
Electronic Banking Systems in India

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Abstract

Banks have Technological means towards on-line banking programmes. The reach and delivery capability of computer networks such as the Internet far exceeds any proprietary bank network ever built and makes it continually easier for customers to manage their money anywhere, anytime. Banks understand the need to separate the content (financial product) from the distribution channel. The traditional model of integrated delivery has out-lived its usefulness and needs to be reconsidered. Banks recognize the potential benefits of early entry into what will inevitable be an important but crowded market. The challenge for the banking industry lies in creating the right atmosphere and providing the right incentives for consumers to use personal computers regularly for banking and in making sure they provide attractive and affordable services. The major routine processing in day-to-day banking operations originates at the cash counter or letter counters in the banks. Essentially the idea behind the electronic payment system is that a number of the activities related to payment should be done with the help of computers

Key Words: potential benefits, electronic payment, delivery capability.

Introduction

The growth of technology has changed Payment Systems the world over during the past two decades. More and more innovations are being introduced in both the cash payment system and non-cash payment systems. In the recent years, the use of electronic payments has witnessed manifold increase, partly reflecting increased adoption of technology. The growth of volume of transactions directed through electronic payment method has grown up. The introduction of automatic teller machines (ATMS) and the plastic cards has given the banking customers the facility of round the clock (24 hours) banking.

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Over the years, RBI has laid special emphasis on technology infusion in the day-to-day operations of banks. Technology, apart from increasing the efficiency of banking Services, is expected to boost the ongoing process of financial inclusion emphasized by the RBI. In recent years, increase in the Number of off-site ATMS in various locations as well as use of mobile phones for delivering banking technology has further facilitated banking Outreach ;in remote areas. The IT Vision Document, 2011-17 of the Reserve Bank sets out the roadmap for implementation of key IT applications in banking with special emphasis on seamless delivery of banking services through effective implementation of Business Continuity Management (BCM), information Security Policy,

and Business Process Re-engineering (BPR).

While the Computerization and adoption of core Banking Solutions in banks almost reached the final stage of completion, the focus has now shifted to adoption of more advanced technologies in banking, which would use analytics and business intelligence to enhance their customer. Relationship Management (CRM) and improve internal effectiveness including Management Information systems (MIS) and managing risks arising out of IT implementation.

TABLE 2. ATMs of Scheduled Commercial Banks

S.N		2006	2007	2008	2009	2010	2011	2012
1.	Public Sector Banks	14670	16329	21443	27277	40680	49487	58193
1.1	Nationalized Banks	8435	9888	11567	15938	19702	24836	31050
1.2	SBI group	6235	6441	9876	11339	20978	24651	27143
2.	Private Sector Banks	8765	9799	12356	15320	18447	23651	36079
3.	Foreign Banks	890	960	990	1054	1026	1367	1414
	All SCBs (1+2+3)	24325	27088	34789	43651	60153	74505	95686

Note Excluding IDBI Bank Ltd

Source Compiled from various issues on trend and Progress of Banking in India.

The Table 2 shows that there is an increase in the total volume of electronic payments. There is a sustained increase in total number of ATMs from 2006 to 2012 indicating none towards door-step banking.

For optimizing the cost on investments in ATMs, Banks joined together in small clusters to share their ATM networks. There are many such ATM network clusters functioning in India. In order to facilitate inter-Operability among three clusters at the National level, the IDRBI has initiated the process of setting up a 'National Financial Switch' to facilitate apex level connectivity of others Switches established by banks.

ATMs in India have come to occupy a key component of retail channel strategy adopted by the banks worldwide. As a self-service channel, banks have delivered exceptional customer convenience in deploying the ATMs. In the Indian situation, the Public Sector banks are implementing their technology blueprint by networking their branches. Their customers have started experiencing the transition from being a branch customer, to becoming a customer of the bank, thanks to the core banking solutions which are under implementation.

The major technological development which has revolutionized the delivery channel in the banking sector is the development of ATM. ATMs particularly off-site ATMs, act as substitutes for bank branches in offering a means of anytime cash withdrawal to customers. Growth in ATMs had been generally on a rise in the recent years.

Changing Trend of the Payment Systems from cash to Cashless or non cash payment

In India, cash continues to be the predominant mode of payment. The policy initiatives and the regulatory stance of the Reserve Bank has continued to focus on increasing the acceptance and penetration of safe, secure and efficient non-Cash payment modes comprising cheques, credit/debit cards, and transactions through ECS / RTGS/NEFT, over the years. Due to these measures the non-cash retail payment continues to over the last 5 years.

TABLE 3. Trend in Payments Systems

(in billions)

	Non-cash retail Payments*
2006-07	1,94,459
2007-08	3,05,382
2008-09	3,29,736
2009-10	4,06,116
2010-11	4,76,291
2011-12	5,16,332

Source : Various RBI Publications and Database on Indian Economy (DBIE).

*Cheques, ECS, NEFT, Cards, RTGS. Customer transactions

Table 3 shows the trend in non-Cash retail payment. The Non-Cash retail payment continues to increase from 2006-07 to 2011-12. It was 1, 94,459 in 2006-07 which tend to rise and it becomes 5, 16,332 in 2011-2212.

The bank-led mode for mobile banking has also started gaining popularity in the recent years. By the end of 2012 69 banks were granted approval to provide mobile banking facility, of which 49 have started operations. In the year 2010. National Payment Corporation of India (NPCI) was given approval to launch Interbank Mobile Payment Service (IMPS), which is a unique 24x7 inter-bank electronic funds transfer system providing instantaneous credit to the beneficiaries. With this channel having now stabilized and gaining further customer acceptance, the earlier transaction limit for mobile baking has been removed by the Reserve Bank. The banks are now free to fix their own per transaction limit based on their own risk perception with the approval of their respective Boards.

Apart from this, the volume and value of transactions through the two Major electronic Payment Systems of the country, i.e., RTGS and NEFT has increased rapidly.

Pre-paid payment instruments (PPIs) have emerged as a convenient replacement / Substitution for cash transactions, besides providing a proper and it trail. PPIs are Payment instruments that facilitate purchase of goods and Services against the value Stored on such instruments. By the end of 2012, 40 banks were granted approval/authorization under the Payment and settlement system (PSS) Act, 2007 to issue PPIs in India. Three types of PPIs are popularly issued, i.e., Paper voucher, Cards and m-wallets. Amongst these, the paper vouchers are the most popular in terms of numbers and value.

Going forward, the relaxation in the domestic money transfer guidelines introduced in October 2011 are expected to provide further impetus towards financial inclusion through electronic PPIs, including the use of m-wallets, by enabling all authorized entities to increase domestic remittances through formal Payment Channels.

A technological advanced India remains handicapped for want of legal support in implementing many of the technological innovation. The law relating to digital signatures and encryption helps for implementing Electronic Fund Transfers (EFT) in a big way. Cyber Law has a very vital role to play at the application level, because of the critical nature of financial data transfer.

The financial messages have the features such as:

Data Transmission: The receipt of the message at the intended destination.

Data Integrity: The content of the message should be the same as the transmitted one.

Data Acknowledgement: Sender of information should be able to verify its receipt by the recipient.

Data Authenticity: Recipient of the message could verify that the sender is indeed the person.

Data Security: Information in transit should be observed, altered or extracted. Any attempt to tamper with data in transit will need to be revealed.

These features boil down essentially to authentication (to verify the identity of the sender of the message to the intended recipient to prevent spoofing or impersonation), authorization (to control the access to specific resources for unauthorized persons), confidentiality (to maintain the secrecy of the content of transmission between the authorized parties), integrity (to ensure that no changes / errors are introduced in the messages during transmission) and non-repudiation (to ensure that an entity cannot later deny the origin and receipt and contents of the communication).

There is a need for an appropriate institutional arrangement for key authentication. There should also be an institutional arrangement for appropriate assessment of participants of the financial network in terms of their credit worthiness, financial soundness, etc. These assessments would provide valuable input to the banking and financial sector. Initially, the 'Indian Financial Network' (INFEINET) will be a 'Closed User Group' (CUG) network, but in due course, this network will have to be connected to public networks like the 'Society for World-wide Inter-bank Financial Telecommunication' (SWIFT) etc. It is essential to look at the possibility of having firewall implementations:

- ❖ All in and out traffic must pass through the firewall.
- ❖ Implementation of firewalls can be done using packet filtering routers, application and circuit level gateways and also network translation devices.
- ❖ State full multilayer inspection gateways combine the advantages of the above and also give a better performance, flexibility and security.

Firewalls are used to implement access control security as well as to provide for user authentication and to ensure data integrity by using encryption. It is important that the banks have their own security policy and then design security solutions accordingly. Regular reviews of Security Policies and their implementation are also important. Highly secured (e. g. funds related), secured, none-secured messages should be clearly demarcated in the security policy. Banks to have dedicated groups with enough competence and capability.

Computerization in Indian Banks:

The encouraging sign is that bank computerization has acquired a substantial momentum in banks in India. The foreign banks in India have computerized since 1980 and most of the branches are connected to each other. The private banks are fairly new and most have started their operations with computerized networks. Even in the public sector banks, bank computerization has come a long way. The unions of these banks have agreed to the introduction of electronic funds

transfer computerization of major clearing houses, setting up of communications networks to connect the branches. PCs have become a common site in bank branches.*

New technology is enabling banks to provide the convenience of anywhere, anytime banking to demanding customers. The earlier brick and mortar branch is insufficient, new technology is taking banks to the homes or offices, 24 hours a day, 365 days a year through ATMS, telephones and PCO. The financial supply chain has undergone a fundamental strategic change. Funds could be transferred through mail transfers by issuing demand drafts physically transported from its place of issuance to its place of payment. Realization of such payments used to take time. The new trend of Non Branch Service Delivery in Banking has started with electronic payment services. It started with Electronic Funds Transfers [EFT], then credit cards, ATMs and smart cards, etc. with the advance of computing technology, telephone banking and its integration has become a powerful medium of delivering banking services.

The new technology has broken the paradigm of branch banking; it can be done from home/office using the PC or the telephone or with satellite communication links. The networking has allowed the customer to do banking at any branch. This the new flexible financial supply chain to achieve the objective of competitive supply chain management that are being used by the banking Industry in the form of Non Branch Service Delivery.

INTERNET BANKING:

Banking is conducting ones banking or bank account online through a computer and a net connection. The system is updated immediately after every transaction automatically. In other words it is said that it is updated 'on-line, real time'. Through net banking one can check the status of his/her account, place queries and also can be facilitated with a wide range of transactions simultaneously.

In India, the regulatory body has not yet sanctioned virtual bank, in abroad there are banks like EGG Bank or NET Bank, which only have a virtual presence without any physical branches. Net Banking has three basic features. They are as follows:

- The banks offer only relevant information's about their products and services to the mass.
- Few banks provide interaction facility between the banks and its customers.
- Banks are coming up with arrangements of utility payments, like telephone bills, electricity bills, etc.

The current statistics show that hardly 10 per cent of Indian customers use the internet for banking. Among all the facilities provided the maximum of them uses only for checking balance or requesting for a cheque book. Very few customers use the advance interactive services provided by the banks. According to HDFC and ICICI Bank, 17 per cent of ICICI customers use the Internet for banking and 10 per cent of HDFC customers prefer it.

Cost of installation of services for basic features, the cost for providing such services to the banks come around Rs 40 lakh to Rs 50 lakh. For the third level service or sophisticated services, the investments mount to the tune of Rs 4 crore to Rs 5 crore. These investments are just a fraction if compared to the operations of the bank using physical infrastructure.

Services provided by Net Banking;

Queries:

- Check Balance
- See Statement
- Inquire about cheque status
- Ask for a Statement
- Ask for a Cheque Book
- Inquire about Fixed Deposit
- Inquire about TDS details
- See Demat Account
- Update profile

Transactions:

- Stop a Cheque
- Pay Bills
- Ask for a Demand Draft
- Transfer funds between your accounts
- Transfer funds to a third party
- Request for a new Fixed Deposit
- Shop Online
- Pay Bank Credit Card Dues

Banking Network:

The banking network consists of several components. There is a bank that processes the on-line financial transactions for the given merchant. The bank maintains the accounts for the merchant authorizes and processes the payments. The merchant banks also maintain a link with the consumer's bank for verifying the transactions. The link between the merchant and its bank is often real time so as to allow on-line authorization of consumer payments. The consumer's bank typically has an off line to the consumer such as via postal mark or e-mail.

Steps are executed to complete a transaction:

- ❖ The consumer accesses the shopping mall and selects a shop for purchasing certain items.
- ❖ The shopping mall server accesses the merchant system for the selected shop.
- ❖ The merchant system presents the store's home page to the consumer.
- ❖ The consumer selects the desired goods, interacts with the merchants and makes the payments.
- ❖ The merchant system accesses its bank for authorization of the consumer payment.
- ❖ The merchant system informs the consumer of the money transfer through mail.

Banking System in On-line Commerce:

Banks have technological means towards on-line banking programmes. The reach and delivery capability of computer networks such as the Internet far exceeds any proprietary bank network ever built and makes it continually easier for customers to manage their money anywhere, anytime.

Banks understand the need to separate the content (financial product) from the distribution channel. The traditional model of integrated delivery has out-lived its usefulness and needs to be reconsidered. Banks recognize the potential benefits of early entry into what will inevitably be an important but crowded market. The challenge for the banking industry lies in creating the right atmosphere and providing the right incentives for consumers to use personal computers regularly for banking and in making sure they provide attractive and affordable services.

IT based products and services:

In the Indian market, various IT based banking products, services and solutions are available. The most common of them are given below.

- * Phone Banking
- * ATM facility
- * Credit, Debit and Smart Cards.
- * Internet Banking
- * Mobile Banking
- * SWIFT Network
- * INFINET Network
- * Connectivity of bank branches to facilitate anywhere banking.

In addition to the above, software's are also available to support bank's various requirements.

- * MIS helping the bank to generate RBI reports like SLR, CRR (Cash Reserve Ratio) etc.
- * NPA Management, Asset & Liability Management, GAP and Trend analysis.
- * Branch wise Profitability Assessment
- * Intelligent Balance Sheet Analyzer
- * Relational Database Management Systems for management of data mining from data warehouse.

Use of IT by competitors: New private sector banks and foreign banks operating in India are the main competitors of SBI. Main features of use of IT by the competitors are:

- * Use of Centralized or Clustered Database

- * Networking of all of their branches
- * Offering Internet Banking and Mobile Banking Services
- * Electronic Clearing Systems
- * E -Broking
- * Screen touch information kiosks
- * Wide presence of ATM centers

Conclusion

The IT revolution had a great impact in the Indian banking system. The use of computers had led to introduction of online banking in India. The use of the modern innovation and computerization of the banking sector of India has increased many folds after the economic liberalization of 1991 as the country's banking sector has been exposed to the world's market. The Indian banks were finding it difficult to compete with the international banks in terms of the customer service without the use of the information technology and computers.

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