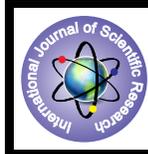


Impact of Technology on Banking Sector in India



Management

KEYWORDS : Computerisation, Automatic teller machine, Plastic Money, E- Banking, Net Banking

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ABSTRACT

In the world of banking and finance nothing stands still. The biggest change of all is in the, scope of the business of banking. Banking in its traditional form is concerned with the acceptance of deposits from the customers, the lending of surplus of deposited money to suitable customers who wish to borrow and transmission of funds. Apart from traditional business, banks now days provide a wide range of services to satisfy the financial and non financial needs of all types of customers from the smallest account holder to the largest company and in some cases of non customers. The range of services offered differs from bank to bank depending mainly on the type and size of the bank.

Technology has been one of the most important factors for the development of mankind. Information and communication technology is the major advent in the field of technology which is used for access, process, storage and dissemination of information electronically. Banking industry is fast growing with the use of technology in the form of ATMs, on-line banking, Telephone banking, Mobile banking etc., plastic card is one of the banking products that cater to the needs of retail segment has seen its number grow in geometric progression in recent years. This growth has been strongly supported by the development of in the field of technology, without which this could not have been possible of course it will change our lifestyle in coming years.

INTRODUCTION

In recent time, Indian banking industry has been consistently working towards the development of technological changes and its usage in the banking operations for the improvement of their efficiency. To get the benefits of enhanced technologies, Indian banks are continuously encouraging the investment in information technology (IT), i.e. ATMs, e-banking or net banking, mobile and tele-banking, CRM, computerization in the banks, increasing use of plastic money, establishment of call centers, etc. RBI has also adopted IT in endorsing the payment system's functionality and modernization on an ongoing basis by the development of Electronic Clearing Services (ECS), Electronic Funds Transfer (EFT), Indian Financial Network (INFINET), a Real-Time Gross Settlement (RTGS) System, Centralized Funds Management System (CFMS), Negotiated Dealing System (NDS), Electronic Payment Systems with the 'Vision Document', the Structured Financial Messaging System (SFMS) and India Card – a domestic card initiative, implemented recently (2011).

Indian banking environment has become more compatible as compare to the standards of international financial system, by the positive impact of all these efforts. This study makes an attempt to map the impact of IT on banking sector for scheduled commercial banks operating in India including public, private and foreign sector banks in India. The results convey that all SCBs have shown a significant and improving trend in their performance due to the adoption of IT. This adoption is required mandatory to take the country into the 21st century.

RESERVE BANK'S EARLY INITIATIVES

As a central bank in a developing country, the Reserve Bank of India (RBI) has adopted development of the banking and financial market as one of its prime objectives. "Institutional development" was the hallmark of this approach from 1950s to 1970s. In the 1980s, the Reserve Bank focused on "improvements in the productivity" of the banking sector. Being convinced that technology is the key for improving in productivity, the Reserve Bank took several initiatives to popularize usage of technology by banks in India.

Periodically, almost once in five years since the early 1980s, the Reserve Bank appointed committees and working Groups to deliberate on and recommend the appropriate use of Technology by banks give the circumstances and the need. These committees are as follows:

- Rangarajan committee -1 in early 1980s.
- Rangarajan committee -11 in late 1980s.
- Saraf working group in early 1990s.
- Vasudevan working group in late 1990s.
- Barman working group in early 2000s.

Based on the recommendations of these committees and working groups, the Reserve Bank issued suitable guidelines for the banks. In the 1980s, usage of technology for the back office operations of the banks predominated the scene. It was in the form of accounting of transactions and collection of MIS. In the inter-bank payment systems, it was in the form of clearing and settlement using the MICR technology.

Two momentous decisions of the Reserve Bank in the 1990s changed the scenario for ever there are:
 a) The prescription of compulsory usage of technology in full measure by the new private sector banks as a precondition of the license and
 b) The establishment of an exclusive research institute for banking technology institute for development and Research in Banking Technology.

As the new private sector banks came on the scene as technology-savvy banks and offered several innovative products at the front office for the customers based on technology, the demonstration effect caught on the reset of the banks. Multi channel offerings like machine based (ATMs and pc-Banking), card based (credit/Debit/Smart cards), Communication based (Tele-Banking and Internet Banking) ushered in anytime and Anywhere Banking by the banks in India. The IDRBT has been instrumental in establishing a safe and secure, state of the art communication backbone in the form of the Indian Financial NET work (INFINET) as a closed user group exclusively for the banking and financial sector in India.

LITERATURE REVIEW

In order to improve operational efficiency, quality of customer service and to speed it up, the Committee on public Sector banks (1978) "recommended a judicious use of computers for selected services of banks. Apart from an increase in efficiency, it will reduce the load of routine and repetitive work and leave sufficient time for staff to provide better customer service.

In their study 'Services Marketing - Challenges and Strategies', Dr. Chidambaram and Ms.K.Alameleu (1996) suggested that banks should become technology friendly by investing in technology a bank can carve a niche for itself. Well-furnished premises are a must for the satisfaction of both employees and customers. Professionalized. Well-trained and motivated employees will improve the marketability of a bank."

Gaston Leblanc (1 990) studied customer motivations towards the use and nonuse of an Automated Teller Machine (ATM) customers of a financial institution. An analysis of results based on demographic variables revealed significant differences between users and nonusers in terms of education only. Results also show that convenient accessibility of a financial institution and

avoidance of waiting lines is the principal reasons for using the automated teller.41

Robert Rugimbana and Philip Iversen's study (1994) was to determine the association between consumer ATM usage patterns and their perceptions of ATM attributes by identifying those variables that distinguish users and non-users. The results based on a survey of 630 retail banking consumers from two separate Australian banking institutions suggest that successful marketing strategies must focus on the most important attributes of ATMs as well as identify different user groups and develop strategies to maximize their patronage.42

Mathew Joseph, Cindy McClure and Beatriz Joseph (1999) explored the use of technology in the delivery of banking services as it is being employed to reduce costs and eliminate uncertainties. Results indicated that consumers have perceptual problems with some aspects of electronic banking.43

Mark R Nclson (1999) studied the trends and patterns surrounding the interface between the marketing and information services functions within the financial services industry. It was found that many banks lack alignment or integration between their marketing and information services functions. Improving this cross-functional interface may lead to more effective use of information technology to support the marketing function in many banks.44

The study by Ali Yakhlef (2001) found that as more and more of the transaction processing load is taken over by technology, banks are concentrating on strengthening their marketing approach and re-inventing their business model. Traditional bank branches, with an infrastructure supporting transaction processing, were being transformed into an open-space interface within which bank experts engage intimately with their customers, delivering specialized, advisory services with more focus on retail banking.45

CHANGING FACE OF BANKING SERVICES

Liberalization brought several changes to Indian service industry. Probably Indian banking industry learnt a tremendous lesson. Pre-liberalization, all we did at a bank was deposit and withdraw money. Service standards were pathetic, but all we could do was grin and bear it. Post-liberalization, the tables have turned. It's a consumer oriented market there.

Technology is revolutionizing every field of human endeavor and activity. One of them is introduction of information technology into capital market. The internet banking is changing the banking industry and is having the major effects on banking relationship. Web is more important for retail financial services than for many other industries.

Retail banking in India is maturing with time, several products, which further could be customized. Most happening sector is housing loan, which is witnessing a cut-throat competition. The home loans are very popular as they help you to realize your most cherished dream. Interest rates are coming down and market has seen some innovative products as well. Other retail banking products are personal loan, education loan and vehicles loan. Almost every bank and financial institution is offering these products, but it is essential to understand the different aspects of these loan products, which are not mentioned in their colored advertisements.

The early 1980s were instrumental in the introduction of mechanization and computerizations in Indian banks. This was the period when banks as well as the RBI went very slow on mechanizations, carefully avoiding the use of 'computers' to avoid resistance from employee unions. However, this was the critical period acting as the icebreaker, which led to the slow and steady move towards large scale technology adoption.

COMPUTERIZATION

The process of computerisation marked the beginning of all technological initiatives in the banking industry. Computerisa-

tion of bank branches had started with installation of simple computers to automate the functioning of branches, especially at high traffic branches. Thereafter, Total Branch Automation was in use, which did not involve bank level branch networking, and did not mean much to the customer.

Computerisation in PSBs (%)

Category	FY07	FY08	FY09
Fully computerised branches (CBS and others)	85.6	93.7	95.0
Branches under CBS	44.4	67.7	79.4
Branches fully computerised (other than under CBS)	41.2	26.6	15.6
Partially computerised branches	13.4	6.3	5.0

Source: Trend and progress of banking in India, RBI

Networking of branches are now undertaken to ensure better customer service. Core Banking Solutions (CBS) is the networking of the branches of a bank, so as to enable the customers to operate their accounts from any bank branch, regardless of which branch he opened the account with. The networking of branches under CBS enables centralized data management and aids in the implementation of internet and mobile banking. Besides, CBS helps in bringing the complete operations of banks under a single technological platform.

CBS implementation in the Indian banking industry is still underway. The vast geographical spread of the branches in the country is the primary reason for the inability of banks to attain complete CBS implementation.

SATELLITE BANKING

Satellite banking is also an upcoming technological innovation in the Indian banking industry, which is expected to help in solving the problem of weak terrestrial communication links in many parts of the country. The use of satellites for establishing connectivity between branches will help banks to reach rural and hilly areas in a better way, and offer better facilities, particularly in relation to electronic funds transfers. However, this involves very high costs to the banks. Hence, under the proposal made by RBI, it would be bearing a part of the leased rentals for satellite connectivity, if the banks use it for connecting the north eastern states and the under banked districts.

DEVELOPMENT OF DISTRIBUTION CHANNELS

The major and upcoming channels of distribution in the banking industry, besides branches are ATMs, internet banking, mobile and telephone banking and card based delivery systems.

AUTOMATIC TELLER MACHINES

ATMs were introduced to the Indian banking industry in the early 1990s initiated by foreign banks. Most foreign banks and some private sector players suffered from a serious handicap at that time- lack of a strong branch network. ATM technology was used as a means to partially overcome this handicap by reaching out to the customers at a lower initial and transaction costs and offering hassle free services. Since then, innovations in ATM technology have come a long way and customer receptiveness has also increased manifold. Public sector banks have also now entered the race for expansion of ATM networks. Development of ATM networks is not only leveraged for lowering the transaction costs, but also as an effective marketing channel resource.

Growth of ATM Network in the Country



Source: RBI

RTGS

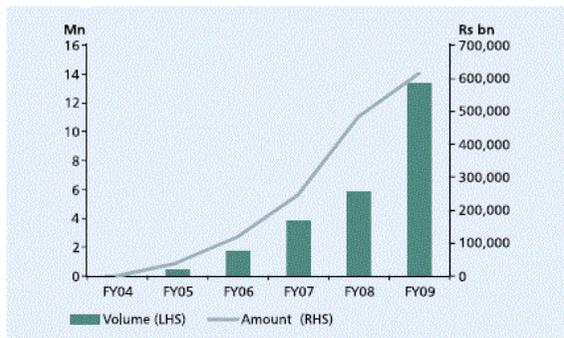
The other payment and settlement systems deployed were mostly aimed at small value repetitive transactions, largely for the retail transactions. The introduction of RTGS in 2004 was instrumental in the development of infrastructure for Systemically Important Payment Systems (SIPS).



The payment system in India largely followed a deferred net settlement regime, which meant that the net amount was settled between banks on a deferred basis. This posed significant settlement risks. RTGS was launched by RBI, which enabled a real time settlement on a gross basis. To ensure that RTGS system is used only for large value transactions and retail transactions take an alternate channel of electronic funds transfer, a minimum threshold of one lakh rupees was prescribed for customer transactions under RTGS on January 1, 2007.

RTGS minimizes systemic risks too, in addition to settlement risks, as paper based funds settlement through the Interbank clearing are replaced by the electronic, credit transfer based RTGS system. High systemic risks are posed by high value interbank transfers, so, it is considered desirable that all major interbank transfers among commercial banks having accounts with RBI be routed only through the RTGS system. The RTGS system had a membership of 107 participants (96 banks, 8 primary dealers, the Reserve Bank and the Deposit Insurance, Credit Guarantee Corporation and Clearing Corporation of India Ltd.) as at end-August 2009. The reach and utilisation of the RTGS has witnessed a sustained increase since its introduction in 2004. The bank/branch network coverage of the RTGS system increased to 58,720 branches at more than 10,000 centres facilitating the increased usage of this mode of funds transfer.

Progress in RTGS Transactions



Source: RBI

PLASTIC MONEY

Plastic money was a delicious gift to Indian market. Giving respite from carrying too much cash. Now several new features added to plastic money to make it more attractive. It work on formula purchase now repay later. There are different facts of plastic money credit card is synonyms of all.

Credit card is a financial instrument, which can be used more than once to borrow money or buy products and services on credit. Banks, retail stores and other businesses generally issue these. On the basis of their credit limit, they are of different kinds like classic, gold or silver.

Charged cards-these too carry almost same features as credit cards. The fundamental difference is you can not defer payments charged generally have higher credit limits or some times no credit limits.

Debit cards-this card is may be characterized as accountholder's mobile ATM, for this you have to have account with any bank of fering credit card.

Over the years, the banking sector in India has seen a no. of changes. Most of the banks have begun to take an innovative approach towards banking with the objective of creating more value for customers and consequently, the banks. Some of the significant changes in the banking sector are discussed below.

MOBILE BANKING

Taking advantages of the booming market for mobile phones and cellular services, several banks have introduced mobile banking which allows customers to perform banking transactions using their mobile phones. For instances HDFC has introduced SMS services. Mobile banking has been especially targeted at people who travel frequently and to keep track of their banking transaction.

RURAL BANKING

One of the innovative scheme to be launched in rural banking was the KISAN CREDIT CARD (KCC) SCHMME started in fiscal 1998-1999 by NABARD. KCC mode it easier for framers to purchase important agricultural inputs. In addition to regular agricultural loans, banks to offer several other products geared to the needs of the rural people. Private sector Banks also realized the potential in rural market. In the early 2000's ICICI bank began setting up internet kiosks in rural Tamilnadu along with ATM machines.

NRI SERVICES

With a substantial number of Indians having relatives abroad, banks have begun to offer service that allows expatriate Indians to send money more conveniently to relatives India which is one of the major improvements in money transfer.

E-BANKING

Technology has creating e-banking or electronic banking. E-Banking can be defined as the automated delivery of new and traditional banking services and products directly to customers through electronic, interactive communication channels.

Technology has affected and changed banking with the many benefits and convenience e-banking has created. It includes the system that enables bank customers to access accounts, transact business or obtain information on financial products and services. Customers can now quickly complete transactions such as 5-10 minute deposits/withdrawals to 30-60secs ATM deposits/withdrawals ,online checking accounts, online transfers and many e-banking transactions. The accessibility of e-banking has been possible due to the technological advancement in laptops or personal computers, kiosk, Touch Tone phones, personal digital assistant (PDA) and automated teller machines (ATM). According to industry analysts (BNET.com), electronic banking provides a variety of attractive possibilities for remote account access, including: Availability of inquiry and transaction services around the clock; worldwide connectivity; Easy access to transaction data, both recent and historical; and "Direct customer control of international movement of funds without intermediation of financial institutions in customer's jurisdiction.

E-Banking is becoming increasingly popular among retail banking customers. E-Banking helps in cutting costs by providing cheaper and faster ways of delivering products to customers. It also helps the customer to choose the time, place and method by which he wants to use the services and gives effect to multichannel delivery of service by the bank. This E-Banking is driven by twin engine of "customer-pull and Bank-push".

IMPACT OF TECHNOLOGY ON BANKING

Technology has influenced all aspects of banking activities including storage, processing, and collection of information. There are a few areas in banking that has been seriously influenced or impacted which includes;

Tracking lending worthiness (Credit Scores)

Technology has created or led to the creation of the credit bureau. The system mathematically tracks customer's payment records to provide data which help banks make decisions on the amount and who they should borrow money to. The advance

technology available has developed a scalable and resilient credit bureau platform that enables banks to track customer's necessary information. Technology has enable software programs which has provided banks with input file preparation tools, validation tools and data entry tools. Collecting data allows banks to deliver credit reporting solutions in the form of credit reports, customer credit activity monitoring, fraud prevention systems and debtor tracking services. Today, the technologies in credit bureau infrastructures have enabled banks to collect, load, validate, store and disseminate both the positive and negative data as well as supplementary data (e.g. court judgments, legal issues etc). The development and management of the information technology for the Credit Bureau has provided control over all processes involving the credit bureau as it relates to the banking industry. Some of the systems used in the credit bureau includes; C++, C Sharp and Java, Oracle & SQL. All these programs contribute significantly in the whole operation of the credit bureau. The typical cycle and function of the credit bureau as it relates to banks includes; storing information-credit histories, observing fraudulent behavior, previous enquires, validating data and many more

The Economy and Economy of Scale

Competition has forced banks to lower the cost or interest rates. Bank mortgages have recently Banks try to achieve economy of scale in banking procession instead of trying to be bigger banks (acquiring more assets, taking more risk etc). The current state of the economy has also lead banks to tighten their lending and restrict their lending guidelines. Banks seek to secure the best and most technologically advanced business structure and secure competitiveness of economy of scales.

Banks Contestability

Technology is affecting the degree of contestability in banks. Due to the advancement of technology, banks superiority in information is deteriorated. New competitors have emerged and the many barriers provided by banks have been declining and security breach is more imminent today. Some financial products, services and commodities are becoming more transparent. Due to the lowered entry and deconstruction of some banks, contestability in banking is rising

Technology Influence the Economics of delivery

The advancement of technology has influenced the methods banks use to deliver financial products to its customers. Technology has created alternative delivery mechanisms such as the internet, electronic transferred, ATMs, and many others which all reduce the dependence on the network as a core delivery mechanism. Now, financial systems are substantially over-supplied with delivery systems through a duplication of networks which allows or encourages the banks to change their delivery strategy, rationalize their branch network strategy and provide or develop a wide variety of delivery options.

Internet Banking

An internet bank can be defined as a bank that provides account balances and some transaction capabilities to retail customers over the World Wide Web. Technology has created internet banking, also called online banking. The creation of the internet through technology has lead to many banking transactions or activity options via the internet. Some of these activities

includes; paying bills, 24 hour view of accounts, transferring money and many others.

Customers access their banking information from a browser-software that runs the banking programs on the World Wide Web (www). Customers can personally and privately access their account information through the internet via a modem. Technology has allowed us to dial into the bank via the modem system which allows us to download data, and run programs that make us access a wide variety of banking information such as; account balances, number and types of banking transactions, bank statements, among others. On the downside, the internet has decreased operation and transaction at physical-brick and mortar banks as customer can basically conduct almost all the transaction possible in a real bank. Today, technology has helped create many banks which have no physical location or brick and mortar branches.

CONCLUSION

Banks are basically surviving or in existence today due to technology. Technology has created better tools for evaluation credit worthy customers (Credit check and credit bureau), storing customers information and secure all the valuable information which if placed in the wrong hands can cost us millions of dollars. This can also have a negative impact on the economy as banks would tighten their lending requirements and charge higher interest rates to make up for the lost which would be created due to lack of security, storage and other technological advancement. Thanks to technology, our information is safe, protected and we can feel confident that the money we put in the bank will be there where we want.

Technology had changed the way people obtain financial services. It has also save time and money allowing people to conduct banking efficiently. Technology has helped banking transform from bulk paper and waste to paperless communication and means of transferring funds. The technology evolved includes telephone banking (telephone technology), credit cards, debit cards (money transfer technology), electronic money, and automatic teller machines.(2) These technologies have created efficiency and time saving methods of conducting business for people. Some importantly, technology has lead to tighter security and safer methods of conducting business for everyone. Bank security or compliance officers use computers and technology to help ensure that banks understand, follows guidelines and control the risk of the complex and new world of financial services. Security has changes over many years through the advancement of technology, evolving from manual examining fraudulent activities to using advance computers and program that can identify fraudulent activities, checks, and even viruses (new age threat to banking). Technology advancement in banks has lead to convenience, speed, time saving and cheaper methods of conducting banking. Today, many people are slowly deleting traditional methods of utilizing financial services or money such as the change from checks to debit/credit cards and automatic payment.

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