

# A critical evaluation on banking reforms in India in terms of e-banking

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## Abstract

Banking sector has always been relying on Information Technology to process and deliver its services to the relevant stakeholders. The contemporary banking sector in India is fiercely competitive than ever before, making it extremely important for every players to achieve and maintain its competitive edge. For this, most banks have taken steps to improve their banking systems by seizing the growing opportunities of information technology. The most recent two developments in banking sector include the internet banking (e-banking) and mobile banking (m-banking). With the development of e-banking, majority of the Indian banks have developed online banking and mobile banking platforms for its customers to get most of their regular banking services. Though various researches have been conducted in the field of online and mobile banking, it is imperative to investigate how these banking developments have contributed to the economic growth and reforms in India. This paper will critically evaluate the banking developments in terms of e-banking adoption in recent years, and to investigate its future perspectives in terms of security issues associated with e-banking services.

**Key words:** E-banking, ATMs, M-banking, Banking Reforms, online banking in India, Mobile banking.

## Introduction

Internet and mobile technologies have great potential for tremendously changing the banks and the banking industry. The opportunities which the e-banking and m-banking technologies offer to the banking sector have in turn transformed the way banks do their businesses. Rapid advances in information technology provided banking sector with numerous advances such as ATM, Tele-banking, internet banking, and mobile banking and so on. Almost all banks in India are now reaping the advantages of Core Banking Solutions (CBS) linked to internet and mobile banking, which in turn facilitated anywhere banking, NEFT (National Electronic Funds Transfer) RTGS (Real-Time Gross-Settlement) and many other advanced banking services.

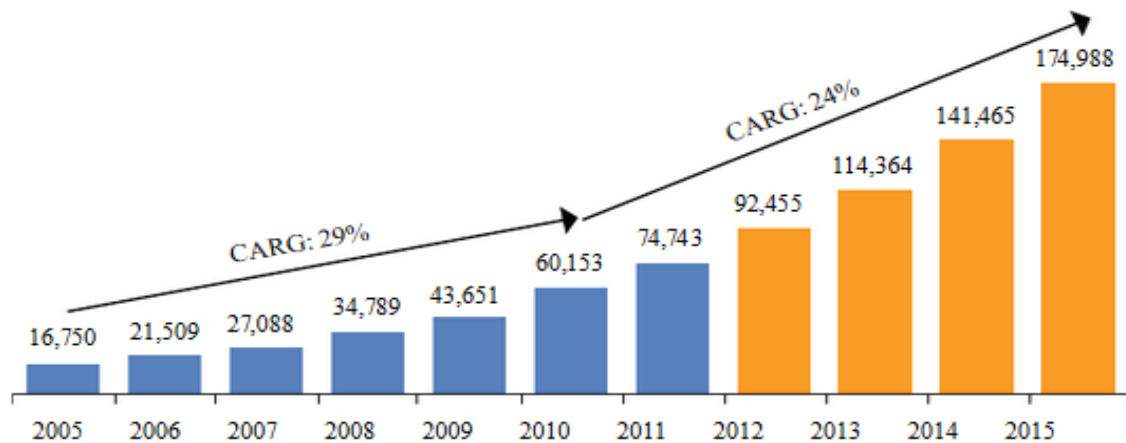
The adoption of technologies and innovations for banking transactions could yield significant benefits for both the banks and their customers. Banks have sought to achieve competitive advantages and sustainability through the expansion of ATMs across the country, and the adoption of internet and mobile-based banking systems (Sharma and Govindaluri, 2014). However, the issue of security threat has also become an important matter of debate. Various researches have been conducted in the field of banking reforms such as ATMs, e-banking and m-banking and potential threats on safety and security of banking transactions as well. A recent ATM robbery in Trivandrum, Kerala in August 2016, has brought the attention of experts and academicians regarding the security concerns of banking transactions through ATMs, e-banking and m-banking. The main objective of this paper is to critically evaluate the recent developments in banking sector such as e-banking and m-banking and the security issues associated with e-banking and m-banking services.

### **E-banking in Indian banking sector**

E-banking refers to the use of electronic delivery channels for banking products and services. It is about the provision of retail and small value banking products and services through electronic channels as well as large value electronic payments and other wholesale banking services delivered electronically (Rezaul and Karim, 2012). The term e-banking is used as an umbrella term by researchers including. Accordingly, e-banking is a term that signifies and encompasses the entire sphere of technology initiatives that have taken place in the banking industry including Automated Teller Machines-ATMs, Internet Banking, Mobile Banking, Phone Banking, Telebanking and Electronic Fund transfer and Electronic Clearing Services (Basak, 2014). For this paper, ATMs, internet banking, and mobile banking are the main areas of discussions as part of e-banking reforms in India.

Banks that have been traditionally relying on 'branches' as main channel for delivering services to customers have now highly advanced facilities for offering their services through a variety of technological innovations such as ATMs, Core banking, E-banking and M-banking. The first ATM in India has been launched by HSBC in 1987 in Mumbai (HSBC, 2016). Since then, banks across India have been launching their ATMs at focal points around cities, making it highly convenient for customers to carry out their daily

banking transactions.



(Source: Hota, 2013).

As shown in the figure-1 above, continuous growth has been estimated in the number of ATMs across India, reaching to a total of 1,74,988 ATMs by 2015 (Hota, 2013). RBI reported that there are a total of 1,99,099 ATMs in India including both on-site and off-site ATMS (RBI, 2016).

Another major breakthrough in the banking industry is online banking which is the electronic payment system that enables customers of a particular bank to carry out a range of financial transactions through bank's website. Apart from banks, financial institutions also provide internet banking services through their web portals. RBI has issued relevant notifications time to time to guide banks and financial institutions in India about launching and operating online banking services. Various guidelines have been issued by RBI to banks that operate internet banking facility. The guidelines include maintaining network and database administration by the concerned banks, having a security policy duly approved by the board of directors, two-factor authentication etc. According to a study conducted by McKinsey & Company, a global management consultancy, in 2011, as many as 7% of the total account holders in India were using the Internet for banking transactions, while branch banking has fallen by a full 15 % points (Business Standard, 2011). As of 2015, online banking transactions, mainly online-payments, accounted for 14% of the total banking transactions in India (Nair, 2015).

Another segment of e-banking is mobile banking which is the service provided by a particular bank allowing its customers to conduct a range of financial transactions by using a mobile device such as mobile phone or tablet PC and using software usually called mobile-application. M-banking has become another major breakthrough in the banking industry in India. According to RBI guidelines, only those banks that have facilitated Core Banking Systems are permitted to launch m-banking. It was recently reported that the value of mobile banking transactions have jumped 46% to Rs 49,029 crore in December 2015 as compared to its previous month (Nair, 2016). Though it was reported as a sudden surge, it is observed that there is considerable growth in the mobile banking transactions in India between months. Since the number of

mobile banking users globally is very likely to double in the next four years, to reach to a total of 1.8 billion users across the globe, and that India has grown to become the second largest internet user with more than 277 million people using internet by surpassing US (Mohan, 2016), it can be predicted that there will be considerably a bigger surge in the number of mobile banking users in India in coming years. However, while these trends go further ahead, the security in banking transactions continues to pose bigger challenges in the banking industry in India.

### Contributions of e-banking to Indian Economy

It is widely accepted that many innovations and reforms have taken place in banking sector but no such things have changed the business of banking as fast as the e-banking revolution. Customers have got highly convenient banking services through ATMs, internet banking and mobile banking. ATM provides customers with cash withdrawal, depositing, viewing of account statement, transferring and payment services whereas both internet and mobile banking services have emerged to provide most of the banking services except cash deposits.

Online and mobile banking services provide customers with numerous facilities that have been traditionally provided on-site. One of the main elements to this change is high-convenience as people do not have to go to banks for most of the services, but they could do it from anywhere at any time. The restrictions of time and place were taken away. With e-banking services, customers get easy 1) easy Electronic Fund transfer facility, 2) Better efficiency in Customer relationship management, 3) Making the Payments of bills like electricity, telephone bills, and mobile recharge, 4) viewing of balance of accounts and statements, 5) doorstep services, 6) Balance and transaction history search, 7) Transaction history export , 8) Order mini statements, 9) SMS banking services and so on.

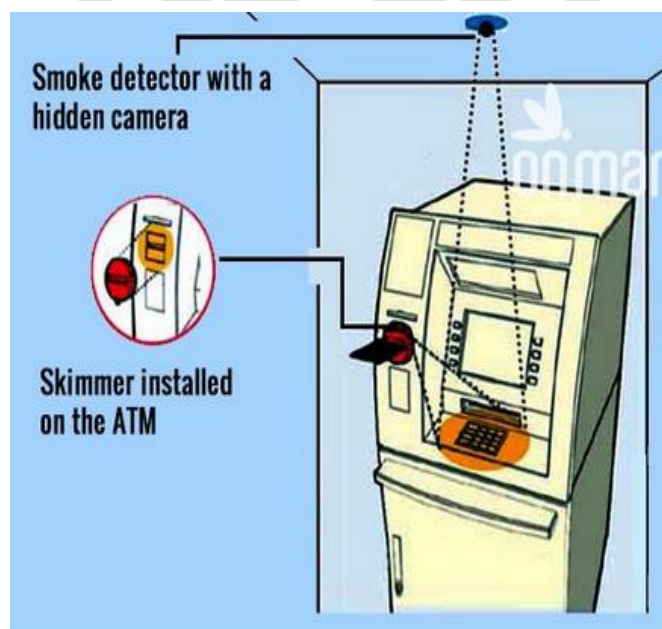


Figure-2, Source- Manorama Online

## The case of ATM robbery in Kerala

The news about high-tech ATM robbery from Trivandrum, Kerala in August 2016 has caused severe threats on security of e-banking services and created chaos among customers regarding how safe are their banking transactions. Based on complaints registered from around 16 people from Trivandrum about SMS messages of money being withdrawn from their SBI and SBT bank accounts, the police investigated the case mainly by using the webcam attached to the concerned ATMs in Trivandrum. It was found that three Romanian citizens have first installed a fake smoke detector on the ceiling of the ATM counter, and then a digital device with SIM card, camera and micro-chip was placed inside the smoke detector. As shown in the figure-2, the camera was placed in a way that it could capture details of accounts, including the secret pin. It was observed that cash was withdrawn by the Romanian fraudsters from other ATMs in Mumbai. It is assumed that using the information captured by this camera, the fraudsters might have created fake ATM cards (Manorama Online, 2016).

It is perhaps one of the biggest ATM forgery since e-banking has been implemented in India. Rather than people trying to break the ATM machine to steal the money kept inside, the aforesaid robbery case is regarded as high-tech, since the fraudsters used latest technology for capturing information and for making fraud cards too. There remain many questions as why these foreigners selected India and what makes India attractive to them. It is perhaps they might believe that Indian ATMs do not have high-security measures.

## Future prospects of e-banking and security issues

As compared to ATMs, other e-banking services such as internet banking and mobile banking also face security threats. Since internet is a public network of computers that facilitate flow of data between computers, it is critically important for banks to ensure highest possible security while providing internet and mobile banking services. It is people who create and develop websites for internet banking and applications for smartphones. As such, it is very likely that people could trespass the restricted access. The above mentioned ATM case has been first identified because of that the customer has activated SMS system, and with which he could identify that his money being withdrawn. For online banking transactions, though two-factor authentication has been made compulsory by the RBI, it is a critical threat that internet is worldwide, and people from anywhere in the world can attempt to get unauthorized access to websites.

Security is not only concerned about monetary transactions, but also about how much the information about individual account and customers stored in bank's websites are safe and secure. It is widely debated that social media and other internet platforms have created challenges on privacy of information. For most e-commerce transactions, customers have options of online payments by internet banking, apart from debit card and credit card. For this, customers have to access their bank accounts for online payments by using



their bank user name and password. There are computer viruses and mal-ware applications that can intrude to individual computers and capture information which then can be replicated or made useful for other strategic frauds. The security threats of banking services in the future will be an extremely challenging one

## Conclusion and Recommendations

This paper attempted to critically evaluate the reforms of banking sector in terms of banks' implementation of e-banking system including ATMs, internet banking and mobile banking. The main objective of this paper was to critically evaluate these developments in terms of its security threats with special reference to a recent high-tech ATM robbery in Kerala. Indian banks were not far behind in adopting latest technologies for transforming the way they have been operating. These developments have made bigger contributions to the economy as well. However, it is imperative for banks to ensure that their banking transactions are safe and secure. The point of concern in this regard is that fraudsters had to come to India for the recent ATM robbery, but they may not have to come here for any such attempt if they could make for internet or mobile banking.

Based on this exploratory evaluation, this paper recommends further studies in the field of security of transactions in online and mobile banking services. It is very important to investigate whether people ever suffered from any security related risks, and if so, what measures their banks have taken to avoid such risks. RBI has made 'two-factor authentication' compulsory for online banking transactions in order to ensure the safety of online banking transactions. However, it is recommended that further study is required to investigate how much safe are online banking transactions when 'two-factor authentication' is implemented.

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