

INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE, IT & MANAGEMENT

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JOURNAL AND OTHER ARTICLES

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INFORMATION TECHNOLOGY IN BANKING SECTOR

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ABSTRACT

Financial institutions, particularly banks rely heavily on gathering, processing, analyzing, and providing information in order to meet the needs of customers. The last decade the banking industry has been in the process of fundamental changes. These changes brought new competitors into the marketplace. Banks have become more customer-orientated aiming at the satisfaction of their customers. Initiation of Information Technology and Communications networking system is set to change the operating environment of banks drastically. Technology has already enabled some of the banks to introduce innovative products to their customers in the form of ATM facility, Telebanking, Home Banking, 'Anytime' and 'Anywhere' banking, etc. Technological advances have allowed banks to provide innovative, new services or improvements in quality and convenience that attract new customers and increase demand. Technological innovations have enabled the industry to open up efficient delivery channels. It is said that IT has helped the banking industry to deal with the challenges the new economy poses. In this paper, an attempt has been made to discuss the various developments done in Banking Sector with their applications in different areas like customer, working of banks and employees. Also various services which are being offered by the banks to the customers is the focus of this paper. But these innovations produce some challenges as well which are also the part of this research paper.

KEYWORDS

Technology, Innovation, Banking, Customer-oriented.

INTRODUCTION

The usage of information technology (IT), broadly referring to computers and peripheral equipment, has seen tremendous growth in service industries in the recent past. With the globalization trends world over it is difficult for any nation big or small, developed or developing, to remain isolated from what is happening around. For a country like India, which is one of the most promising emerging markets, such isolation is nearly impossible. More particularly in the area of Information technology, where India has definitely an edge over its competitors, remaining away or uniformity of the world trends is untenable. The most obvious example is perhaps the banking industry, where through the introduction of IT related products in internet banking, electronic payments, security investments, information exchanges (Berger, 2003), banks now can provide more diverse services to customers with less manpower. The explosion of technology is changing the banking industry from paper and branch banks to digitized and networked banking services. It has already changed the internal accounting and management systems of banks. It is now fundamentally changing the delivery systems banks use to interact with their customers. All over the world, banks are still struggling to find a technological solution to meet the challenges of a rapidly-changing environment. It is clear that this new technology is changing the banking industry forever. Banks with the ability to invest and integrate information technology will become dominate in the highly competitive global market. Bankers are convinced that investing in IT is critical. Its potential and consequences on the banking industry future is enormous. Seeing this pattern of growth, it seems obvious that IT can bring about equivalent contribution to profits. Commercial Banks in India are now becoming a one-stop Supermarket. The focus is shifting from mass banking to class banking with the introduction of value added and customized products. Technology allows banks to create what looks like a branch in a business building's lobby without having to hire manpower for manual operations.

EVOLUTION OF TECHNOLOGY IN INDIAN BANKING

First, it started off with computerization of a few key functions and departments in principal branches through adoption of what I called earlier, advanced ledger posting machines. These systems were designed to take care of the accounts related functions of the banks which were at the heart of banking operations and which had assumed great significance in terms of the need for accuracy and control. Second, the next progress was towards branch automation. This enabled setting up of "Single Window Service" facilities which were focused on the customers. Third, there was the emergence of network based operations which were aimed at providing interbank connectivity. Fourth, an important stage in the evolution of the user friendly technology arrived with the deployment of ATMs and the adoption of Core Banking Solution which radically transformed the way banking was done in India both by bankers and customers. Fifth, with the setting up of IDRBT, three most important technology infrastructures were created and these were INFINET in 1999, the implementation of PKI based electronic data transfer and the Structured Financial Messaging System (SFMS) which facilitated the development of secured payment system practice in India. Sixth, a slew of innovations in newer delivery channels like internet banking, mobile banking and pre-paid cards issued by non-banking entities emerged. India also became a member of the Basle Committee of Payment Settlement systems.

PILLARS

In India, banks as well as other financial entities entered the world of information technology and with Indian Financial Net (INFINET). INFINET, a wide area satellite based network (WAN) using VSAT (Very Small Aperture Terminals) technology, was jointly set up by the Reserve Bank and Institute for Development and Research in Banking Technology (IDRBT) in June 1999.

The Indian Financial Network (INFINET) which initially comprised only the public sector banks was opened up for participation by other categories of members. The first set of applications that could benefit greatly from the use of technological advances in the computer and communications area relate to the Payment systems which form the lifeline of any banking activity. The process of reforms in payment and settlement systems has gained momentum with the implementation of projects such as NDS (Negotiated Dealing System), CFMS (Centralized Funds Management System) for better funds management by banks and SFMS (Structured Financial Messaging Solution) for secure message transfer. This would result in funds transfers and funds-related message transfer to be routed electronically across banks using the medium of the INFINET. Negotiated dealing system (NDS), which has become operational since February 2002 and RTGS (Real Time Gross Settlement system) scheduled towards the end of 2003 are other major developments in the area. Internet has significantly influenced delivery channels of the banks. Internet has emerged as an important medium for delivery of banking products & services. Detailed guidelines of RBI for Internet Banking has prepared the necessary ground for growth of Internet Banking in India. The Information Technology Act, 2000 has given legal recognition to creation, transmission and retention of an electronic (or magnetic) data to be treated as valid proof in a court of law, except in those areas, which continue to be governed by the provisions of the Negotiable Instruments Act, 1881.

DEVELOPMENT OF IT IN BANKING SECTOR

Developments in the field of information technology strongly support the growth and inclusiveness of the banking sector by facilitating inclusive economic growth. IT improves the front end operations with back end operations and helps in bringing down the transaction costs for the customers. The important events in the field of IT in the banking sector in India are:

- SWIFT as a co-operative society was formed in May 1973.
- Arrival of card-based payments- Debit/ Credit card in late 1980s and 90s.
- Introduction of Electronic Clearing Services (ECS) in late 1990s.
- Introduction of Electronic Fund Transfer (EFT) in early 2000s.
- Introduction of RTGS in March 2004.
- Introduction of National Electronic Fund Transfer (NEFT) as a replacement to Electronic Fund Transfer/Special Electronic Fund Transfer in 2005/2006.
- CTS in 2007.

Computers are getting more sophisticated. They have given banks a potential they could only dream about and have given bank customers high expectations. The changes that new technologies have brought to banking are enormous in their impact on officers, employees, and customers of banks. Advances in technology are allowing for delivery of banking products and services more conveniently and effectively than ever before - thus creating new bases of competition. Rapid access to critical information and the ability to act quickly and effectively will distinguish the successful banks of the future. The bank gains a vital competitive advantage by having a direct marketing and accountable customer service environment and new, streamlined business processes. Consistent management and decision support systems provide the bank that competitive edge to forge ahead in the banking marketplace.

APPLICATIONS OF IT IN BANKS

With the advancement of IT in the banking sector, the three –directional advantages have been achieved i.e. to the customer, to the bank and to the employee.

FOR THE CUSTOMER

Banks are aware of customer's need for new services and plan to make them available. IT has increased the level of competition and forced them to integrate the new technologies in order to satisfy their customers. They have already developed and implemented a certain number of solutions among them:

- Self-inquiry facility: Facility for logging into specified self-inquiry terminals at the branch to inquire and view the transactions in the account.
- Remote banking: Remote terminals at the customer site connected to the respective branch through a modem, enabling the customer to make inquiries regarding his accounts, on-line, without having to move from his office.
- Anytime banking- Anywhere banking: Installation of ATMs which offer non-stop cash withdrawal, remittances and inquiry facilities. Networking of computerized branches inter-city and intra-city, will permit customers of these branches, when interconnected, to transact from any of these branches.
- Telebanking: A 24-hour service through which inquiries regarding balances and transactions in the account can be made over the phone.
- Electronic Banking: This enables the bank to provide corporate or high value customers with Graphical User Interface (GUI) software on a PC, to inquire about their financial transactions and accounts, cash transfers, cheque book issue and inquiry on rates without visiting the bank. Moreover, LC text and details on bills can be sent by the customer, and the bank can download the same. The technology used to provide this service is called electronic data interchange (EDI). It is used to transmit business transactions in computer-readable form between organizations and individuals in a standard format.
- As information is centralized and updates are available simultaneously at all places, single-window service becomes possible, leading to effective reduction in waiting time.

FOR THE BANK

During the last decade, banks applied IT to a wide range of back and front office tasks in addition to a great number of new products. The major advantages for the bank to implement IT are:

- Availability of a wide range of inquiry facilities, assisting the bank in business development and follow-up.
- Immediate replies to customer queries without reference to ledger-keeper as terminals are provided to Managers and Chief Managers.
- Automatic and prompt carrying out of standing instructions on due date and generation of reports.
- Generation of various MIS reports and periodical returns on due dates.
- Fast and up-to-date information transfer enabling speedier decisions, by interconnecting computerized branches and controlling offices.

FOR THE EMPLOYEES

IT has increased their productivity through the followings:

- Accurate computing of cumbersome and time-consuming jobs such as balancing and interest calculations on due dates.
- Automatic printing of covering schedules, deposit receipts, pass book / pass sheet, freeing the staff from performing these time-consuming jobs, and enabling them to give more attention to the needs of the customer.
- Signature retrieval facility, assisting in verification of transactions, sitting at their own terminal.
- Avoidance of duplication of entries due to existence of single-point data entry.

TECHNOLOGY VENDORS

Many Indian banks handled technological issues in house till the late 1990s. Thereafter, the complications of the business necessitated the engagement of specialized vendors to handle complex issues. Due to the complexities involved, most banks now prefer to engage IT vendors to introduce specialized softwares to help in their risk management systems, retail and corporate banking, card management systems, complete back office support including data management systems.

Vendor	Flagship Products and Flagships
i-flex solutions (Oracle Financial Services Software limited)	<ul style="list-style-type: none"> • Flex cube-core banking solutions, retail, corporate, core banking, internet banking, investor servicing and asset management. • Other offerings include Flexcube lending suite, Flexcube for Islamic banking, Private banking. • Reveleus-risk management solutions. • Mantas-risk and compliance solutions.
Infosys	Finacle-core banking solutions, e-banking, CRM, treasury, cash management, wealth management, Islamic banking etc.
TCS	TCS BaNCs- suite of solutions covering banking, capital market and insurance firms 28.5
Nucleus Software	<ul style="list-style-type: none"> • Finnone –comprehensive suit of software for retail banking applications. • Cash@ will-cash management. • TRADe facto- trade finance. • BankOnet- Internet banking. • PowerCard-credit cards. • FME-fraud Management System

Source: D&B Industry Research Service

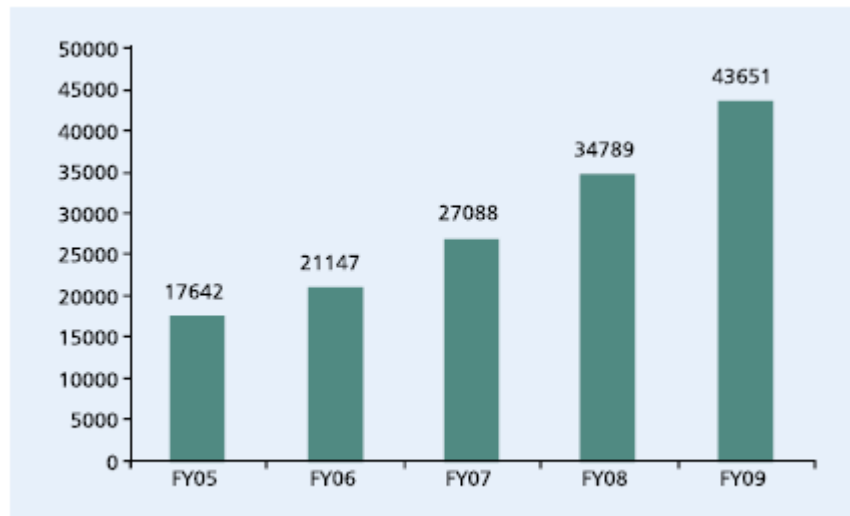
INNOVATIVE SERVICES OFFERED BY BANKING SECTOR

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 IN COUNTRY



Source: RBI

INTRODUCTION OF BIOMETRICS

Banks across the country have started the process of setting up ATMs enabled with biometric technology to tap the potential of rural markets. A large proportion of the population in such centers does not adopt technology as fast as the urban centers due to the large scale illiteracy. Development of biometric technology has made the use of self service channels like ATMs viable with respect to the illiterate population. Though expensive to install, the scope of biometrics is expanding rapidly. It provides for better security system, by linking credentials verification to recognition of the face, fingerprints, eyes or voice. Some large banks of the country have taken their first steps towards large scale introduction of biometric ATMs, especially for rural banking. At the industry level, however, this technology is yet to be adopted; the high costs involved largely accounting for the delay in adoption.

MULTILINGUAL ATMs

Installation of multilingual ATMs has also entered pilot implementation stage for many large banks in the country. This technological innovation is also aimed at the rural banking business believed to have large untapped potential. The language diversity of India has proved to be a major impediment to the active adoption of new technology, restrained by the lack of knowledge of English.

MULTIFUNCTIONAL ATMs

Multifunctional ATMs are yet to be introduced by most banks in India, but have already been recognized as a very effective means to access other banking services. Multifunctional ATMs are equipped to perform other functions, besides dispensing cash and providing account information. Mobile recharges, ticketing, bill payment, and advertising are relatively new areas that are being explored via multifunctional ATMs, which have the potential to become revenue generators for the banks by effecting sales, besides acting as delivery channels. Most of the service additions to the ATM route require specific approval from the regulator.

ATM NETWORK SWITCHES

ATM switches are used to connect the ATMs to the accounting platforms of the respective banks. In order to connect the ATM networks of different banks, apex level switches are required that connect the various switches of individual banks. Through this technology, ATM cards of one bank can be used at the ATMs of other banks, facilitating better customer convenience. Under the current mechanism, banks owning the ATM charge a fee for allowing the customers of some other bank to access its ATM.

Among the various ATM network switches are CashTree, BANCS, Cashnet Mitr and National Financial Switch. Most ATM switches are also linked to Visa or MasterCard gateways. In order to reduce the cost of operation for banks, IDRBT, which administers the National Financial Switch, has waived the switching fee with effect from December 3, 2007.

INTERNET BANKING

Internet banking in India began taking roots only from the early 2000s. Internet banking services are offered in three levels. The first level is of a bank's informational website, wherein only queries are handled; the second level includes Simple Transactional Websites, which enables customers to give instructions, online applications and balance enquiries. Under Simple Transactional Websites, no fund based transactions are allowed to be conducted. Internet banking in India has reached level three, offering Fully Transactional Websites, which allow for fund transfers and various value added services.

Internet banking poses high operational, security and legal risks. This has restrained the development of internet banking in India. The guidelines governing internet banking operations in India covers a number of technological, security related and legal issues to be addressed in relation to internet banking. According to the earlier guidelines, all internet banking services had to be denominated in local currency, but now, even foreign exchange services, for the permitted underlying transactions, can be offered through internet banking.

Internet banking can be offered only by banks licensed and supervised in India, having a physical presence in India. Overseas branches of Indian banks are allowed to undertake internet banking only after satisfying the host supervisor in addition to the home supervisor.

POINT OF SALE TERMINAL

Point of Sale Terminal is a computer terminal that is linked online to the computerized customer information files in a bank and magnetically encoded plastic transaction card that identifies the customer to the computer. During a transaction, the customer's account is debited and the retailer's account is credited by the computer for the amount of purchase.

PHONE BANKING AND MOBILE BANKING

Phone and mobile banking are a fairly recent phenomenon for the Indian banking industry. There exist operative guidelines and restrictions on the type and quantum of transactions that can be undertaken via this route. Phone banking channels function through an Interactive Voice Response System (IVRS) or telebanking executives of the banks. The transactions are limited to balance enquiries, transaction enquiries, stop payment instructions on cheques and funds transfers of small amounts (per transaction limit of Rs 2500, overall cap of Rs 5000 per day per customer). According to the draft guidelines on mobile banking, only banks which are licensed and supervised in India and have a physical presence in India are allowed to offer mobile banking services. Besides, only rupee based services can be offered. Mobile banking services are to be restricted to bank account and credit card account holders which are KYC and AMC compliant.

With the rapidly growing mobile penetration in the country, mobile banking has the potential to become a mass banking channel, with very minimum investment required by the banks. However, more security issues need to be addressed before banking can be conducted more freely via this channel.

CARD BASED DELIVERY SYSTEMS

Among the card based delivery mechanisms for various banking services, are credit cards, debit cards, smart cards etc. These have been immensely successful in India since their launch. Penetration of these card based systems have increased manifold over the past decade. Aided by expanding ATM networks and Point of Sale (POS) terminals, banks have been able to increase the transition of customers towards these channels, thereby reducing their costs too.

PAYMENT AND SETTLEMENT SYSTEMS

The innovations in technology and communication infrastructure in recent years have impacted banks in a large way through the development of payment and settlement systems, which are central to the major portion of the businesses of banks.

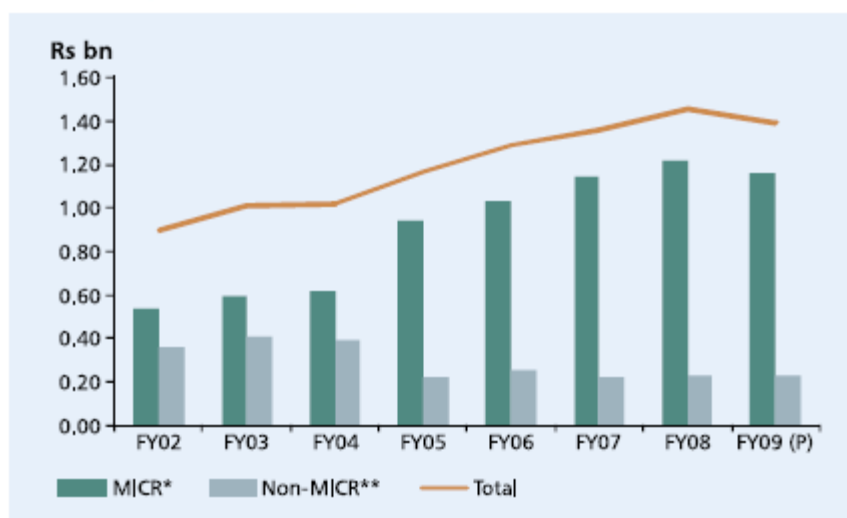
In order to strengthen the institutional framework for the payment and settlement systems in the country, the RBI constituted, in 2005, a Board for Regulation and Supervision of Payment and Settlement Systems (BPSS) as a Committee of its Central Board. The BPSS now lays down policies relating to the regulation and supervision of all types of payment and settlement systems, sets standards for existing and future systems, approves criteria for authorization of payment and settlement systems, and determines criteria for membership to these systems, including continuation, termination and rejection of membership. Thereafter, the government and the RBI felt the need for a legal framework dedicated to the efficient functioning of the payment and settlement systems. The Payment and Settlement Systems Act was passed in December 2007, which empowered the RBI to regulate and supervise the payment and settlement systems and provided a legal basis for multilateral netting and settlement.

Important technological innovations in payment and settlement systems introduced by the RBI in recent years are discussed here.

PAPER BASED CLEARING SYSTEMS

Among the most important improvement in paper based clearing systems was the introduction of MICR technology in the mid 1980s. Though improvements continued to be made in MICR enabled instruments, the major transition is expected now, with the implementation of the Cheque Truncation System for the processing of cheques.

CHEQUE CLEARING



Source: RBI

CHEQUE TRUNCATION SYSTEM (CTS)

Truncation is the process of stopping the movement of the physical cheque which is to be truncated at some point en-route to the drawee branch and an electronic image of the cheque would be sent to the drawee branch along with the relevant information like the MICR fields, date of presentation, presenting banks etc. Thus, the CTS reduces the probability of frauds, reconciliation problems, logistics problems and the cost of collection.

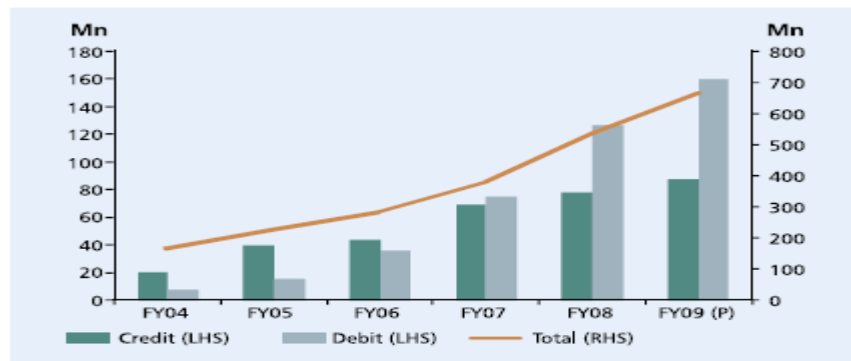
The cheque truncation system was launched on a pilot basis in the National Capital Region of New Delhi on February 1, 2008, with the participation of 10 banks. The main advantage of the cheque truncation system is that it obviates the physical presentation of the cheque to the clearing house. Instead, the electronic image of the cheque would be required to be sent to the clearing house. This would provide a more cost-effective mode of settlement than manual and MICR clearing, enabling realization of cheques on the same day. Amendments have already been made in the NI Act to give legal recognition to the electronic image of the truncated cheque, providing for a sound legal framework for the introduction of CTS.

Currently the effort is on increasing the processing efficiency with respect to paper based transactions, and as far as possible, to reduce the burden on paper based clearing. Through the introduction of advanced electronic funds transfer mechanisms, the RBI has been successful in diverting a large portion of paper based transactions to the electronic route.

ELECTRONIC CLEARING SERVICE

The Electronic Clearing Service (ECS) introduced by the RBI in 1995, is akin to the Automated Clearing House system that is operational in certain other countries like the US. ECS has two variants- ECS debit clearing and ECS credit clearing service. ECS credit clearing operates on the principle of 'single debit multiple credits' and is used for transactions like payment of salary, dividend, pension, interest etc. ECS debit clearing service operates on the principle of 'single credit multiple debits' and is used by utility service providers for collection of electricity bills, telephone bills and other charges and also by banks for collections of principal and interest repayments. Settlement under ECS is undertaken on T+1 basis. Any ECS user can undertake the transactions by registering themselves with an approved clearing house.

ECS TRANSACTIONS



Source: RBI

ELECTRONIC FUNDS TRANSFER SYSTEMS

The launch of the electronic funds transfer mechanisms began with the Electronic Funds Transfer (EFT) System. The EFT System was operationalised in 1995 covering 15 centres where the Reserve Bank managed the clearing houses.

Special EFT (SEFT) scheme, a variant of the EFT system, was introduced with effect from April 1, 2003, in order to increase the coverage of the scheme and to provide for quicker funds transfers. SEFT was made available across branches of banks that were computerized and connected via a network enabling transfer of electronic messages to the receiving branch in a straight through manner (STP processing). In the case of EFT, all branches of banks in the 15 locations were part of the scheme, whether they are networked or not.

A new variant of the EFT called the National EFT (NEFT) was decided to implemented (November 2005) so as to broad base the facilities of EFT. This was a nation wide retail electronic funds transfer mechanism between the networked branches of banks. NEFT provided for integration with the Structured Financial Messaging Solution (SFMS) of the Indian Financial Network (INFINET). The NEFT uses SFMS for EFT message creation and transmission from the branch to the bank's gateway and to the NEFT Centre, thereby considerably enhancing the security in the transfer of funds. While RTGS is a real time gross settlement funds transfer product, NEFT is a deferred net settlement funds transfer product. As the NEFT system stabilized over time, the number of settlements in NEFT was increased from the initial two to six. NEFT now provides six settlement cycles a day and enables funds transfer to the beneficiaries account on T+0 basis, bringing it closer to real time settlement.

The commencement of NEFT led to discontinuation of SEFT, and EFT is now available only for government payments. With the SFMS facility, branches can participate in both the RTGS and the NEFT System. It is envisioned that all the RTGS enabled bank branches would be NEFT-enabled too, so that the customer would have a choice between RTGS or NEFT, based on time urgency, value of the transaction and different charges applicable on the two systems. Using the NEFT infrastructure, a one-way remittance facility from India to Nepal has also been implemented by the RBI since 15th May 2008.

In order to increase the coverage of NEFT to a wider section of bank customers in semi-urban and rural areas, an enhancement of the NEFT called the NEFT-X [National EFT (Extended)] is also proposed for phase wise implementation. This would facilitate non-networked branches of banks to transfer funds electronically by accessing NEFT-enabled branches for transfer of funds. NEFT (Extended) would work on a T+1 basis and would ensure wide rural coverage of the electronic funds transfer system.

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).

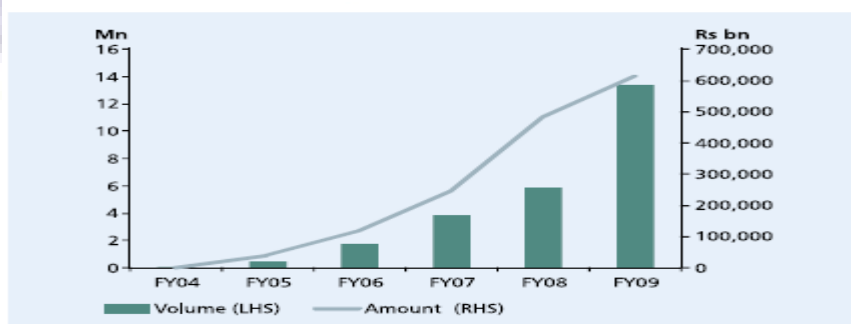
Categories under SIPS:

- The Interbank Clearing System.
- The High Value Clearing System.
- The equities Clearing and Settlement systems of the Stock Exchange systems.
- The MICR clearing systems.
- The Government Securities Clearing Systems.
- The Foreign Exchange Clearing Systems.
- The Real Time Gross Settlement Systems.

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 utilization 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

DRAWBACKS OF IT IN BANKING SECTOR

Likewise coin has two faces, IT has two facets. One is a positive scenario in which the innovations in the field of IT has provided various applications with the use of which the banking sector has developed a lot. But on the other hand, there are various challenges because of highly competitive environment and employees' resistance towards changes. The choice of right channel, justification of IT investment on ROI, e-governance, customer relationship management, security concerns, technological Obsolescence, mergers and acquisitions, penetration of IT in rural areas, and outsourcing of IT operations are the major challenges and issues in the use of IT in banking operations.

Business Challenges	Operational Challenges
Meet customer expectations on service and facility offered by the bank.	Frequent challenges in technologies used focusing up grades in hardware and software, attending to that implementation issues and timely roll out.
Customer retention.	Managing technology, security and business risks.
Managing the spread and sustain the operating profit	System re-engineering to enable. Defined and implemented efficient processes to be able to reap benefits off technology to its fullest potential.
Retaining the current market share in the industry and the improving the same.	Upgrading the skill of work force spread across the country.

So, there is a need to focus on various initiatives for up gradation of technology in banking sector and most important is the implementation of the developed technologies. Many initiatives can be taken into consideration for fully utilizing the IT techniques. Like, completion of correct MIS details in all accounts, Customer/ Account data completion/correction, Customer-ID crystallization, Aggressive marketing of Internet Banking & Debit Card products to increase share of delivery channels transaction, Skill up gradation & increase in awareness of all staff member, Strict compliance of Circular & Guidance available online (CBSINFO)/ Messages issued through scrolling ticker on login page etc.

CONCLUSION

The basic structure of the banking sector is increasingly in conflict with the changing product, delivery, and service needs of the customers. The future belong to financial service provider's not traditional banks. The vast majority of large banks will create value networks. Doing so presents tremendous challenges. Banks will have to first develop a comprehensive distribution system that will enable customers to touch them at multiple points. Banks must also create performance measurement systems to assure the mix products and services they offer are beneficial to both the customer and the bank. They must determine whether to deploy new technologies themselves or with other service providers. Nevertheless, technology alone will not solve issues or create advantages. This technology needs to be integrated in an organization, with the change management issues linked to people resisting new concepts and ideas. It also needs to support a clearly defined and well communicated business strategy.

REFERENCES

1. A M Rawani and M P Gupta, (2002) "Role of Information Systems in Banks: An Empirical Study in the Indian Context, Vikalpa "Vol. 27, No. 4, ,"
2. Aditi Mittal, Sumit Gupta (2013) "EMERGING ROLE OF INFORMATION TECHNOLOGY IN"
3. Austin T (2007), Getting down to business information and Communication Technology Handbook in FINWEEK November 29, p. 2
4. BANKING SECTOR'S DEVELOPMENT OF INDIA" Acme International Journal of Multidisciplinary Research: Volume – I, Issue – IV
5. Bankley W, Scerri M, Saloojee I (2006). Measuring Innovation in OECD and non-OECD countries: Selected Seminar papers, Cape Town: Human Sciences Research Council.
6. Berger AN (2003). The economic effects of technological progress: Evidence from the banking industry. J. Money Credit Bank, 35(2): 141-176
7. Chanaka Jayawardhena, Paul Foley, "Changes I the banking sector- the Case of Internet banking in the UK", Internet Research; Electronic Networking Application and Policy, Vol. 10, No. 1, 2000, pp. 19-30
8. Indian Banking 2010 Special issue 2004, vol. 26 No I, IBA bulletin, IBA Mumbai
9. Ishan Kelvalka, "Role of Information Technology in the Banking Sector"
10. Kulkarni, P G (1997). "Trends and Effectiveness of IT in Banking Sector," in Kanungo, Shivraj (ed.), Information Technology at Work — A Collection of Managerial Experiences, New Delhi: Hindustan Publishing Corporation.
11. M. Musara* and O. Fatoki (2010.) "Has technological innovations resulted in increased efficiency and cost savings for banks' customers?" African Journal of Business Management Vol. 4(9), pp. 1813-1821,
12. M.C. Sharma, Abhinav Sharma, "Role of Information Technology in Indian Banking Sector" SHIV SHAKTI:, International Journal in Multidisciplinary and Academic Research (SSIJMAR) Vol. 2, No. 1, January-February (ISSN 2278 – 5973)
13. Megha Jain ,G. S. Popli (2012): Role of Information Technology in the Development of Banking Sector in India: Available at SSRN.
14. Pathrose P P (2001), —Hi Tech. Banking Prospects and Problem||, IBA Bulletin, Vol. 13, No.7.
15. Qayyum A, Khan S (2007). X-efficiency, Scale Economies, Technological Progress and Competition: A Case of Banking Sector in Pakistan. Islamabad Pakistan Institute of Development
16. Rangarajan, C (1997). "Development of Banking Technology in India," National Bank News Review, April-June, pp 1-6.
17. Reddy, Y.V. (1998) "Financial Sector Reforms: Review and Prospects". RBI Bulletin, December.
18. Reserve Bank of India (1991) Report of the Committee on the Financial System (Chairman Shri M.Narasimham).
19. Reserve Bank of India, Annual Report, various years.
20. Salmana Jafri, "Emergence In Banking In India:, The Journal of Business & Economics Studies, vol. V-II , pp, 81-85.
21. Scott M. Davis, Kristin Moe, "Bringing Innovation to Life", Journal of Consumer Marketing, Vol. 14, No. 5, 1997, pp. 340-341.
22. Uppal R.K., —Customer Perception of E – Banking Services of Indian Banks: Some Survey Evidence, The ICFAI Journal of Bank Management, Vol. VII No.10.

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