Hashem Zarafat., (2013) in his study entitled “Demographic and Social Differences in the Acceptance of Internet Banking: An Empirical Study of Malaysia”, made an attempt to provide the empirical evidences of internet banking acceptance while analyzing differences in demographic and social differences. The data of 117 respondents were analyzed using SPSS. The study used TAM in order to investigate the user’s behaviors and attitude towards using a new information system. Findings suggested that perceived usefulness, perceived ease of use, and attitude of users may vary in using internet banking and age and education are the significant factors for acceptance.

Summary

This chapter describes the various past studies and research works reviewed for the present study. From the reviews the researcher has identified the important issues and their relevance to the present research problem. All these assist the researcher to map the field and position the present research within the context. Moreover it establishes theoretical framework and methodological focus. The research gap and method of analysis used in the past studies are clearly identified by the researcher.

CHAPTER – III

IMPACT OF TECHNOLOGY IN BANKING SECTOR

3.1 Introduction

Computerisation became popular in the western countries right from the Sixties. Main Frames were extensively used both by the Public Institutions and Major Private Organizations. In the Seventies Mini Computers became popular and Personal Computers

---

dominated in early Eighties, followed by introduction of several software products in high level language and simultaneous advancement in networking technology. This enabled the use of personal computers extensively in offices & commercial organisations for processing different kinds of data. However in India organised Trade Unions were against the introduction of computers in Public Offices. Computerisation was restricted to major scientific research organizations and Technical Institutes and defense organizations. Indian Railways first accepted computerisation for operational efficiency.

The Electronics Corporation of India Ltd. was set up in 1967 with the objective of research & development in the fields of Electronic Communication, Control, instrumentation, automation and Information Technology. CMC Ltd (Computer Maintenance Corporation of India Ltd.) was established in 1976 to look after maintenance operations of Main Frame Computers installed in several organisations in India, to serve the gap, when IBM left India, due to the directive of the then Central Government.

In the Private Sector, the first major venture was TCS (Tata Consultancy Services) which started functioning from 1968. In the year 1980 a few batch-mates of IIT Delhi pioneered the effort to start a major education centre in India to impart training in Information Technology and their efforts resulted in the setting up of NIIT in 1981. Aptech Computer Education was established in 1986 following the experiment of NIIT.

Before large scale computerisation, computer education became popular in India and was coveted by bright students. When several Engineering Colleges and Technical Institutes started introducing Post Graduate Degree courses in Computer Engineering. The booming hardware and software industry in the West attracted Indian students and many of them migrated to the U.S.A. for better opportunities and settled there. We have today the paradox of India being one of the major powers possessing diverse talents in fields of software development, but at the same time, we are still a decade back in using
computerised service extensively in the country and bringing the facility to the realms of the common man.

3.2 Computerisation

The process of computerisation marked the beginning of all technological initiatives in the banking industry. Computerisation of bank branches 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. Information technology is one of the most important factors transformation of the Indian banking industry in terms of its transactions processing as well as for various other internal systems and processes. The various technological platforms used by banks for the conduct of their day to day operations, their manner of reporting and the way in which inter bank transactions and clearing is affected have evolved substantially over the years.

3.3 Computerization of Bank Branches

The reforms in the 1990s, which led to expansion, consolidation and liberalization of the banking and financial sector in India, brought in many changes and challenges.

A number of private and foreign players entered the Indian market with superior technologies that helped them service their customers efficiently through multiple channels such as ATMs and online banking.

Indian banks on the other hand have been using IT more out of compulsion and primarily for transaction processing. They now need to adopt IT to reposition banks into the integrated financial services market.

The need for providing improved customer service, reducing transaction costs and increasing productivity, shall be the main drivers for banking sector to adopt IT. These considerations are particularly important for public sector banks in India, who are facing immense competition from private and foreign banks.
IT can help them move from the present scenario where they are working as isolated islands to providing a centralized banking experience. There is a need today for IT and the financial community to come together and develop customized IT solution to make the Indian Banking sector globally competitive.

IT adoption in the banking sector will provide real time availability of transaction processing through multiple channels. It would enhance a bank's ability to cross sell products, ensure better management and security and safety of funds and increase efficiency through integration of systems across various locations.

It would also ensure efficient management of Non Performing Assets (NPAs), minimize transaction costs, enhance ability to conduct in-depth financial analysis and gather business intelligence. Enhanced use of IT would also encourage the use of Internet to provide access for online bill payments, funds transfers and e-statements in addition to encouraging wireless mobile banking and e-commerce.

With growing competition faced by foreign banks and financial institutions, the public sector banks in co-operation with the Indian IT industry would need to equip themselves for the next phase of introducing the benefits of IT to their customers by providing a centralized banking solution.

3.4 Opportunity for Indian banking sector in branch computerization

1. IT Networking

2. System Integration and Management

3. Customer Relationship Management (CRM) Applications

4. Back Office processing and Call Centres

5. Data warehousing/ Data mining

3.5 Adoption of Technology in banking sector

The technological evolution of the Indian banking industry has been largely directed by the various committees set up by the RBI and the government of India to review the implementation of technological change. No major breakthrough in technology implementation was achieved by the industry till the early 80s, though some working groups and committees made stray references to the need for mechanization of some banking processes. This was largely due to the stiff resistance by the very strong bank employees unions. The early 1980s were instrumental in the introduction of mechanisation and computerisation in Indian banks. This was the period when banks as well as the RBI went very slow on mechanisation, 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.

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.

3.5.1 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.

3.5.2 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.

3.5.3 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.

3.5.4 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 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.

3.5.5 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 which 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 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.

3.5.6 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. 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.
3.5.7 Internet Banking

Internet banking in India began taking roots only from the early 2000. Internet banking services are offered at 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 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.

3.5.8 Phone Banking and Mobile Banking

Phone and mobile banking are a fairly recent phenomenon for the Indian banking industry. These existing operative guidelines and restrictions on the type and quantum of transactions 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 were 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.

3.5.9 Card Based Delivery Systems

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.

3.5.10 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 in 2005 constituted, 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 authorisation 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.

3.5.11 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.

3.5.12 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 focused 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.

3.5.13 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.

This system is operating from 74 different locations, ECS handles an average of 20 million transactions per month. It enables easy payments and collections for repetitive and bulk transactions. ECS takes off a lot of burden of paper work from the banks, enabling smooth flow of transactions. The volume of electronic transactions has increased at an annual average growth rate of 32.1% during FY05-FY09. The use of ECS (credit) and ECS (debit), in particular, has witnessed substantial growth in the last few years.

The RBI has recently launched the National Electronic Clearing Service (NECS), in September 2008, which is an improvement over the ECS currently operational. Under NECS, all transactions shall be processed at a centralized location called the National
Clearing Cell, located in Mumbai, as against the ECS, where processing is currently done at 74 different locations. ECS system has a decentralised function, and requires users to prepare separate set of ECS data centre-wise. Users are required to tie-up with local sponsor banks for presenting ECS file to each ECS Centre. As on September 2008, 25000 branches of 50 banks participated in the NECS. Leveraging on the core banking system, NECS is expected to bring more efficiency into the system.

3.5.14 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 computerised 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 were networked or not.

A new variant of the EFT called the National EFT (NEFT) was decided to be implemented on November 2005 so as to broaden 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.

### 3.5.15 RTGS (Real Time Gross Settlement System)

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 Inter bank clearing are replaced by the electronic, credit transfer based RTGS system. High systemic risks are posed by high value inter bank transfers, so, it is considered desirable that all major inter bank 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.

3.5.16 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.

3.5.16 E-banking

The acceleration in technology has produced an extraordinary effect upon our economy in general has had a particularly profound impact in expanding the scope and utility of financial products over the last ten years. Information technology has made possible the creation, valuation, and exchange of complex financial products on a global basis and even that just in recent years. Derivatives are obviously the most evident of the many products that technology has inspired. But the substantial increase in our calculation capabilities has permitted a variety of other products and, most beneficially, new ways to unbundled risk. What is really quite extraordinary is that there is no sign that this process of acceleration in financial technology is approaching an end.
All the new financial products that have been created in recent years contribute to economic value by unbundling risks and reallocating them in a highly calibrated manner. The rising share of finance in the business output of India and other countries is a measure of the economic value added by the ability of these new instruments and techniques to enhance the process of wealth creation. The reason, of course, is that information is critical to the evaluation of risk. The less that is known about the current state of a market or a venture, the less the ability to project future outcomes and, hence, the more those potential outcomes will be discounted. E-bank is the electronic bank that provides the financial service for the individual client by means of Internet.

3.6 E- Banking VS Internet Banking

Electronic banking is an umbrella term for the process by which a customer may perform banking transactions electronically without visiting a brick-and-mortar institution. The following terms all refer to one form or another of electronic banking: Personal Computer (PC) Banking, Internet Banking, Virtual Banking, Online Banking, Home Banking, Remote Electronic Banking, and Phone Banking. PC Banking and Internet or Online Banking are the most frequently used designations. It should be noted, however, that the terms used to describe the various types of electronic banking are often used interchangeably.

Internet banking, sometimes called online banking, is an outgrowth of PC banking. Internet banking uses the Internet as the delivery channel through which it conducts banking activity, for example, transferring funds, paying bills, viewing checking and savings account balances, paying mortgages, and purchasing financial instruments and certificates of deposit. An Internet banking customer accesses his or her accounts from a browser—software that runs Internet banking programs resident on the bank’s World Wide Web server, not on the user’s PC. Net Banker defines a “true Internet bank” as one that provides account balances and some
transactional capabilities to retail customers over the World Wide Web. Internet banks are also known as virtual, cyber, net, interactive, or web banks.

3.7 Functions of e-bank

At present, the personal e-bank system provides the following services:

1. Inquiry about the information of account

The client inquires about the details of his own account information such as the card's/account's balance and the detailed historical records of the account and download the report list.

2. Card accounts' transfer

The client can achieve the fund transfer between his own cards and transfer the fund to another person's Credit Card in the same city.

3. Bank-securities accounts transfer

The client can achieve the fund transfer between his own bank savings accounts or his own Credit Card account and his own capital account in the securities company. Moreover, the client can inquire about the present balance at real time.

4. The transaction of foreign exchange

The client can trade the foreign exchange, cancel orders and inquire about the information of the transaction of foreign exchange according to the exchange rate given by our bank on net.
5. The B2C disbursement on net

The client can do the real-time transfer and get the feedback information about payment from our bank when the client does shopping in the appointed web-site.

6. Client service

The client can modify the login password, information of the Credit Card and the client information in e-bank on net.

7. Account management

The client can modify his own limits of right and state of the registered account in the personal e-bank, such as modifying his own login password, freezing or deleting some cards and so on.

8. Reporting the loss of the account

The client can report the loss in the local area (not nationwide) when the client's Credit Card or passbook is missing or stolen.

3.8 Types of e-banking

1. Deposits, withdrawals, inter-account transfers and payment of linked accounts at an ATM;
2. Buying and paying for goods and services using debit cards or smart cards without having to carry cash or a cheque book;

3. Using a telephone to perform direct banking - make a balance enquiry, inter-account transfers and pay linked accounts;

4. Using a computer to perform direct banking - make a balance enquiry, inter-account transfers and pay linked accounts.

3.9 Advantages of e-banking

The following are the important benefits of e-banking:

1. Account Information

Real time balance information and summary of day’s transaction.

2. Fund Transfers

Manage your Supply-Chain network can be effectively done by using our online fund transfer mechanism. We can affect fund transfer on a real time basis across the bank locations.

3. Request

Make a banking request online.
4. Account Information

The complete database that the bank has about our company is available to us at our terminal. It provides us:

(i) Current balance in our account on real-time basis.

(ii) Day’s transactions in the account.

(iii) Details of cash credit limit, drawing power, amount utilized, etc.

5. Downloading of account statements as an excel or text files

The statements can be integrated with ERP system for auto-reconciliation.

6. Fund Transfers

Managing the Supply-Chain network can be effectively done by using online fund transfer mechanism. The user can affect fund transfer on a real time basis across the bank locations. The product facilitates:

(a) One-to-one fund transfer between two linked accounts.

(b) Bulk fund transfers: In bulk fund transfers, we upload a flat file containing payment/collection information. Our systems take care of processing the entire file and once the file is processed we can integrate the processed file to our ERP for auto reconciliation.

7. Privacy

The real life situation of user-wise limits and multilevel signatories can be mapped in the net-based fund transfer module too. The user can specify user-wise cap for funds transfer and
the number of approvals needed for each fund transfer. The fund transfer will not take place unless the required number of signatories has approved it.

8. Easy transfer

With a Power of Attorney from our dealers, we can link the dealer's accounts to our account in order to have an online fund transfer, saving us time and money involved with cheque collection systems. Alternatively, the dealer can credit our account through this channel. Similarly, we could also affect vendor and other payments online.

9. Online Request

Customers can also submit the following requests in online.

i. Registration for account statements by e-mails either daily/weekly/fortnightly/monthly basis.
ii. Stop payment of cheque
iii. Cheque book replenishment
iv. Demand Draft/Pay-order
v. Opening of fixed deposit account
vi. Opening of Letter of credit

10. MIS

The company does not have to spend anything extra to avail such facilities. All it requires is Internet connectivity. The product enables the company to pro-actively manage its cash flows, ease reconciliation efforts as all the MIS is available at the click of the mouse.

11. Customer can integrate the System with his Own ERP
The customer can download the account statements either as a text file or as an excel file. The bank can help him in integrating the account statements and bulk payment files with his ERP system. The Bank may charge a nominal fee depending upon the nature of work involved.

12. Bill Payment through Electronic Banking

Internet has thus ushered the concept of anytime and anywhere banking. To the individual the onerous task of visiting several places to settle his service bills like telephone, water, electricity, etc., can be overcome through the electronic Bill Pay service provided by the bank. He can pay his regular monthly bills (telephone, electricity, mobile phone, insurance, etc.) right from his desktop. There will be no more missed deadlines or no more loss of interest. He can schedule his bills in advance, and thus avoid missing the bill deadlines as well as earn extra interest on his money.

13. The Electronic Shopping Mall

The customer can also make his shopping payment through the Bank's secure website so that he can shop online without any security worries, as the bank can provide online real time shopping mail services through partner shopping sites.

14. Effecting Personal Investments through Electronic Banking

The bank's website can also allow the customer to invest in shares, mutual funds and other financial products.

15. Trading in shares

(i) Cash Trading:
This is a delivery based trading system, which is generally done with the intention of taking delivery of shares or monies.

(ii) Margin Trading:

Customer can also do an intra-settlement trading normally up to 4 times his available funds, wherein he can take long buy/short sell positions in stocks with the intention of squaring off the position within the same settlement cycle.

(iii) Spot Trading:

When looking at an immediate liquidity option, 'Cash on Spot' may work the best for him. On selling shares through "cash on spot", money is credited to his bank a/c the same evening and not on the exchange payout date. This money can then be withdrawn from any of the Bank's ATMs.

(iv) The customer can also trade directly at the recognised stock exchanges of the country through his bank.

16. Investing in Mutual funds

Electronic banking also brings the customer the same convenience while investing in Mutual funds - Hassle free and Paperless Investing. He can invest in mutual funds without the hassles of filling application forms or any other paperwork. He needs to provide no signatures or proof of identity for investing. Once he places a request for investing in a particular fund, there are no manual processes involved. His bank funds are automatically debited or credited while simultaneously crediting or debiting his unit holdings.

17. Trade in Derivatives

Trading in derivatives includes the following:
(i) Futures:

Through electronic banking the customer can also trade in index and stock futures on the approved stock exchange. In futures trading, he takes buy/sell positions in index or stock(s) contracts having a longer contract period of up to 3 months.

(ii) Options:

An option is a contract, which gives the buyer the right to buy or sell shares at a specific price, on or before a specific date. For this, the buyer has to pay to the seller some money, which is called premium. There is no obligation on the buyer to complete the transaction if the price is not favorable to him.

To take the buy/sell position on index/stock options, he has to place certain percentage of order value as margin. With options trading, he can leverage on his trading limit by taking buy/sell positions much more than what he could have taken in cash segment.

18. Initial Public Offers Online

The customer can also invest in initial public offers online without going through the hassles of filling any application form/paperwork, get in-depth analyses of new initial public offer issues, which are about to hit the market and getting analysis on them. Initial public offer calendar, recent initial public offer listings, prospectus/offer documents, and initial public offer analysis are few of the features, which help a customer to keep on top of the initial public offers markets. There can be no end to the variety of services that can be provided through the electronic channel by banks and financial institutions. Every Institution is trying constantly to innovate and offer new products to woo the customer.

19. Other benefits

The e-banking provides some other benefits also. They are:
(i) Convenience.

(ii) Speed of concluding transactions.

(iii) Safety - banking from own home.

(iv) Economy - banking without visiting your bank.

(v) Cheaper service fees.

(vi) Seamless Integration with existing environment (IDM - Intelligent Data Module).

(vii) Highly Saleable.

(viii) Easy Customization.

(ix) Lower Costs of both Installation and Maintenance.

(x) Platform Independence.

(xi) Round-the-Clock and Cross-Border Availability.

(xii) Remote Authorization.

3.10 Limitations of e-banking

1. Safety situations around ATMs.

2. Abuse of bank cards by fraudsters at ATMs.

3. Danger of giving your card number when buying on-line.

3.11 Issues in Risk Management in Online Banking
The problem arising with the banks is that they have already invested huge amount of money in the online initiatives and their online offerings are remaining unprofitable. Banks are already having its existing customers so they are not getting large number of customers. Just enrolling customers to use the id will not be sufficient, the user will have to use the website frequently. Banks should make efforts to increase the usage of their site by the customers and co-ordinate with the branches effectively. By doing this they will be able to obtain maximum value which would include cost reduction, higher customer retention and cross-selling opportunities.

An important issue on which banks must focus on is integrating online channel with all other banks. Integrated channels working together are effective than a group of channels which are working without co-ordination. Internet banking initiatives like risk management and implementing controls follow same principles like other processes. Most dangerous thing is considering risk management a technical problem and leaving it on IT management. Following are some of the risks which are integral in online banking:

3.11.1 Strategic Risk

It is one of the prospective and current risks that affect capital arising and earnings from divergent business decisions associated mainly with Board and Management decisions. As senior management is responsible for developing the business s strategy and establishing of management affective oversight over risks, then they are predictable to take an informed and planned strategic decision as whether and how the bank is providing e-banking services. There are many managers who do not understand strategic and technical aspects of the Internet Banking. Encouraged by the competition, banks introduce online banking without cost-benefit analysis even if the management does not have plan, manage and monitor the performance of technology related to products, services and delivery channels. Poor investment
decisions and e-banking planning can increase a financial institution’s strategic risk.

### 3.11.2 Operational-Transactional Risk

Transactional risk is also known as IT or security risk which affects capital arising and earnings from fraud, abandon, error and the inability to maintain predictable service levels. One of the important challenges faced by the banks in the online environment is predicting and managing the number of what the banks want to obtain. Certain factors like structure and complexity of banking products, types of services offered, difficulty of understanding and executing new technologies will increase the level of operational risk, especially when the institutions recommend innovative services that are not yet standardized.

### 3.11.3 Information Security Risk

Information security risk has negative impact on capital arising and earnings out of information security processes, and thus revealing the institution about the insider attacks or malicious hacker, denial-of-service attacks, viruses, data theft, fraud and data destruction. Most sensitive computer systems are used for storing highly confidential information and for high value payments which tend to be most carefully secured. The programmes and viruses or anti viruses and security systems must be updated whenever required.

### 3.11.4 Credit Risk

A customer’s failure to meet his financial commitments is called credit risk. Internet banking allows customers to apply for praise or credit from anywhere in the world. It is very difficult for the banks to verify the identification of the customer, while they are making
payments through the internet. Verifying guarantees and if the person is in another country, then in case of conflicts different dominion procedures may cause difficulties.

3.12 Summary

This chapter describes the importance of computerization in banking sector. The concept of e-banking and its merits and de-merits are explained in detail. Moreover the difference between the e-banking and internet banking is also examined. The impact of technology on the banking sector and its importance in the modern computerised era are discussed in detail.
Reference

Books:


