CHAPTER I

INTRODUCTION

Indian banking system touches the lives of millions of people and it is growing at a very fast pace. Banking industry in India is facing number of challenges like changing needs and perceptions of customers, new regulations from time to time and great advances in technologies. The pressure of meeting these challenges have compelled banks to change the old ways of doing business. India's banking system has seen some major financial innovations in the past decades which lead to tremendous improvements in banking services and operations. Banks are investing heavily in adoption of new innovative practices. The need of hour is to design such a system that encourages the efficiency of investment in innovations and widens the gap between revenues and costs involved with reference to technological up gradation.

The banking industry in India has a huge canvas of history, which covers the traditional banking practices from the time of British was ruling India to the recent period, nationalization to privatization of banks and now increasing numbers of foreign banks in India. Therefore, Banking in India has been through a long journey. Indian Banking Sector has witnessed a number of changes. It has undergone a huge transformation in the years since Independence. The rate of transformation was particularly high in the 1990s and 2000s, when a number of innovations changed the way banking was perceived and it was the result of autonomous and induced necessities of the environment. In the 1990s, the banking sector in India pronounced greater emphasis being placed on technology and innovation. Banks began to use technology to provide better quality of services at greater speed. Information technology has made it convenient for customers to do their banking from geographically diverse places which earlier remain uncovered.

FINANCIAL INNOVATION

Financial innovation is key to survival of banks in contemporary banking environment. The importance of financial innovation is widely recognized. Many leading scholars, including Miller (1986) and Merton (1992), have highlighted the importance of products and services in the financial arena. Innovative ideas are manifest in diverse industries and in different forms. For example innovation in product development is one of the forms of innovation that has been used by banks. Right from the beginning stage of financial modernization, innovations have been playing major roles in curtailing financial exclusions and improving the ways banking services are rendered to people. Financial innovation is one of the commonly used banking terminologies. It has been used to describe any change in the scale, scope and delivery of financial services.

The deregulation of financial service industry and increased competition with in investment banking undoubtedly led to increased emphasis on the ability to design new products, develop better process, and implement more effective solution for increasingly complex financial problems. These financial innovations are a result of number of Government regulations, tax policies, globalization, liberalization, privatization, integration with the international financial market and increasing risk in the domestic financial market. Financial innovation is the process through which finance managers or intermediary institutions in financial markets add value to existing plain vanilla products that satisfy the user needs. According to John Finnerty, “Financial Innovation involves the design, the development, and the implementation of innovative financial instruments and processes, and the formulation of creative solutions to problems in finance”. The various innovations in banking and financial sector are ECS, RTGS, EFT, NEFT, ATM, Retail Banking, Debit and Credit cards, free advisory services, payments of utility bills, fund transfers, internet banking, telephone banking, mobile banking, selling insurance products, issue of free cheque books, travel cheques and many more value added services.

Intense competition among the banks has redefined the concept cost effective and delivering sustainable return to shareholders. Managing technology is therefore, a key challenge for the Indian banking sector. Developing countries like India, has a huge number of people who don't have access to banking services due to scattered and fragmented locations. But if we talk about those people who are availing banking services, their expectations are raising as the level of services are increasing due to the emergence of Information Technology and immense competition between the services & products provided by different banks. Since, foreign banks are playing in Indian market, the number of services offered has increased and banks have laid emphasis on meeting the customer expectationsIndia is a country with huge population and the demographic growth of India is such that it is going to become the most populated country very soon. Technological advancements can bring about close integration between the urban and rural population.

The primary challenge is to give consistent service to customers irrespective of the kind of customer whether rural or urban. Retention of customers is going to be a major challenge. Banks need to emphasise on retaining customers and increasing market share. Even with ATM machines and Internet Banking, many consumers still prefer the personal touch of their neighbourhood branch bank. Technology has made it possible to deliver services throughout the branch bank network, providing instant updates to checking accounts and rapid movement of money for stock transfers. However, this dependency on the network has brought IT department's additional responsibilities and challenges in managing, maintaining and optimizing the performance of retail banking networks. Illustratively, ensuring that all bank products and services are available, at all times, and across the entire organization is essential for today's retails banks to generate revenues and remain competitive. Besides, there are network management challenges, whereby keeping these complex, distributed networks and applications operating properly in support of business objectives becomes essential. Specific challenges include ensuring that account transaction applications run efficiently between the branch offices and data centers. Banks in India will now have to work towards a vision to have an enhanced retail delivery system. Such a system would include transformed branches, enhanced telephone services, and leading-edge internet banking functions that provide a consistently positive multi-channel experience for the customer.

Some of the challenges that the banks are facing today are:

 Competition from private banks Competition from MNCs Managing diversified needs of customers Diminishing customer loyalty Coping with regulatory reforms Restructuring and reorganizing banks' setup towards thinner and leaner administrative offices; Maintaining high quality assets. Management of impaired assets Keeping pace with technology up-Gradations Problem of Non-Performing Assets (NPA)

The banking industry is changing at a phenomenal speed. While at the one end, we have millions of savers and investors who still do not use a bank, another segment continues to bank with a physical branch and at the other end of the spectrum, the customers are becoming familiar with ATMs, e-banking, and cashless economy. This shows the immense potential for market. Banks are setting up alternative delivery channels to contain operating costs like off-site ATMs, internet banking, telebanking, outsourcing, centralized transaction processing, etc.

TECHNOLOGY AND MODERN BANKING SERVICES

No doubt, the benefits of technology have brought a sea-change in the outlook of modern banking. Now the goal of banking is not just to satisfy but to engage with customers and enrich their experience and for the successful achievement of this goal, the only sustainable competitive advantage is to give the customer an optimum blend of technology and traditional service. With technology occupying a pivotal role in delivery of banking services, the expectations of the consumer have also been growing. Broadly, these expectations are swift service with minimal response time, efficient service delivery, tailor-made and value-added products to suit specific needs, hassle-free procedures and minimum transaction costs, and pleasant and personalized service.

Product and Process innovation in Banking services

The new private sector banks have the technology to access customer data housed in their central warehouses. They are beginning to use it for generating new business leads. Public sector banks are making a beeline for Core Banking Solutions –the technology that enables them to integrate all customer channels seamlessly. Branches are becoming delivery channels and employees salesmen. Banks are going beyond conventional banking and offering a lot more than vanilla loans and deposits.

Innovative services

Electronic Payment Services-E Cheques

A new technology is developed in US for introduction of e-cheque, which will eventually replace the conventional paper cheque.India, as harbinger to the introduction of e-cheque; the Negotiable Instruments Act has already been amended to include Truncated cheque and E-cheque instruments. Electronic payments can also be made in the form of Electronic Funds Transfer, Electronic Clearing Service and through Real Time Gross Settlement. Many banks in India have begun to offer certain banking services through Internet that facilitates transfer of funds electronically.

Real Time Gross Settlement (RTGS)

This was introduced in India since March 2004.It is a system through which electronic instructions can be given by banks to transfer funds from their account to the account of another bank. This is maintained and operated by RBI and provides a means of efficient and faster funds transfer among banks facilitating their financial operations. Funds Transfer between banks on real time basis. Therefore money can reach the beneficiary instantaneously and beneficiary's bank has the responsibility to credit the beneficiary's account within two hours.

Electronic Funds Transfer

This is a system where by anyone who wants to make payment to another person/company etc can approach his bank and make cash payment or give e instructions/authorisation to transfer funds directly from his own account to the bank account of the receiver/beneficiary. Complete details such as receiver's name, bank account number, account type(savings or current account),bank name,city,branch name etc should be furnished to the bank at the time of requesting for such transfers so that amount reaches the beneficiary's account correctly and faster.RBI is the service provider for EFT .

Electronic Clearing Service

This is a retail payment system that can be used to make bulk payments/receipts of a similar nature especially where each individual payment is of a repetitive nature and of relatively smaller amount. This facility is meant for companies and government departments to make /receive large volume of payments rather than for funds transfers by individuals.

Automated teller Machine

This is the most popular devise in India, which enables the customers to withdraw their money 24 hours a day 7 days a week. It is a devise that allows a customer who has an ATM Card to perform routine banking transactions without interacting with a human teller. In addition to cash withdrawal,ATM's can be used for payment of utility bills, funds transfer between accounts, deposits of cash and cheques into accounts, balance enquiry etc

Credit/Debit Cards

These are widely used in the country as they provide a convenient form of making payments for goods and services without the use of cheques and cash. Banks issue credit cards to their customers. The merchant establishment who accepts Credit/Debit card payments will claim the amount from customer's bank through his own bank. Debit card is a direct access card. Amount transacted gets debited immediately. The amount permitted to be transacted in the Debit card will be to the extent of the amount standing to the credit of the card user's account. On the other hand a credit card involves provision of credit to the card user which is paid by card user on receipt of the bill either in full or partial in instalments.

Point of Sale Terminal

This is a computer terminal that is linked online to the computerised customer information files in a bank and magnetically encoded plastic transaction card that identifies the customer to 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.

Tele Banking

This facilitates the customer to do entire non cash related banking on telephone. Under this, Automatic Voice Recorder is used for simple queries and transactions. For complicated queries and transactions, manned phone terminals are used.

Corporate Banking Terminal

This enables large corporate customers to log into banks database and have access to their accounts/transactions from their business houses.

Electronic Data Interchange

This is the electronic exchange of business documents like purchase order,invoices,shipping notices, receiving advices etc in a standardised computer processed universally accepted format between trading partners. This can also be used to transmit financial information and payments in electronic form. This has resulted in huge savings in costs of exchanging trading information

Over the last few years, the mobile and wireless market has been one of the fastest growing markets in the world and it is still growing at a rapid pace. This opens up huge markets for financial institutions interested in offering value added services. With mobile technology, banks can offer a wide range of services to their customers such as doing funds transfer while travelling, receiving online up dates of stock price or even performing stock trading while being stuck in traffic. Mobile devices, especially smart phones are the most promising way to reach the masses and to create lock in among current customers due to their ability to provide services any time anywhere with high rate of penentration and potential to grow.

Mobile commerce is gaining increasing acceptance amongst various sections of the society. This growth can be partly traced back to technological and demographical developments that have been influencing important aspects of socio-cultural behaviour in today's competitive world. The need for mobility is the driving force behind Mobile commerce in general. An empirical survey of customer acceptance clearly reveals a growing interest in Mobile banking. How ever since the degree of interest and willingness to pay vary for individual services, it seems to be necessary to design specific services taking the needs and wishes of relevant target groups into consideration. Banks ought to employ mobile channels with a clear business focus. Mobile banking is a term used for performing balance checks, accounts transactions, payments, credit applications and other banking transactions through a mobile device such as mobile phone or

Personal Digital Assistant. The earliest mobile banking services were offered over SMS.With the introduction of first primitive smart phones with WAP support, the use of Mobile web began in 1999.Apple's initial success with i phone and the rapid growth of phones based on Google's Android operating system have led to increasing use of special client programs called apps downloaded to the mobile device.

A wide spectrum of mobile/branchless banking models is evolving. However no matter what business model, if mobile banking is used to attract low income populations in often rural locations, the business model will depend on banking agents i.e. retail or postal outlets that process financial transactions on behalf of telcos or banks. The banking agent is an important part of mobile banking business model since customer care, service quality and cash management will depend on them. Many telcos will work through their local airtime resellers.

Bank focused model

This model emerges when a traditional bank uses non traditional low cost delivery channels to provide banking services to existing customers. Examples range from use of ATM's to internet banking or mobile phone banking to provide certain limited banking services to bank's customers. This model is additive in nature and may be seen as a modest extension of conventional branch based banking.

Bank-led model

This model offers a distinct alternative to conventional branch based banking. The customer conducts financial transactions at a whole range of mobile phones instead of bank branches or through bank employees. This model promises the potential to substantially increase the financial services outreach by using a different delivery channel (retailers, mobile phones),a different trade partner (telco,chain store) having experience and target market distinct from traditional banks.In this model customer account relationship rests with the bank.

For the last ten years, technology has been the driving force in the banking industry. As foreign and private banks poured huge sum of money to counter the branch advantage of public sector banks, they discovered that technology gives them a large competitive advantage. Technology is helping the banks to reduce transaction cost and improve efficiency.ITES becomes unique Selling Proposition of the many players in the industry as it facilitates the innovations in all functional management activities-whether accounting,finance,productionand designing, marketing and customer management, research and development activities etc.

Some are investing in to drive the business growth, while others are having no option but to invest, to stay in business. 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 out sourcing of IT operations are the major challenges and issues in the use of IT in banking operations. The main challenge however remains to motivate customers to increasingly make use of IT while transacting with banks. For small banks, heavy investment requirement is the compressing need in addition to their capital requirements. The achievements in the banking today would not have made possible without IT revolution.

Customer Satisfaction

Good customer service is the best brand ambassador for any bank. Every engagement with the customer is an opportunity to either develop or destroy a customer's faith in the bank with increasing competition. Customer service has become the back bone for judging the performance of bonus. Customer's expectations are dynamic. They are always on the upward curve. In fact, earlier if the bank handed over the passbook updated every time the customer walked in, then it was considered to be good customer service. Today he does not come to the bank at all. Everything is done online. If the bank's service does not respond fast, the service is considered unsatisfactory.

Satisfaction is the level of perception of the buying resulting from comparing the perceived performance to the anticipation of buyer. If the buyer feels that the performance of the goods and services matches his expectations he may be considered as satisfied and if the performance exceeds the expectations of the buyer, he may consider it as highly satisfied.

The main aim of banking means accepting deposits from customers to lend money for various Business, Agricultural & Individual requirements and offer other services as to issue of demand draft, fund transfer, Utility payments etc.

Currently, after introduction of Private Sector Banks, Banks have become a profit centre and accordingly functions have diversified and now banks are engaged in providing Insurance, Mutual fund & host of related products/services to their clients.

After the liberalisation and opening up of the economy, the foreign banks and new private sector banks are entering into the Indian market. Under this condition offering of best customer service is a must for the Indian bank for theirown survival and growth. The fact that multi-national banks provide better services has forced the banks in public sector to upgrade their services to sustain in highly competitive environment.

The corporate banking sectors are increasingly becoming more demanding and high price sensitive in a competitive market.

There is a subjective attribute changing from customer to customer and time to time. There are many instances where the same customer and same bank staff felt happy and satisfied with one service and were dissatisfied with the other.The banks are looking for new ways not only to attract but also to retain the customers and gain competitive advantage over their competitors. The banks like other business organizations are deploying innovative sales techniques and advanced marketing tools to gain supremacy. The main driver of this change is changing customer needs and expectations. Customers in urban India no longer want to wait in long queues and spend hours in banking transactions. This change in customer attitude has gone hand in hand with the development of ATMs, Mobile phone and net banking along with availability of service right at the customer's doorstep. With the emergence of universal banking, banks aim to provide all banking product and service offering less than one roof and their endeavour is to be customer centric. While banks are striving to strengthen customer relationship and move towards ‘relationship banking,’ customers are increasingly moving away from the confines of traditional branch banking and seeking the convenience of remote electronic banking. Information technology and the communications networking systems have revolutionarised the working of banks and financial entities all over the world.

Dr. C. Rangarajan Committee [1983]

Dr. Rangarajan committee had drawn up in 1983-84 the first blue print for computerisation and mechanisation in banking industry and looked into modalities of drawing up a phased plan for mechanisation for the banking industry covering period 1985-89. The committee in its report in 1984 recommended introduction of computerisation and mechanisation at branch, regional office / zonal office and head office levels of banks.

In 1988 another committee was constituted under the chairmanship of Dr. Rangarajan for making plans for computerisation for the next five years from 1990-94 for the banking industry. It identified the purpose of computerisation as improvement incustomer service, decision making, house-keeping and profitability. The committee observed that banking is a service industry and improved efficiency will lead to a faster rate of growth in output and help toexpand employment all around. The work force in the banking industry must, therefore, look upon computerisation as a means to improve customer service and must welcome it in that spirit.

W.S. Saraf Committee [1994]

In 1994, the Governor, Reserve bank of India had appointed a committee on technology issues under the chairmanship of W. S. Saraf. The committee looked into technological issues related to the payment system and to make recommendations for widening the use of modern technology in the banking industry. The Saraf committee recommended toset-up institutions for electronic funds transfer system in India. The committee also reviewed the telecommunication system like use of BANKNET and optimum utilization of SWIFT by the banks in India.

Shere Committee [1995]

In 1995, RBI formed a committee under the chairmanship of K. S. Shere, to study all aspects relating to electronic funds transfer and propose appropriate legislation. The Shere committee had recommended framing of RBI (EFT system) regulations under 59.section 58 of the Reserve bank of India Act 1934 (RBI Act.), amendments to the RBI act and to the bankers book evidence act, 1891 as short term measures and enacting of a few new acts such as EFT act, the computer misuse and data protection act etc. as long term measures.

Narasimhan Committee [1998]

In order to examine the various issues related to the technology upgradation in the banking sector, the Reserve Bank of India appointed Narasimhan committee in September 1998. The committee consists of representatives from the Government, Reserve Bank of India, banks and academic institutions associated with the information technology. The committee dealt with the issues on technology upgradation and observed that the most of the technology that could be considered suitable for India in some form or the other has been introduced in some diluted form or as a pilot project, but the desired success has not been achieved because of the reasons inter-alia lack of clarity and certainty on legal issues. The committee also suggested implementation of the necessary legislative changes, keeping in the view the recommendations of Shere committee. The need for addressing the following issues was also emphasised:-

• Encryption on Public Switching Telephone Network (PSTN) lines
• Admission of electronic files as evidence
• Treating Electronic Funds Transfers on par with crossed cheques / drafts for purposes of Income Tax etc
• Electronic Record keeping
• Provide data protection
• Implementation of digital signatures
• Clarification on payment finality in case of EFT

Waves in banking technology [8] [9] [10]

As per the Reports of RBI [8] [9], the first wave in banking technology began with the use of Advanced Ledger Posting Machines (ALPM) in the 1980s. The RBI advised all the banks to go in for huge computerisation at the branch level. There were two options: automate the front office or the back office. Many banks opted for automating the front office in the first phase. Whereas banks like State Bank of India also concentrated on the back office automation at the branch level.

The Second wave of development was in Total Branch Automation (TBA) which came in late 1980s. This automated both the front-end and back-end operations within the same branch. TBA comprised of total automation of a particular branch with its own database. In the third wave, the new private sector banks entered into the field of automation. These banks opted for different models of having a single centralized database instead of having multiple databases for all their branches. This was possible due to the availability of good network infrastructure. Earlier, banks were not confident of running the whole operation through a single data center. However, when a couple of private sector banks showed that it can be done efficiently, other banks began to show interest and they also began consolidating their databases into a single database. The banks followed up on this move by choosing suitable application software that would support centralised operations.

The fourth wave started with the evolution of the ATM delivery channel. This was the first stage of empowerment of the customer for his own transactions. The second stage was the Suvidha experiment in Bangalore. This showed the power of technology and how the reach can be increased amazingly at a great pace. Seeing these, all the banks started revamping their retail delivery channels. Their core focus became increasing the number of customers they can service at a lower cost. The main channels for these were internet banking and mobile banking. After this, came the alliances for payment through various other gateways. The third important development happening now is the real-time gross settlement system of the RBI. Once this was in place, transactions between banks could be done through the settlement system, online, electronically thereby, ensuring fastercollection.

Core Banking Solutions (CBS).

A key trend in the last couple of years has been the focus on core banking systems. With the implementation of core banking systems across the banks, the usage level of IT for customer management has increased. Core banking systems have enabled banks to launch new products and services targeting specific customer segments after understanding their banking and investment requirements.

ATM, internet banking and mobile banking have improved customer convenience by providing anywhere any time banking services. The utility bill presenting and payment has helped customers to pay their bills online at the click of a button. Electronic clearing system and electronic funds transfer have facilitated faster funds movement and settlement for the customers of different banks and different centers. The electronic data interchange and cash management service facilities have enabled better funds management for the customer. Very few banks offered customers the ability to access their accounts and perform at least simple money transactions using internet banking. Advancements in information technology have made it possible for the banks to use the internet as a delivery channel for banking services. Technological developments have introduced tremendous changes in the ability of financial and non financial firms to efficiently collect, store, use and sell information about their customers.

Applications of IT in the banking sector

Uppal R. K. [17] described that in the post-LPG (Liberalization, Privatization and Globalization) era and Information Technology (IT) era, transformation in Indian banks is taking place with different parameters and the curves of banking services are dynamically altering the face of banking, as banks are stepping towards e-banking from traditional banking. The paper empirically analyzes the quality of e-banking services in the changing environment. With different statistical tools such as weighted average method and ranking, the paper concludes that most of the customers of e-banks are satisfied with the different e-channels and their services, but the lack of awareness is a major obstacle in the spread of e-banking services. The paper also suggests some measures to make e-banking services more effective in the future.

Kamakodi et al. [18] discussed that, it is almost 15 years since the Indian banking sector was liberalized and paradigm shift happened in the Indian banking services. All banks have either totally implemented ‘core banking systems’ or halfway through. The results of a survey, obtained from 292 respondents about their views on electronic bankingchannels, indicate that the banks are exceeding the expectations in technology based services; and their perceived service level on branch network is below the expected levels of the respondents. This result is in tune with the respondents’ opinion on the perceived ‘gap’ with the bank because of the introduction of technology, and on the necessity of human contact with the clients by the banks. This throws up a challenge to banks. Technology alone cannot give a sustainable competitive advantage for the banks.When all banks introduce IT, it will lose its position as a differentiator. Beyond a point, IT along with ‘personal touch’ will be necessary for the banks to retain existing clients and to attract new ones. Banks have to incorporate this in their operational strategy.

Geetika et.al. [26] discussed the concept of Internet Banking, perception of Internet bank customers, non-customers and issues of major concern in Internet banking. The state of Internet banking in India has been explored using various concepts like E-banking scale, and gap analysis related to the various services and the security features offered. In order to have a clear and focused insight about the perceptions of users (and non-users) about Internet banking a survey was conducted. The findings of the survey provide valuable insights into concern for security, reasons for lower penetration, and likeliness of adoption, which have been used to make useful recommendations.

RadhakrishnaGeeta and Pointon Leo [27] examined the legal issues specific to internet banking, focusing on the incidence of fraud and its prosecution. The objective of research was to investigate three questions in relation to Malaysia. Firstly, the incidence of fraud in internet banking; secondly, the adequacy of the relevant regulations and statutes; and thirdly, whether the setting up of a cyber court would better facilitate the prosecution of such financial crimes in Malaysia. Technology and the borderless nature of the internet present fraudsters with manifold opportunities. ‘Phishing’ leads to identity theft and ‘money laundering’ has been found to be the main threat to internet banking. The newness of the subject and traditional banking secrecy have contributed to a dearth oflegal literature pertaining to issues in internet banking, specific to Malaysia. It was found that the applicability of various existing laws and banking practices to internet banking has not been fully tested in Malaysia and is still evolving.

The study conducted by the authors Jain Abhay and Hundal B. S. [28] presented the rapid changes in the financial services environment—increased competition by new players, product innovations, globalization and technological advancementhave led to a market situation where battle for customers has become intense. In order to rise up to the challenges, service providers are even more interested to enhance their understanding towards consumer behavior patterns.

V. Radha [30] discussed about the technology based opportunities that the thieves take advantage of and how to limit the frauds by building the future technology accordingly. In her study, the author described the kind of fraud that can happen in the emerging banking scenario as follows:

Mail Spoofing: Sending wrong information to bank customers as if it is from authentic bank sources

Web Spoofing: Diverting the customers of a bank to an exactly duplicated forged web site and impersonating those customers on real bank site

Attacking the User Computer: To take control of that machine

Attacking a Bank's Server: To take control of that machine

Media tapping: Recording the whole transactions of a bank, or customer etc.andreplaying the same for their advantage

Denying Service: Though the server is available, making it not able to render service by, poisoning the Network Infrastructure

The author also described the prevention mechanism to minimize the frauds, by usingpublic key infrastructure (PKI). The PKI assures confidentiality, authenticity, and integrity of information which two or more members' exchange.

In a survey conducted by the Online Banking Association, member institutions rated security as the most important issue of online banking. There is a dual requirement to protect customer's privacy and protect it against fraud. A multi-layered security architecture comprising firewalls, filtering routers, encryption and digital certification ensures that your account information is protected from unauthorized access. Firewalls and filtering routers ensure that only the legitimate Internet users are allowed to access the system. Encryption techniques used by the bank (including the sophisticated public key encryption) would ensure that privacy of data flowing between the browser and the Infinity system is protected. Digital certification procedures provide the assurance that the data you receive is from the Infinity system

Internet Banking

With the extensive technology innovation and telecommunications, we haveseennew financial distribution channels increasing rapidly both in numbersand form, from ATMs, telephone banking to PC banking (Easingwood&Storey, 1996), and Internet Banking is the latest in the series of technologicalwonders of the recent past (Mols, 1999).

Following the boom of Internet, the Internet can no longer be considered a“fad” or the preserve of “techies” and “computer nerds”. Commercial uses ofthe Net have become the fastest growing part of the World Wide Web (WWW)(Hamid et al, 2007).

About the same time, Internet Banking was thought tosignal a revolution in banking distribution. Banks invested heavily in thedevelopment of the Internet channels (Accenture, 2005)

Internet Banking has experienced explosive growth in many countries and has transformedtraditional banking practice (Mols, 1999).

Inevitability, Internet Banking will continue to revolutionize the current traditional banking industry and offers more opportunity to meet better consumer services through enhancedinteraction, data mining and customization in the Internet Banking services(Hamid et al, 2007).

Online banking was first introduced in the early 1980s (Kalakota andWhinston, 1997), in which consumers were provided with an applicationsoftware program that operates on personal computer (PC) which can bedialed into the bank via a modem, telephone line and operated the programsremotely on the consumer PC. However, the lack of Internet users, and costsassociated with using online banking, stunted its growth. It was only in the late1990s that Internet Banking really caught on as the Internet explosion hadmade consumers more comfortable with making transactions over the web.

During dotcom fallout, it became apparent that Internet Banking was not thepanacea banks had thought it to be. Between 2001 and 2004 Internet Bankinginvestment growth experienced a significant slowdown. Nevertheless thecustomer base for Internet Banking was growing steadily from 2000 to 2005

(Accenture, 2005)With respect to Internet Banking, a common confusion exists between theterms of online banking, Internet Banking as well as PC banking. The termsInternet Banking and online banking are often used in the literature to refer the same things.According to Hamid et al (2007), online banking is anotherterm used for Internet Banking. Both share the similar meaning.InternetBanking or online banking can be defined as the service that allowsconsumers to perform banking transactions using a computer with an Internetconnection (Lloyd, 2007).

Thulani et al (2009) refer Internet Banking as systems that enable bank customers to get access to their accounts and general information on bank products and services through the use of bank' website, without the intervention or inconvenience of sending letters, faxes,original signatures and telephone confirmations. It is the types of servicesthrough which bank customers can request information and carry out mosttraditional retail banking services such as opening an account or transferringfunds to different accounts, and new banking services, such as electroniconline payments via a telecommunication network without leaving their homes.

At an advanced level, Internet Banking is called transactional online banking (Sathye, 1999).On the other hand, PC banking is defined as a home banking whereby consumers supplied with a financialsoftware package on disks, allowing consumers to fill in details offline andthen to send them into the bank over the bank's private network. Unlike PCbanking, Internet Banking or online banking does not require proprietarysoftware or access to a private networkISACA (Information Systems Audit and Control Association) recorded thatmore and more banks are transforming their businesses by using Internettechnology to develop or expand relationships with their customers. Theextent to which the Internet is used in a bank depends on the relative maturityof the bank in regard to Internet technology. Banks offer Internet Banking intwo main ways. An existing bank with physical offices, ordinarily termed abrick-and-mortar bank, can establish a website and offer Internet Banking toits customers as an addition to its traditional delivery channels. An alternativeis to establish either a virtual, branchless or Internet-only bank. The computerserver or bank database that lies at the heart of a virtual bank may be housedin an office that serves as the legal address of such a bank or at some otherlocation. Virtual banks provide customers with the ability to make deposits andwithdrawals via automated teller machines (ATMs) or through other remotedelivery channels owned by other institutions (www.isaca.org).

Statement of the problem

Irinjalakuda is a small but famous town in Thrissur district of Kerala. Some of the important public sector banks in Irinjalakuda are The State Bank of Travancore, State Bank of India, Catholic Syrian Bank, Bank of Baroda, Punjab National Bank, Indian overseas Bank etc. The present banking scenario in Irinjalakuda has changed. There are a large number of private and new generation banks now. The banking industry in Irinjalakuda has developed and expanded due to the increasing demands of the flourishing business units in Irinjalakuda. The name of Irinjalakuda has reached all over the world through its famous products like K.SCattlefeed, Chandrika soap, KPL Nirmal oil and art and culture through UnnayiWarrierKalanilayam. Today banks are under the constant pressure of providing products and services that satisfy the demands and requirements of its customers.

Satisfaction is the level of perception of buying, resulting from comparing the perceived performance to the anticipation of the buyer. If the buyer feels that the performance of goods and services, matches his expectations, he may be considered as satisfied, and if the performance exceeds the expectations of the buyer, he may consider it as highly satisfied. The primary aim of modern banking is to satisfy the customer by meeting their needs and wants and through that, profit is made. Thus modern banking has now become customer oriented. After liberalization and opening up of the economy, the foreign banks and new private sector banks are entering into the Indian market. Under this circumstance, offering of innovative banking services is a must for the survival and growth of banks. Attempts are made by Public sector banks to leverage technology for adding value to customer services and cutting cost. Many developments in telecommunication technology and electronic data processing in recent years have contributed to remarkable changes in the banking sector. Availability of ATM's and plastic money has helped customers avoid going to bank premises for cash.

Objectives of the study

- To study the various innovative practices adopted in the public sector banks
- To study the customers awareness regarding the innovative bank products
- To analyse the satisfaction attained through the use of the innovative bank products
- To examine the problems faced by customers while using these innovative products.

Significance of the study

Changing technologies are presenting a new challenge to banks to keep up with customer expectations, although the concept of online banking has not taken off completely in this part of the world. Internet and advanced wireless connectivity technology are changing the way customers expect service delivery. Banks are under pressure to ramp up their customer contact operation in order not only to fulfill customer expectation but also to survive in competitive world. The globalisation process and opening up of Indian economy, have given reason for the banking sector to rethink its existing strategies. The penetration of computers and growth in internet usage is making customers to crave for more and more services, more revenue etc.The advance of communication and computer technology and availability of internet have made it possible that one can do most banking transactions from a remote location even without stepping into a physical financial structure.

Research Methodology

Primary data and secondary data are used for the purpose of the study. Primary data has been collected with the help of questionnaire and interviews with bank personnel. Secondary data has been collected from magazines, journals and websites.

Size of sample

A sample of 75 customers of major public sector banks of Irinjalakuda was selected for the purpose of the study.

Tools for Data Analysis

Data has been analysed using percentage analysis,Likert's scale and 't' test. Bar diagrams and Pie charts were used for representing data.

Limitations of the study

- The study is limited to the public sector banks in Irinjalakuda.
- Limited Sample size.
- Lack of response to certain questions from respondents.

Chapterisation

The study is divided into five chapters

Chapter 1 deals with introduction, statement of the problem, objectives, methodology, tools used for the study and limitations of the study

Chapter 2 deals with review of literature

Chapter 3 consists of data analysis and presentation in the form of tables and charts.

Chapter 4deals with the second part of data analysis.

Chapter 5 includes summary, conclusion and suggestions

CHAPTER II

REVIEW OF LITERATURE

Review of Literature

Review of literature is a very significant part of research, especially in Social Science Research. It helps the researcher to gain a wider and deeper understanding of the area of study. In this chapter a brief review of studies related to innovative practices, public sector banks and customer satisfaction have been included.

Financial innovations, lower cost of capital, reduce financial risks improve financial intermediation and enhance welfare. The primary function of financial system is to facilitate allocation and deployment of economic resources in an uncertain environment. Financial innovation is helpful in ensuring smooth functioning and improves overall efficiency of the system by minimizing cost and reducing risk.

Seema Malik (2014) in her paper entitled 'Technological Innovations in Indian Banking sectors: changed face of banking 'is of the opinion that the benefits of technology have brought a sea change in the outlook of modern banking. Now the goal of banking is not just to satisfy but to engage with customers and enrich their experience and for the successful achievement of this goal, the only sustainable competitive advantage is to give the customer an optimum blend of technology and traditional service.

AnithaShopuri and Dr. Anuj Sheopuri (2014) opined that Public sector banks have begun to revise their growth approach and re-evaluate the prospects on hand to keep their economy rolling for their survival. The main point of focus is of survival for the bank is to innovate and to take advantage of the new business opportunities and at the same time ensure continuous assessment of risks

KPMG report (2013) states that 'After a strong growth phase during 2000-2008,last five years witnessed a change in growth trajectory of many banks. We have observed that, while some of the banks went into a consolidation drive, others chose to calibrate their exposure to certain segments. Recent economic slowdown combined with after effects of global financial crisis, stringent regulations and the government's inability to adequately fund public sector banks

(PSBs) seems to have cast a shadow over the high growth of the Indian banking sector. Declining profitability of PSBs There has been pressure on PSBs to be competitive and improve their profitability but they have been lagging behind their private counterparts. In fact, the last five years were watershed years for PSBs in terms of deteriorating profitability as reflected in their Return on Equity (RoE) and Net Interest Margins (NIMs). The RoE for nationalized banks in FY13 was 12.34 per cent as compared to 16.51 per cent of new private sector banks as reflected in the RoE of banks table

Hua G. (2009) investigates the online banking acceptance in China by conducting an experiment to investigate how users' perception about online banking is affected by the perceived ease of use of website and the privacy policy provided by the online banking website.

More generally, financial innovation has been a central force driving the financial system toward greater economic efficiency (Merton and Bodie 2005). Technological change and the advent of the internet are among the most dramatic and challenging areas of change for the sector.

According to NarraVishnumurthy and Prasad Reddy KMU(2005) in their study titled "Pricing Innovative Product through Internet Research" the modern consumer is a complex being in terms of ideas, conceptions, perceptions, attitudes, concepts and interests. His needs, expectation and above all his individual and collective interests are highly complex ,neither which not made producer is able to predict nor any single producer able to satisfy in totality.

Ananthakrishnan G. (2005) described customer's services in the banks. Thediscriminating customer's expectations have begun to change in terms of quality andservice. With the advent of computers and ATMs, the gap between the customers and the banking personnel is widening. Unless a change of heart occurs, even the largest banks will find it hard to survive on their assumed false glory. Banks which take care to see the reality and react early will survive and prosper, while those who continue the traditional path will find their market share eaten away. Nowadays customers are no longer willing to wait in long queues or tolerate arrogant behaviour of the employees. As applicable to banking, "customer service" may be defined as the ability to satisfy the customer's requirements and needs to the fullest extent and be able to replicate this on an on-going basis.

Rajshekhara K. S. (2004) described the adoption of IT in banking has undergone several changes with the passage of time. Today IT has become an inseparable segment of banking organization. The application of information technology in the banking sector resulted in the development of different concepts of banking such as – E-banking, Internet Banking, Online Banking, Telephone Banking, Automated teller machine, universal banking and investment banking etc. Information technology has a lot of influence on banking transactions. It ensures quick service with low transaction cost to the customers. The real success of IT in the banking sector depends upon the customer's satisfaction. Therefore banks should organize and conduct customer awareness program in their service area.

Jadhav Anil (2004) described various channels of e-banking services such as ATM, Telephone banking (Tele-banking), Mobile banking, Internet banking and its features. The focus is also given on e-banking opportunities, challenges and security aspects while performing the banking transactions on the internet. Comparison of public, private, foreign and co-operative banks and barriers to the growth of e-banking in India are also discussed. Finally the paper discusses an overview of the major private sector banks such as ICICI, HDFC, IDBI, UTI & GTB banks which provides e-banking services.

Mishra A. K. described that the Internet banking is a cost-effective delivery channel for financial institutions. The author also describes the advantages of internet banking, current status of internet banking in India, and the mechanism to protect the customer's data.

Saxena (2004) The Study identified that technological innovations in the banking sector in industrialized countries have been shown to increase productivity of banking industry around the world.

[Anil Jadhav&RajniJadhav, 2004] opine that the banks as well as customers have a serious concern about the security of Internet access to client account which is the biggest challenge. Banking through the Internet is increasingly

HebbarRaveendranath (2004) [29] described that the advancements in computing and telecom have revolutionised the financial industry. Banks are developing alternative channels of delivery like ATM, telebanking, remote access, internet banking etc., Some questions that need to be answered are , how can one trust these channels, our personal data and transactions which are driven by technology. Are they reliable and accurate? Is there a way out to independently validate the integrity of information? If we analyse, why the lack of trust exists, we realize that the primary issues center on the following aspects of information security:

• *Authentication and identity of user:* The act of verifying the identity of a user. How to recognize the person dealing on the net? Can one be sure of his or her identity?

• *Confidentiality:* How can one be sure that the information transmitted has not been intercepted or viewed by any other party in transit?

• *Integrity:* How can one ensure that the information sent, received or stored has not
been tampered with the modified at any time?

• *Non-Repudiation:* What is the guarantee that a particular transaction or action took place? Would this hold the tests of court of law?

Implementation of SET, the standard for Secure Electronic Transaction on the Internet and its wide spread adoption including security measures like encryption, digital authentication and verification of online identity increases the consumer's confidence.

Mittal R. K. and Dhingra Sanjay discussed the issue that the transaction through technology channels cost much less to the banks than the customers reaching the bank and doing the transactions. In the last decade banks have invested heavily in the technology. In the use of information technology, the new private and foreign sector banks have taken lead over the public and old private sector banks. Today public sector banks are also investing heavily in technology to compete with the new private and foreign sector banks. In the study authors have identified the different technology issues and challenges such as choice of right channel, justification of IT investment in terms of ROI (Rate of Interest), e-governance, customer relationship management, securityconcerns, penetration of IT in rural areas etc. Banks are required to address these issues and challenges effectively to stay in business and grow.

Arora (2003) highlighted the significance of bank transformation. Technology has a definitive role in facilitating transactions in the banking sector and the impact of technology implementation has resulted in the introduction of new products and services by various banks in India.

B. Janki (2002) analyzed that how technology is affecting the employees' productivity. There is no doubt, in India particularly public sector banks will need to use technology to improve operating efficiency and customer services. The focus on technology will increase like never before to add value to customer services, develop new products, strengthen risk management etc. the study concludes that technology is the only tool to achieve their goals.

Balasubramanya S.(2002) in his study analysed that the automation in the banking sector has come a long way starting with the Rangarajan Committee report on the banking sector reforms during the eighties, followed by reports of the Narasimhan Committee in the nineties. With over 65,000 branches of the banks (public, private and the cooperative sector) in the country, the author found that the percentage of branches covered by automation was very low. Though many banks had claimed that more than 70% business has been automated due to the enforcement of RBI guidelines, in reality it was much lower, as many functions in each branch were still done manually or with partial automation. Hence, there was a significant amount of automation work to be achieved in the banking sector.

(Athanassopoulo2001) commented that increasing competitiveness in electronic commerce because of large number of agents involved in it, the reduced search costs and the high power obtained by the consumer with the appearance of the Internet, therefore, it is difficult to increase the client base of an online business and, as a result, the development of customer loyalty and positive WOM are two of the main objectives aimed at by today's online businesses.

Berry and Parasuraman (1991) argue that since customers' satisfaction is influenced by the availability of customer services, the provision of quality customer service has become a major concern of all businesses. Customer satisfaction is typically defined as a post consumption evaluative judgement concerning a specific product or service. It is the result of an evaluative process that contracts pre-purchase expectations with perceptions of performance during and after the consumption experience.

Durkin et al. (2008) made note on the simplicity of the products offered via Internet Banking facilitates the adoption of Internet Banking by consumers. While the adoption of Internet Banking by consumers is heavily researched there are researches on the supply side of Internet Banking.

Berger (2007) argues that a sound understanding of client is required forimprovement of e-banking. Thus, all relevant information about the clients should be taken into account and a client-centric strategy should be developed.

Sciglimpaglia and Ely (2002) suggested that banks are vulnerable to loss of customers to rivals with extensive online services. Customer account relationships are found to be predictive of electronic services use in general. And, interest in the use ofspecific online services is related to differing customer relationships.

As supported by McMahon (1996), for banks to survive in the e-banking era, theretail banks will have to earn consumer loyalty through product features andservices excellence.

CHAPTER III

DATA ANALYSIS I

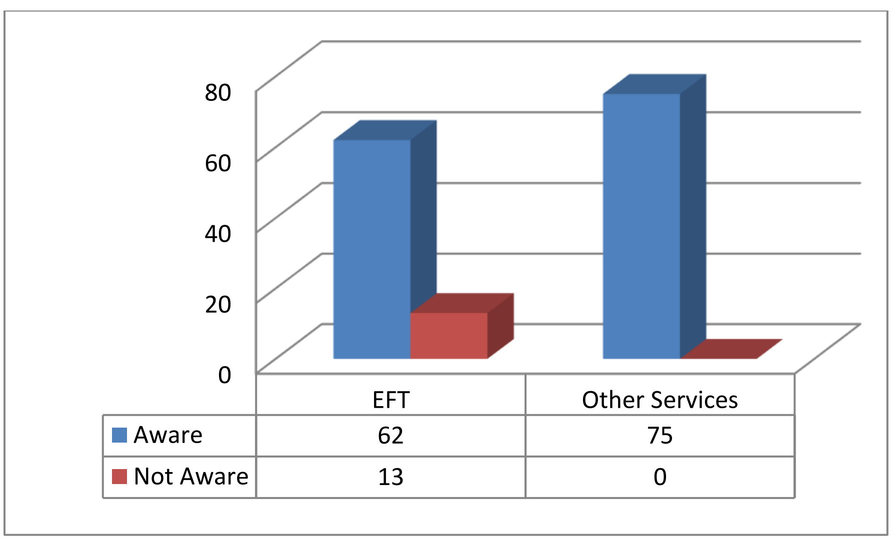
This chapter deals with data analysis regarding the customer's awareness regarding various innovative practices. Customer behavioral pattern with respect to Bank services and their usage has also been analysed.The analysed data has been presented in the form of tables and diagrams.

Table 3.1

Degree of Awareness of services

Number	Electronic fund transfer	Other services(ATM,Credit/Debit card,M-banking etc)
Aware	62	75
Not aware	13	Nil
Total	75	75

Figure 3.1
Degree of Awareness of Services



From the above table/figure it can be seen that entire 75 customers were aware about ATM, Credit/Debit card, M-banking etc and out of 75 only 13 customers were not aware of Electronic fund transfer.

Table 3.2

Ranking on the basis of reasons for availing the services

Rank	Avoidance	Convenience	Prestige	Immediate	Cash
1	4	58	1	7	5
2	9	7	4	21	34
3	6	4	6	44	15
4	47	4	5	3	16
5	9	2	59	0	5

From the above table it can be seen that 58 customers out of 75 assigned first rank for convenience factor. Only 7 customers assigned first rank to immediate withdrawal facility. Five customers assigned first rank to cash withdrawal and 4 assigned first preference towards avoidance of risk factor. Only one customer assigned first rank to prestige factor. The major reason behind availing these innovative services are on account of convenience factor.

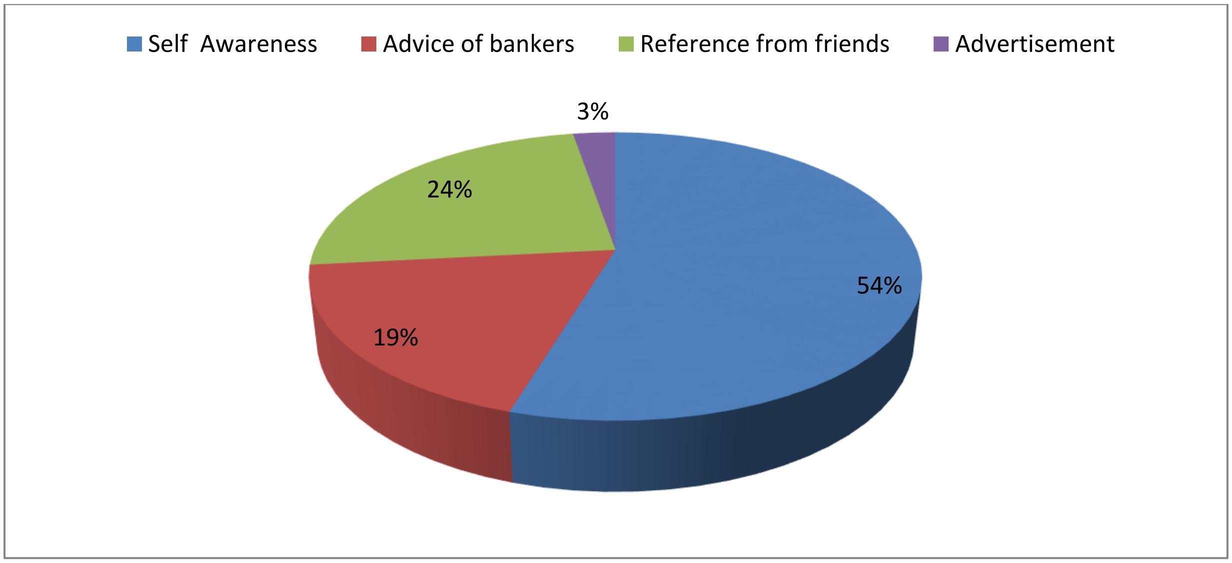
Table 3.3

Driving force for availing innovative services

Driving force	Number
Self Awareness	41
Advice of bankers	14
Reference from friends	18
Advertisement	2
Total	75

From the above table it is clear that forty one customers avail the innovative services of the Bank due to self awareness. Reference from friends and relatives is the driving force behind the usage of these services by eighteen customers. Fourteen of the customers are influenced by advice of their Bankers. Two of the customers are influenced through various advertisements.

Figure 3.2
Driving Force for availing Innovative Services



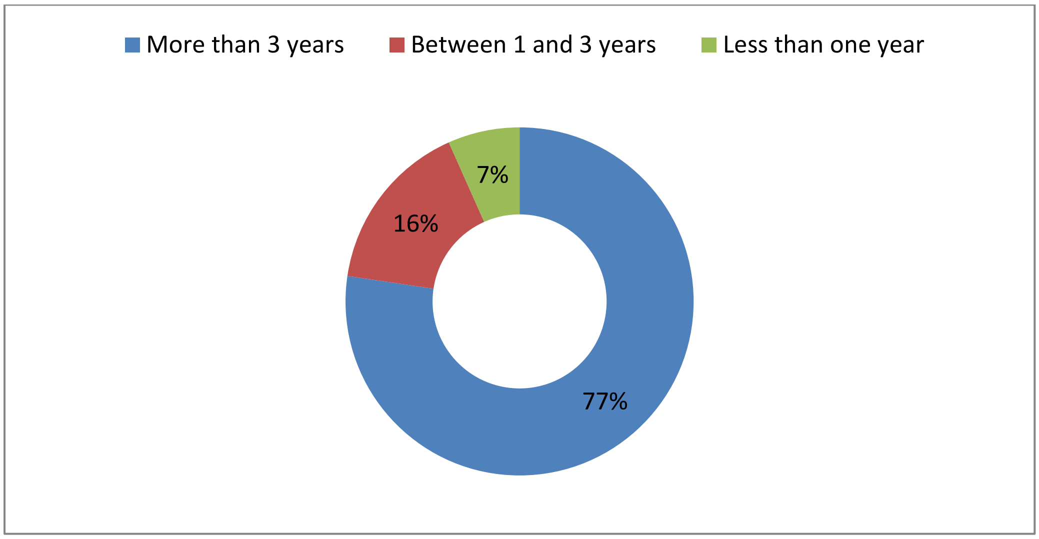
From the above figure it can be seen that majority customers used these innovative services provided by the bank due to their own awareness. Only 2 (i.e.3%)was customers influenced by advertisement.

Table 3.4
Frequency of using innovative services

Frequency of availing service	Number
More than 3 years	58
Between 1 and 3 years	12
Less than one year	5
Total	75

From the above table it is clear that 58 customers was availing the innovative services for more than 3 years. 12 customers surveyed were availing innovative services between 1 to 3 years and remaining 5 customers was availing the innovative services for less than one year.

Figure 3.3
Frequency of using innovative services



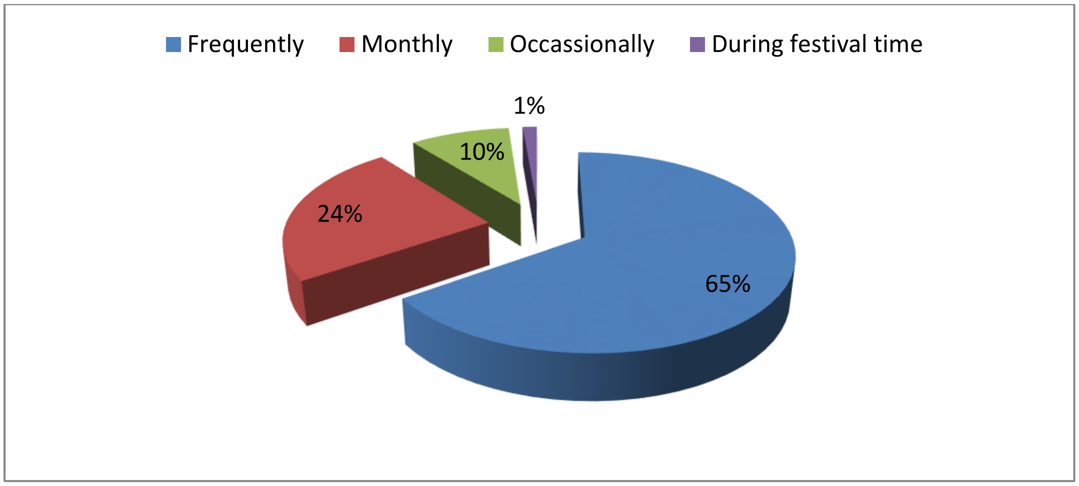
From the above figure it is evident that 77% ofcustomers were using innovative services for more than 3 years, while only 7% of customers were using them for less than one year.

Table 3.5
Time gap of availing innovative services

Time gap	Number
Frequently	49
Monthly	18
Occasionally	7
During festival time	1
Total	75

From the above table it is clear that 49 customers was frequently availing the innovative services, 18 customers surveyed were availing innovative services once in a month, while 7 customers was occasionally using the innovative services and just one customer based on the selected sample was availing the facilities during festival time.

Figure 3.4
Time gap of availing innovative services



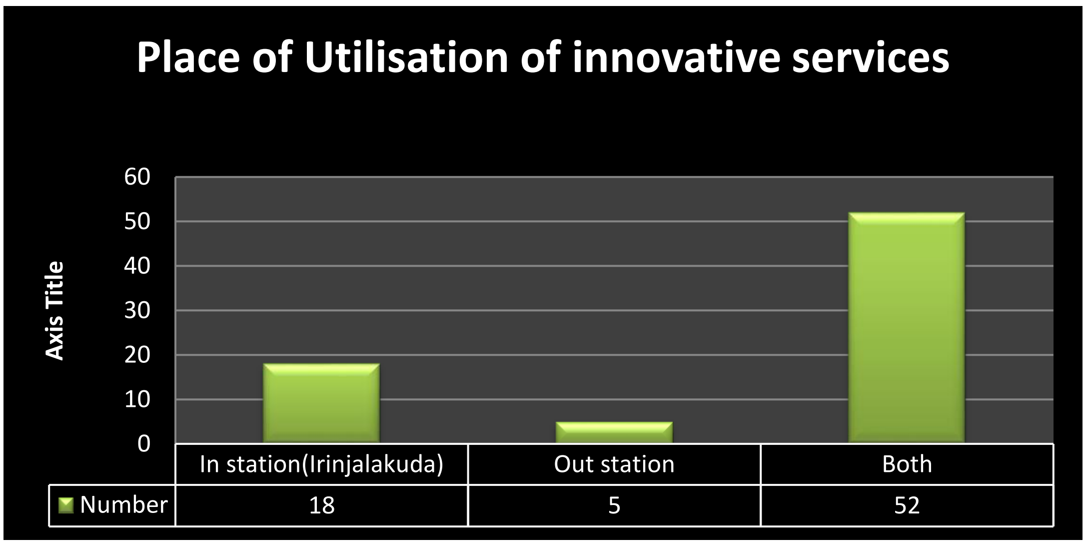
From the above figure it is understood that 65% of customers were using facilities more frequently and only 1%of customers was using them only in festival time.

Table 3.6
Place of Utilisation of innovative services

Place of utilization	Number
In station(Irinjalakuda)	18
Out station	5
Both	52
Total	75

From the above table it is clear that 18 of the customers was availing the services while stationed at their respective location, 5 of the customers from the sample was availing the services while out of station, while majority of the clients (i.e. 52) of the clients availed the services when stationed at their respective location as well as they were out of station.

Figure 3.5
Place of utilization of innovative services



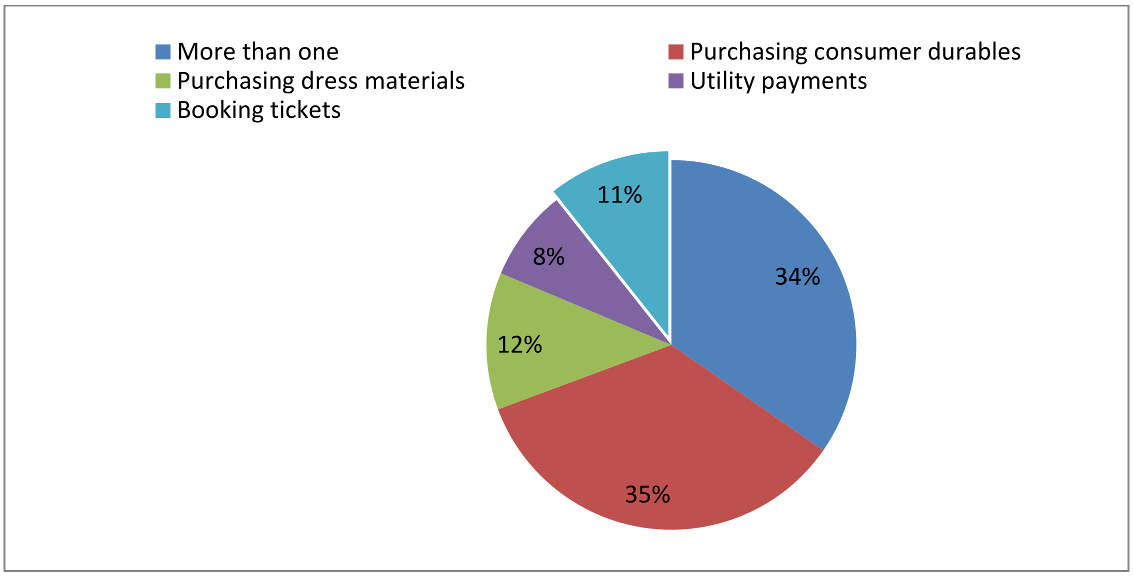
From the figure it is clear that majority of customers i.e. 52 out of 75 were availing these facilities when they are both in Irinjalakuda and outside. Only 5 customers were using only when they are out station.

Table 3.7
Cash Utilisation

Purpose of usage	Number	Percentage of total
More than one purpose	26	34
Purchasing consumer durables	26	35
Purchasing dress materials	9	12
Utility payments	6	8
Booking tickets	8	11
Total	75	100

From the above table it is clear that 26 customers was using the money for more than one purpose and an equal number of them only used money to purchase consumer durables. Out of the selected sample 9 of them was using money to purchase dress materials, while 6 of them used the money to pay utility payments and remaining 8 customers utilized money to book travel tickets.

Figure 3.6
Cash Utilisation



Regarding cash utilisation34% of customers were utilizing the amount for more than one purpose and 35% of customers utilized the amount for purchasing consumer durables. Only 8% of customers utilized for making payment of telephone bills and electricity bills.

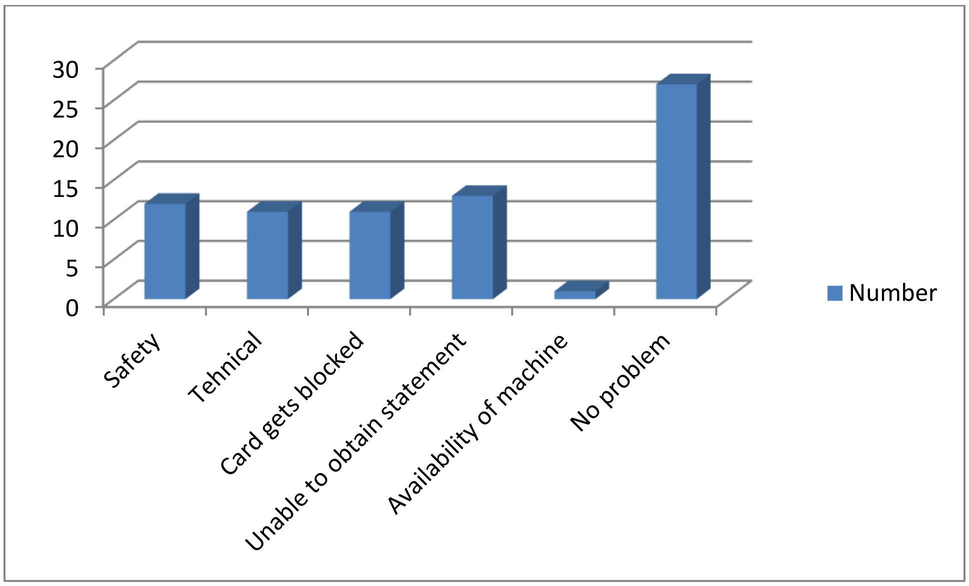
Table 3.8
Problems faced while availing services

Problems faced	Number
Safety /Security issues	12
Tehnical	11
Card gets blocked	11
Unable to obtain statement	13
Availability of machine	1

No problem	27
Total	75

From the table it can be seen that majority of customers did not have any problem while using these services and only one complained about the availability of machine

Figure 3.7
Number of customers encountering various problems while using the Banking services



From the above figure it can be observed that 27 customers did not face any problems at all. Twelve customers have security concerns, while 11 customers each face technical and card related issues. 13 customers were unable to obtain statements.

This chapter dealt with Data analysis regarding customer behavioral pattern and customer awareness regarding various innovative practices. The next chapter deals with cash withdrawal pattern before and after introduction of various innovative banking practices.

CHAPTER IV

DATA ANALYSIS PART II

Hypothesis testing

This chapter deals with the cash withdrawal pattern of customers before and after the introduction of various innovative practices by the banks. A study was conducted to know whether there is a considerable increase in the number of withdrawals as a result of introduction of these innovative practices. A sample of 15 middle aged customers of banks were selected and they were asked to give the number of withdrawals before and after the introduction of innovative services. Data was collected on yearly basis. Paired 't' test was conducted to know the change. It was found that there has been considerable increase in the number of withdrawals after the introduction of the various innovative practices.

T test- THEORY-HYPOTHESIS TESTING

H0-There has been no change in the number of withdrawals as a result of introduction of innovative services

H1-There has been considerable increase in the number of withdrawals as a result of introduction of innovative services

Test statistic- t test

t=3.29

TABLE 4.1

Difference In Withdrawal Pattern

d1	d2	d(d2-d1)	D2
8	20	12	144
12	26	14	196
6	12	6	36
12	23	11	121
7	15	8	64
15	25	10	100
17	15	-2	4
9	12	3	9
12	12	0	0

10	8	-2	4
12	20	8	64
24	24	0	0
12	9	-3	9
8	12	4	16
9	11	2	4
-	-	71	771

d=4.73

s^2=29.0271

n-1 =15-1=14

Level of significance =5%

Degrees of freedom =n-1=14

Table value of t at 5% level of significance at 14 degrees of freedom is 2.15

Decision

As calculated value of t is more than table value, reject H0

Conclusion

It can be concluded that there has been considerable increase in the number of withdrawals as a result of introduction of innovative services

The major reasons for availing innovative practices was analysed and 75 customers were asked to rank them according to their preference. A 5 point scale was used to rank the preference of the customers. Weightage was assigned to various ranks.

Table 4.2

Assignment of weightage according to customer preference

Rank	Weightage
First	5
Second	4
Third	3

Fourth	2
Fifth	1

Table 4.3
Reasons for availing innovative facilities

Rank/Reasons	No	1 (5)	No	11 (4)	No	111 (3)	No	1V (2)	No	V (1)	Weighted score	Mean score	Rank
Avoidance	4	20	9	36	6	18	47	94	9	9	177	2.36	IV
Convenience	58	290	7	28	4	12	4	8	2	2	340	4.53	1
Prestige	1	5	4	16	6	18	5	10	59	59	108	1.44	V
Immediate Withdrawal	7	35	21	84	44	132	3	6	0	0	257	3.43	11
Ready Cashfacility	5	25	34	136	15	45	16	32	5	5	243	3.24	111
Total	75		75		75		75		75				

Highest mean score was for convenience (4.53). So it was assigned I rank. Next mean score was for immediate withdrawal. (3.43).So it was assigned II rank. Then mean score was for Ready cash facility (3.24).It was assigned III rank. The fourth mean score was for Avoidance of risk (2.36),it was assigned IV rank. The last mean score was for Prestige(1.44).It was assigned V rank.

CHAPTER - V

Summary, Findings, Recommendation and Conclusion

Summary

The conventional functions of banking are confined to accept deposits and lend money through loans and advances. It is a tedious and time consuming process. Currently use of Information technology has given rise to innovations in the products, services, designing and their delivery in the banking and finance sector. Customer services and satisfaction are their main focus.Present banking scenario has come up with a lot of new initiatives which are oriented to provide better customer service and facilities aided by Information technology. In today's competitive banking environment improvement in customer service is the most significant tool for growth and development.

A customer is the King in today's marketing world. In any industry customers needs have to be adequately addressed in order to sell their products. Like any other industry in current scenario, Banking sector with the help of innovative products and services, achieve customer goodwill for mutual benefit. The beneficiaries of services look at the provider of services and products in varied ways starting from the usage to fulfilling ones comfort at maximum level.

Banks are among the main participants of the financial system in India. Since nationalisation of banks in 1969, the public sector banks owned by government have acquired a place of prominence and there has been tremendous progress. The need to become customer focused system has forced the slow moving public sector banks to adopt a fast track approach.

A study was conducted among various Public sector banks in Irinjalakuda regarding various innovative practices adopted by them. State Bank of India, State Bank of Travancore, Indian Bank, Bank of Baroda, Punjab National Bank, Syndicate Bank etc. were selected for the purpose of the study. Both primary data and secondary data were used for the purpose of the study. Primary data was collected usingquestionnaires and personal discussion with bank officials. A sample of 75 customers ofthese banks was selected for the purpose of study. Percentage analysis, Weighted average score and Hypothesis testing were the tools used for the study.

Data was presented with the help of pie diagram and bar diagram. From this study it was found that majority of customers were aware of all the services provided by bank.

The objectives of the study were:

- To study the various innovative practices adopted in the public sector banks
- To study the customers awareness regarding the innovative bank products
- To analyse the satisfaction attained through the use of innovative bank products
- To examine the problems faced by customers while using these innovative products.
- To analyse change in the number of cash withdrawals as a result of introduction of innovative services

From analysis of data, it is clear that the entire 75 customers were aware about ATM, Credit/Debit card, M-banking etc and out of 75 only 13 customers were not aware of Electronic fund transfer. The main reason behind availing these innovative services are on account of convenience factor. Reference from friends and relatives is the driving force behind the usage of these services by eighteen customers. Fourteen of the customers are influenced by advice of their Bankers. Two of the customers are influenced through various advertisements.

58 customers was availing the innovative services for more than 3 years. 12 customers surveyed were availing innovative services between 1 to 3 years and remaining 5 customers was availing the innovative services for less than one year. 52 out of 75 were availing these facilities when they are both in Irinjalakuda and outside. Only 5 customers were using only when they are out station.26 customers were using the money for more than one purpose and an equal number of them only used money to purchase consumer durables. Out of the selected sample 9 of them was using money to purchase dress materials, while 6 of them used the money to pay utility payments and remaining 8 customers utilized money to book travel tickets. 27 customers did not face any problems at all. Twelve customers have security concerns, while 11 customers each face technical and card related issues. 13 customers were unable to obtain statements.

Cash withdrawal pattern of customers before and after the introduction of various innovative practices by the banks was analysed to know whether there is considerable increase in the number of withdrawals as a result of introduction of these innovative practices. A sample of 15 middle aged customers of banks were selected and they were asked to give the number of withdrawals before and after the introduction of innovative services. Data was collected on yearly basis. Paired ‘t’ test was conducted to know the change. It was found that there has been considerable increase in the number of withdrawals after the introduction of the various innovative practices.

The major technological innovation in banking was ‘Automatic Teller machines’ over 25 years ago. This was the only customer facing technology that existed up until the early 1990’s.Following this came the phone banking, mobile banking, e-banking and so on.

Internet banking is the ability to use one’s personal computer/Mobile phones to communicate with one’s bank. Internet banking and online banking is an outgrowth of personal computer banking. PC banking enables customers to execute bank transactions from their personal computer via a modem through financial software of the bank. Internet banking has become a strategic necessity for most commercial bank. It is being used as distribution channel to build up customer contracts in a systematic way in order to inform, counsel and sell products and services.

As per the RBI estimate, the adult population with access to banking services stands 59% only. Internet banking channel with its convenience and cost effectiveness can play a very vital role in extending banking services to majority of population.Initially when Internet banking was launched it was just used as a means of providing information. However with the development of technology, Internet banking has transformed itself to perform multiple roles such as information role, service role and transaction role and so on.

Customer behaviour has changed drastically due to technological advancement and changes in life styles. The use of financial services today is characterised by individuality, mobility, independence of time, place and flexibility. Internet banking can transform into a one step solution for providing services related to banking in terms of information, handling varied service requests and effecting transactions. A wide variety of transactions can be done through this channel without the need for visiting Bank branches. Internet banking offers many benefits to banks and their customers.

Customers are the core focus of any organisation and thus, prime importance to the marketers. It is important for service providers to know the level of customer expectations so that they can meet and even exceed them to gain maximum customer satisfaction.Hence understanding customer expectations is a pre requisite for delivering superior service.The main purpose is to satisfy the needs of customers or create a need for the product to remain competitive in the market.

Banking system is the backbone of the economy and information technology in turn has become the backbone of banking activities.Technology which was playing a supportive role in banking has come to forefront with the ever increasing challenges and requirements.Automation ensures 24 X 7 services and makes the customers feel comfortable to undertake financial transactions with plastic cards and transact from home.There is an apprehension whether the technology will desert the customers from bank branches and push the banks to lose personal touch but the IT developments has only brought the customers closer,with the banks able to offer multiple products/services under Single Window concept and provide options to select the best.

In order to improve the overall infrastructural problems related to Internet banking in India and to provide it at a relatively affordable price,investment in human and infrastructure development by governments and support giving agencies needs to go hand in hand with business developments. Improvements are certainly needed in the Internet banking application and environments of use but besides this, bankers should know that the organisations will better manage consumer attitudes and problems to new internet service applications if they involve a process of adjustment and learning over time and not merely the adoption of a new technology.

The concept of banking has drastically changed,where technology is the most dominating factor which has helped the banks to have mixed knowledge with innovative products/services to win competitive market.Before this electronic era entire business were managed manually with little use of computers but now a days every transaction is done electronically through various e-channels like ATM,Credit/Debit cards etc.Delivery of banks service to a customer at his office or home by using electronic technology can be termed as e-banking.Thequality,range and price of these elements decide a banks competitive position in the industry.

The internet mechanism has changed the design and way of delivering the financial services and as a result banking industry has made continuous innovations-especially in the field of communications and information technology.Today the banking industry in India is offering banking and financial services over the internet.However banks in India are in the stage of development in respect to e-banking.Foreign,public and private banks are providing advanced e-banking facilities.

Today the banks have to adopt modern technology to reduce costs and enhance customer service quality,delivery and standardise core service offerings.Banks provide variety of financial services to common people.Even though e-banking offers a lot of benefits to people,it is facing challenges.The banks have to take proper measures to overcome these problems.Banks can attract more customers by enlarging the innovative services with necessary security measures.Banks unable to meet the performance and reliability expectations may lose customer confidence.There are systems such as Mobile transaction platform which allow quick and secure mobile enabling of various banking services.Recently in India there has been a phenomenal growth in the use of mobile banking applications with leading banks adopting Mobile transaction platform and the central bank publishing guidelines for mobile banking operations.

During 2010-11, banks were able to improve their profitability and asset quality. Stress test showed that banking sector remained reasonably resilient to liquidity and interest rate shocks. Yet, there were emerging concerns about banking sector stability related to disproportionate growth in credit to sectors such as real estate, infrastructure, NBFCs and retail segment, persistent asset-liability mismatches, higher provisioning requirement and reliance on short-term borrowings to fund asset growth

Retail banking is undergoing transformative change, driven by new regulations, technological advancements and changing consumer behaviour. This puts retail banks in an unenviable situation. They must invest in innovation, while creating new revenue opportunities and retaining customer loyalty in the face of increased (traditional and non-traditional) competition. All of this is occurring at time when interest margins and profits are under intense pressure.

For banks, this means prioritizing investments in areas such as regulatory compliance, core banking system modernization, channel optimization and data management. Although most banks face similar challenges, a single solution will not suit all organizations. Culturally, therefore, banks need to inculcate an organization-wide thought process that embraces innovative thinking. Creating a culture of innovation will be crucial to making these investments count.

Indian economic environment is witnessing path breaking reform measures. The financial sector, of which the banking industry is the largest player, has also been undergoing a metamorphic change. Today the banking industry is stronger and capable of withstanding the pressures of competition. While internationally accepted prudential norms have been adopted, with higher disclosures and transparency, Indian banking industry is gradually moving towards adopting the best practices in accounting, corporate governance and risk management. Interest rates have been deregulated, while the rigour of directed lending is being progressively reduced.

There has been considerable innovation and diversification in the business of major commercial banks. Some of them have engaged in the areas of consumer credit, credit cards, merchant banking, leasing, mutual funds etc. A few banks have already set up subsidiaries for merchant banking, leasing and mutual funds and many more are in the process of doing so. Some banks have commenced factoring business.

Mobile devices are creating opportunities for banks and other financial services providers to offer customers, innovative ways of performing traditional banking functions. Nowhere is this trend more evident than in the area of mobile payments. Initial mobile banking services were basic in nature checking balances, informing clients regarding their credit/debit transactions etc., but advancements in device and communication technologies and the creation of native applications for mobile devices are allowing these services to move up the value chain, overcoming geographical and technological boundaries.

Findings

- Out of 75 customers, 62 were aware of all services.13 customers not aware of EFT. Electronic fund transfer was not so common among public sector banks in Irinjalakuda
- Out of 75 customers, 41 resorted to use innovative services by considering their own opinion,14 took advice of bankers and 18 customers took expert advice and references from relatives and friends. Only 2 customers were influenced by advertisement.
- Out of 75 customers, 58 were availing facility for more than 3 years,5 were using for less than one year and 12 customers were using between 1 to 3 years.
- 49 customers using the facilities very frequently,18 were using monthly and 7 customers using them occasionally. Only 1 customer reported that he was using the facility only during festival time.
- 52 customers were availing the facilities both in station and out station.18 customers were using the facility in Irinjalakuda only.5 customers were availing the facility when they are away from Irinjalakuda.
- Regarding the usage of money, 8 customers were of the opinion that they spend the money withdrawn for booking tickets, 26 customers opined that they were utilising the amount for purchasing consumer durables.9 customers opined that they were utilising for purchasing dress materials,6 utilised for paying telephone bill, gas bill etc and 22 customers were using for more than one purpose.
- 12 customers were more concerned about safety, 11 customers opined that they face technical problem regarding machine,11 customers opined that the card gets blocked, 13 reported that more often they were not able to

obtain statement. Only 1 customer opined about availability of machine.27 customers were of the opinion that they don't have any problem regarding these innovative services

- As per hypothesis testing, it was found that there was considerable increase in the number of withdrawals as a result of introduction of these innovative practices in banks.

Recommendations

- Only few customers were availing these facilities while they are out of station. So more assurances are required from Banks to gain customer confidence to use these facilities while out of station. (Main hindrances are accounted to technical issues, card captures etc).
- Regarding EFT, the platform offered by the Banks should be user friendly, less complex, less time consuming and well secured.
- Customers have a misconcept regarding safety/security of these services. Attempts should be made to make them aware of the services and educate them about the safety and security features.

Conclusion

The ATM's enabled customers to do banking without visiting the banks. The RBI statistics shows that total number of debit and credit card users in India are 23 crores and 1.8 crores respectively.This is more than the total population of most of the countries of the world.The Innovative practices has made the customers life more easy and simple,created an improved channel of communication between banker and customer and made money readily available.But still customers especially in rural areas face many problems.

Internet has provided a paradigm shift in the working of banks.With the advent of Internet,it becomes easy for banks to share databases and maintain a centralised database at a low cost.Internet facilitated banks to create their own web pages and customers can access these web pages through web browsers sitting at home.

Bill Gates has once said“Banking is necessary but banks are not”.Of course due to information revolution there have been more changes in the banking sector in the last ten to fifteen years.Fifteen years ago nobody dared to say that Google would be one of the largest global brands and facebook users of today would be greater than the physical population of about half countries in the world.Thus technology plays an important role in different walks of life differently.The use of technology in the modern banking has been a key focus area of the Reserve Bank.

Furthermore, mobile has proved to be the cheapest means for processing banking transactions. Banks that encourage their customers to use this channel in increasing numbers have the unusual opportunity of simultaneously improving customer convenience and reducing cost.

It is a real challenge for India to bring the disadvantaged groups to the formal financial system of the country and to ensure financial independence.Access to a financially well economy requires creation of equal opportunities for all.For, this an economy must enable economically and socially excluded groups to integrate better with the economy and contribute them to the development of nation and protect themselves against economic risks.Government and banks play a vital role in the inclusive growth of an economy.

The banking industry plays a pivotal role in country’s economic development.The ongoing banking sector reforms with their thrust on transparency,efficiency and sustainability have forced the Indian banking sector to adopt suitable strategies with the focus on needs and satisfaction of customers.The banks have changed the objective of maximising their profit to develop long term relationship with customers.A customer expects certain values like product quality,reliability,superiorservices,state of art of technology,lowcost,a premium image etc.Inbank,a service sector customer service should not only be considered as a function but a way of life also.

Life style in India is undergoing a rapid change and the concept of Value of Money is rising.Changesin lifestyle has put a premium on the consumers time. The change in banking experience in India is encouraging.

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