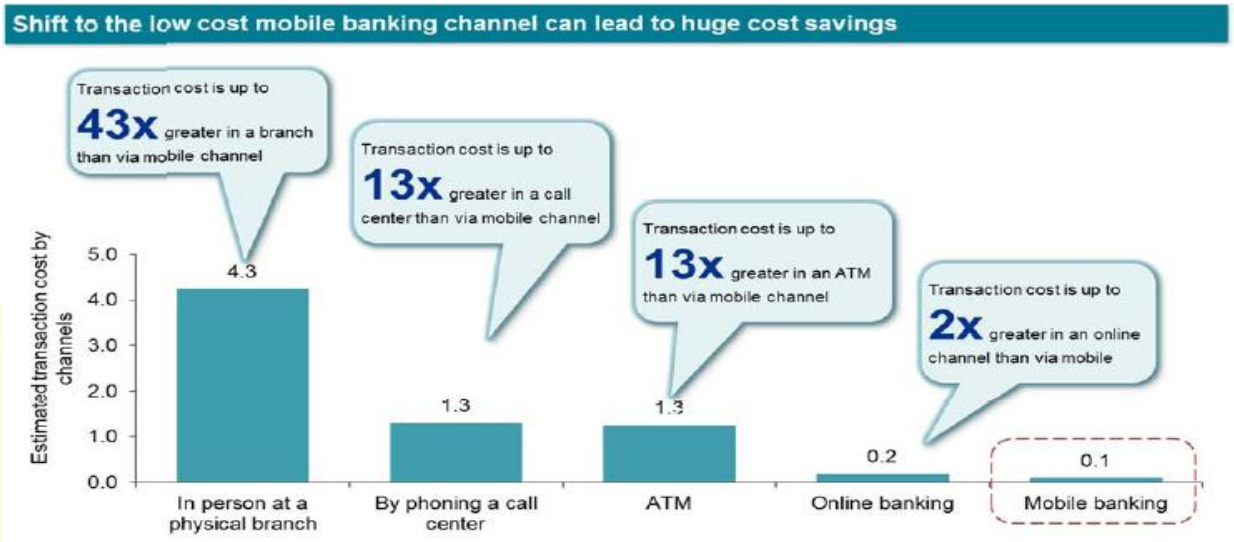
**Table 1.3Mobile Transactionsin Monthof April, 2015**

| BANK | No. of Mobile Transactions | Value of Transactions(Cr.) |
|---|---|---|
| State Bank | 78.5L | 1,701 |
| ICICI Bank | 38.6L | 5,342 |
| Axis Bank | 26.7L | 1,897 |
| HDFC Bank | 17.5L | 5,686 |
| Kotak Mahindra | 7.5L | 946 |
| YES Bank | 5.7L | 268 |
| Citi Bank | 4.2L | 397 |
| Canara Bank | 2.9L | 1,987 |
| Union Bank | 2.1L | 118 |
| State Bank of Hyderabad | 1.2L | 7 |

Source-RBI, 2015

The country's largest lender State Bank of India, which leads in number of transactions, expects to capture the number one position in value of transactions as well one it launches it mobile banking service for its corporate customers. The top private banks except mobile devices to be the predominant channel through which customers access their accounts. HDFC Bank is the largest in the mobile banking space in terms of value of transactions with Rs.5686 crore of transactions in April the transactions in value termsthrough mobile channel are already at par with internet transactions for Axis Bank and HDFC Bank expects mobile to overtake internet next year.

**Table 1.4:Impact of bank costs of transaction migration to mobile channel**




Source: Javelin Strategy and Research, KPMGanalysis, Mobile Banking Report-2015

**Mobile banking security issues**

Organizations delivering mobile banking services currently facingdifficult choices over the right solution, i.e.

(1) Short-term business objectives with a long-term strategy for the mobile channel;

(2) Thecapabilities of their end-to-end transaction monitoring and risk-scoring architecture;

(3) The proliferation of security vendors; and

(4) Their own capability.

As customers demand frictionless online experiences, especially on mobile devices where there is a particular demand for speed and responsiveness, organizations need to match the roll out of functionality to perform riskier transactions with their ability to authenticate the device, the application and the user, in ways preferred by the customer, and permitted by local laws and regulations.

Fraud controls are matched to the risk of specific customer actions, and necessarily depend on the authentication, integrity and secrecy of customer credentials and identity, as well as the assets stored on the device itself. The mobile device in which the control or asset resides needs to be

considered a hostile environment, both from the perspective of reverse engineering attack and ultimately compromise. Designing an end-to-end mobile channel architecture is no different to any other architecture in a fast-changing, technology-driven domain. However an organization that has implemented poorly structured solution may find it in an architectural dead-end and may not be capable of an effective response to a change in the external landscape.Various other critical drivers affecting mobile security strategy and, in turn, architecture arises out of the following complex, dynamic, overlapping and interconnected eco-systems, covering:

- Online and digital identity providers
- Payment providers and dis-intermediaries
- Banking
- Mobile platforms and services

However, thethree key areas for banks to focus on in order to take advantage of the surge in mobile banking are as follows

**1) Expansion of mobile banking services** – Banks should investigate the potential of value added services, suggestingthat virtual customer support can bring the personal touch of a branch to a handset, but banks need to treat carefully. For example, mobile banking offers many opportunities for cross-selling other financial services, but unwantedsales messages can 'invade' what the report calls 'device intimacy' and lead to customer complaints, reducedusage or even switching to another provider. On the other hand, consumers tend to value personalized support via mobile services. The report urges banksto explore areas such as virtual support, social media banking and 'life tools' such as cloud storage. Furthermore, banks should also consider mobile-enabled technologies such as wearable and augmented reality as they proliferate.

**2) Banks need to be more open** - While banks offer Application Program Interfaces (APIs), allowing third-partydevelopers to develop such technology, the report highlights that there needs to be greater collaboration between banks and the developers. Additionally, even as banks invest unprecedented amounts in mobile and other technology-led capabilities, challengers

unencumbered by legacy IT infrastructure are already one step ahead. To stay at the fore, manylarge banks are increasingly acquiring technology start-ups and investing in incubators.

**3) Invest in security** - Innovation must be underpinned by rock solid security. Banks are urged to heavily invest in technologies that can evolve and protect against future threats, as well as tackle current pressures frommalware and social engineering. Forty per cent of consumers, cited concerns about entering card details in mobile devices, and the possibility oflosing a handset ranks highly amongst the list of worries. Banks find themselves having to both protect the customer, while at the same time providing uninterrupted andspeedy access to their services to attempt to ensure greater consumer satisfaction. Biometric apps andfingerprint scanning are earmarked as ways to bolster the security of mobile banking, whilst ensuring ease ofaccess; only a handful of the main banks assessed in the research currently offer this service.

**4) Layerisation –** It involves layers of services which mobile banking is coordinated with Augmented Reality (AR), location based services, social media, contextual commerce and many others. For example, as a consumer holds up their phone to a television in a store, AR will recognize it and provide relevant information including possible accessories and credit options. Consumers will be able to check reviews on social media and then pay through mobile banking in one seamless transaction

**Key findings**

Mobile banking is a phenomenon that is havinga profound effect on the GLOBAL FINANCIAL SERVICES INDUSTRY. Some important findings are-

1. Mobile is already the largest banking channel for the majority of banks byvolume of transactions.
2. According to Mobile Banking Report, 2015 adoption rates are highest in so-called developing countries – reaching 60-70 per cent in China and India – rather than developed nations, such as the US, Canada and the UK.
3. The nation's biggest lender, which had to play catch-up with private sector rivals like HDFC Bank and ICICI Bank, now has 35 per cent market share in mobile banking as its tax payment and fund transfer features drew in more customers, as per Reserve Bank of India

Report. In December 2015, the market share of ICICI Bank was at 21.5 per cent and for HDFC Bank it was 17.7 per cent.

4. Adoption growth rates within individual countries show wide variation, even across similar economies.

5. Mobile capability is already a key factor in the selection of a new bank by switchers.

6. iMobile, the most comprehensive and secure Mobile Banking application, offers over 100 banking and informational services to take care of banking needs conveniently from mobile. iMobile is available on Android, Windows, Blackberry, Apple and Java phones and tablets.

7. Banks are increasingly shifting to a 'mobile first' approach. There are several strands to make this approach successful by–

- Designing new services first for mobile with other channels subsidiary tothat;
- Designing new services which are unique for the mobile channel;
- Using mobile banking to complement other services, such as improved in branch experience;
- Providing 'branded utility' applications, such as cloud-based data storage and home-buying research support.

**Suggestions**

Mobile Banking services in India is gaining momentum at a faster pace but though it is a new phenomenon for banks and for India banking customer, there is still room for further area of research as how banks should incorporate all those services features which would help in gaining customer loyalty and customer retention. However some of the ways through which banks can increase the customer faith in MobileBanking services are as follows:

1. Banks may implement multiple channels (application, SMS, USSD etc.) formobile banking so that options are available to all types of customers with anytype of handsets with suitable level of security.

2. For facilitating funds transfer using mobile banking, the remitting customer may be facilitated to effect person-to-person funds transfer using just the mobile number and bank or just the Aadhaar number of beneficiary.

3. Customer may be able to make merchant payment using just his mobile number and M-PIN/OTP on the merchant interface. The M-pin can be only interfaced on acquiring bank's interface such as USSD, Application etc. for security reasons. The merchant based interfaces can accept OTP (One-Time Password) for authentication.

4. Every bank may offer OTP services on SMS request with the standard syntax of SMS such as "MOTP XXXXXX" to the short or long code. (XXXXXX – last 6 digits of the account number).This will help to expand the use of OTP in mobile payments.

5. Limit of unsecured transaction (without end to end encryption) may be raisedfrom the existing Rs.5000/- to Rs.10000/- subject to having certain velocitychecks at the bank side. The banks may take the decision of limitenhancement depending on their security policy and internal riskmanagement control measures.

6. Banks may also periodicallyconduct refresher courses to ensure staff is abreast with latest developments in these fast paced technology areas in mobile banking.

**Conclusions**

The banking industry is entering a hugely exciting phase of development but one that will also present major challenges to profitable growth. As data from numerous sources make clear, usage of mobile banking services will continue to grow, and at an accelerated rate, over the next five years until they become essential ubiquitous. Additionally, we see the emergence of an era of 'open banking', in which financial services become just one layer in a multiplicity of familiar, novel and as yet unconcealed consumer experiences

In such an environment we believe banks will face ever greater challenges to their traditional primacy in consumers' financial dealings.Unencumbered by legacy IT infrastructure, frequently with no aspiration for full banking licenses and often with stronger capital positions and consumer brand trust than the banks themselves, non-traditional players will certainly continue their march across the banks' turf.However, as we have shown, many banks have already begun their response to this challenge with unprecedented investment in mobile and other technology-led capabilities and newer, digitally-enabled branch networks remain a powerful draw for consumers in search of advice at key stages in their lives. For a large group of consumers, banks remain the preferred choice for mobile banking from a security perspective while at the same

time perceptions of security weaknesses in this channel are inhibitingadoption for a substantial minority.

**References**

[1] Adoption of Mobile Banking Services in Jordan, Scientific Journal of King Faisal University(Humanities and Management Sciences), Vol9 No2, 1429H(2008).

[2] Shi Yu, Factors influencing the use of Mobile Banking: The case of SMS-based Mobile Banking, 2009.

[3] Devadevan, V. (2013). Mobile Banking in India: Issues & Challenges. International Journal of Emerging Technology and Advanced Engineering , Vol. 3, No. 6, pp. 516-520.

[4]Donner, J. (2007). M-Banking and M-Payments Services in the DevelopingWorld Complements or Substitutes for Trust and Social Capital, International Communication Association , (pp. 1-16). San Francisco, California.

[5] F. de la Puente, S. Gonzalez, and J. Sandoval. **Virus attack to the PC bank**, Security TechnologyProceedings. IEEE 33rd Annual 1999 InternationalCarnahan Conference , pp. 304-310,1999.

**[6]** H. Harb, H. Farahat, and M. Ezz. **Secure SMS Pay: Secure SMS Mobile Payment model**, Anti -counterfeiting, Security and Identification ASID, pp. 11- 17,2008.

[7] H. Wu, A. Burt, and R. Thurimella. **Making secure TCP connections resistant toserver failures**, Computer Security Applications Conference 2003, Proceedings. 19th Annual, pp. 197-206,2003.

[8] Hayat Muhammad Aslam. **Mobile payments : Will Colombo keep its leadership in South Asia**,http://sundaytimes.lk/090712/FinancialTimes/ft323.html,2009.I.Brown,Z.Cajee, D. Davies, and S. Stroebel. **Cell phone banking: predictors of adoption in SouthAfrica—an exploratory study**,International Journal ofInformation Management,Vol.23, pp. 381-394, Oct.2003.

[9] www.propertyobserver.com.au/financing/25583-august-22-mobile-banking-shirley-lui.htm.

[10] www.moolanomy.com/4512/the-pros-and-cons-of-mobile-banking.

[11] http://www.moneymatters360.com/index.php/pros-and-cons-of-mobile-banking-1507/

[12] http://www.cgap.org/topics/agent-networks

[13] www.rbi.org.in