1. INTRODUCTION

1.1. General Introduction to the Study

A healthy banking system is essential for any economy striving to achieve good growth and yet remain stable in an increasingly global business environment. The Indian banking system, with one of the largest banking networks in the world, has witnessed a series of reforms over the past few years like the deregulation of interest rates, dilution of the government stake in public sector banks (PSBs), and the increased participation of private sector banks. The growth of the retail financial services sector has been a key development on the market front. Indian banks (both public and private) have not only been keen to tap the domestic market but also to compete in the global market place. New foreign banks have been equally keen to gain a foothold in the Indian market. The electronic revolution in Indian banking sector is now more noticeable as banks are trying to keep abreast with Information and communication technology (ICT).

During the last two decades banking industry in worldwide has undergone phenomenal transformation. It has been partly driven and partly facilitated by the developments in technology. With the rapid spread of the internet domestic banking sectors need to be prepared for greater competition and challenges arising from liberalization and changes in consumers’ banking behavior and preferences. Indeed, the emergence of technology enabled banking services has prompted many banks to rethink their strategic plans especially their IT strategies, in order to stay competitive. This is because computers and internet is seen to be transforming the fundamental aspects of banking services; the environment in which banking services are delivered, the elements of banking business; the product and services delivered by banking institutions to retail consumers, and the systems and technologies used by banking institutions. While many studies in the past have covered e-banking, online banking/internet banking, telephone banking, ATM banking, credit/debit/charged/smart card MICR based banking there are few studies related to technology readiness index (propensity to adopt technology) and technology enabled banking services from consumers’ and the bankers’ perspective.

Electronic banking (e-banking) is an additional delivery channel for banking services. There are various definitions. This could be because electronic banking refers to several types of services through which a bank’s customers can request information and carry out most retail banking transactions via computer, television or mobile phone. Electronic banking can also be defined as a variety of the following platforms: internet banking (or online banking, telephone banking, TV-based banking, mobile phone banking, and PC banking (or offline banking). E-banking can be defined as the deployment of banking services and products over electronic and communication networks directly to customers (Singh and Malhotra, 2004). These electronic...
and communication networks include Automated Teller Machines (ATMs), direct dial-up connections, private and public networks, the Internet, televisions, mobile devices and telephones. Among these technologies, the increasing penetration of personal computers, relatively easier access to the Internet and particularly the wider diffusion of mobile phones has drawn the attention of most banks to e-banking. However, the continuing convergence of information, communications and media technologies are opening up new electronic channels (such as "pod-banking") for delivering banking services (Boateng R. and Molla A., Developing E-banking Capabilities in a Ghanaian Bank: Preliminary Lessons, Journal of Internet Banking and Commerce, August 2006, vol. 11, No.2).

Individual differences in expectations arising from awareness, knowledge, experiences, perceived ease of use and risk leads to adoption and rejection of newly introduced internet based online or ATM based technology enabled banking services by customers. This is also evidenced from their preference of e-delivery channels, attitude toward product or services, intention to buy, frequency of usage etc.

This study attempts to investigate technology usage from bank employees / managers/ bankers and retail consumers’ (end-users) perspective – an area which is not widely explored in India especially in Gujarat. Through technology additional delivery channels have been introduced by banks. In fact there is paucity of research concerning the technology and behavior of users and their readiness to adopt it. Therefore, this study also aims to fill the gap in literature in addition to providing the TRI of consumers and relate it to their preference and rate of adoption and/or rejection in the Surat and Navsari districts. Technology is now considered as a strategic weapon for differentiation of banking services and has brought grass root revolution, as can be seen in the way various banks operate, deliver, and compete against each other. For long term survival of banks in this era of e-commerce and m-commerce; IT and internet, “technology-service”, interface is crucial. It would also serve the purpose of banking executives, researchers and others interested in updating themselves with latest technological developments in modern banking practices.

1.1.1 Target customers (users – non users) of Technology enabled banking services

a) External customers or Consumers or End-users of various traditional and modern banking services having access of new delivery channels for availing services

b) Internal customers or Employees or managers of various banks using computerised and network technology for providing modern banking services
1.1.2 Key Characteristics of Technology enabled banking services

Our banks are small by global standards and, therefore, cannot afford to spend heavily on traditional channels of banking to reach the vast masses. MNC and some private sector banks have been providing easy access to multiple channels like electronic banking, internet banking, and remote mobile banking, in addition to branch banking. Therefore, Indian banks have to transform themselves from being entirely branch based, staid institutions to highly responsive, technology driven, multi channel, multi product, modern banking institutions offering a full range of services. Technology brings about changes in mobility, connectivity, dropping costs and helps in inclusive banking. It is bankers’ responsibility to make sure that they are able to provide the technology that their customers seek, because technology treats every customer as equal. Technology has enabled banks to transform customer experience, expand channels, has innovated non-cash payment mechanism and become more operationally efficient. Banks can use the power of mobile, biometrics, RFID, P2P micropayments, digital cash and Voice recognition for offering highly targeted and customized experience to unbanked segments. The UID project is likely to eliminate the need for individual KYC costs for banks. This unique number when linked to the banking system can facilitate financial inclusion in a meaningful way. Banks, telecom and technology companies could work together to make electronic money more popular in micro segment.

The tremendous development in technology and the aggressive blend of information technology have brought about a phenomenal shift in banking operations the world over. For the banks, technology has not only emerged as a strategic resource for achieving higher efficiency, control of operations, productivity and profitability, but a means for survival. From customers’ perspective, it is the realization of their anywhere, anytime, anyway banking dream (Balwinder et al., 2004). Consequently, the banks have been compelled to embrace technology, recognizing that this will enable them to meet the increasing customer expectation, and also equip them to gain a firm stand in the highly competitive banking environment.

Technology has been one of the most important factors for the development of mankind. Information and communication technology is the major advent in the field of technology which is used for access, process, storage and dissemination of information electronically. Banking industry is fast growing with the use of technology in the form of ATMs, on-line banking, Telephone banking, Mobile banking etc., plastic card is one of the banking products that cater to the needs of retail segment has seen its number grow in geometric progression in recent years. Five alternate channels for transactions –ATM, Internet, mobile, call centre and POS have all reached critical mass in the Indian market and are poised for rapid development in terms of depth of penetration and breadth and quality of services. In past few years particularly, the number of ATM transactions has increased tremendously and there is explosive growth in the usage of new channels. This trend will only get amplified in the next decade of
Indian banking in the same way as rapid growth in retail lending grew in the last decade. Of course, the costs of investment in technology will go up too and banks may have to find ways to build these charges into their services. Banks will have to move from KYC (Know your customer) to GYC (grow your customer).

The environment and the banking industry can both benefit if more bank customers start to use online banking services as it involves less paperwork and less driving to branch offices by bank customers, which will have positive impact on environment too. Interestingly, online banking can also increase efficiency and profitability of a bank as it leads to lower costs.

1.1.3 Recent Studies in the Area
Computer technology has eased human life. Every day new dimensions of its utility are emerging. E-Banking; internet banking; technology enabled banking services are some of the gifts to human beings by computer technology. Use of computers have automated banking process and thus has given birth to virtual Banking. Thus, Banking with the help of technology is a fast spreading service that allows customers to use computer to access account-specific information and possibly conduct transactions from a remote location - such as at home or at the workplace. Use of laptop and mobile internet connections has made everything available at your finger tip. The publicity of technology enabled banking has replaced to word of keyboards and mouse clicks replaced word of mouth in the promotion mix element.

The advancement of information technology means conventional face-to-face services are being replaced with innovative self-service technology (SST), as in Internet banking (Hensmans et al., 2001; Waite, 2006), which sets the standards for future SSTs such as telephone banking and ATMs. In the banking industry, entry barriers have been removed as a result of deregulation and growing information and communication technology, leading most financial institutions to move from the traditional approach of brick-and-mortar into click-and-mortar. This transformation saves the institutions operating expenses, as the costs to the bank of Internet banking are estimated at only 25 to 30 percent of the cost of traditional retail banking (Chau and Lai, 2003; Hensmans et al., 2001).

Technology Readiness Index and Taxonomy of customers: Several studies in the past have looked at attitudes and beliefs about technology among individuals (eg. Davis et al. 1989; Igbaria and Parasuraman, 1989; Dabholkar, 1994 etc.). Most of these studies acknowledge the differences among individuals in their predisposition towards accepting technology. This variation is endeavoured to be captured through the Technology Readiness Index (TRI). Parasuraman (2000, p.308) defines TRI as “People’s propensity to embrace and use new technologies for accomplishing goals in home life and at work”. Technology readiness index
measure an individual’s predisposition towards technology across four dimensions: (i) optimism (ii) innovativeness (iii) discomfort and (iv) insecurity. TRI is basically “a state of mind resulting from mental enablers and inhibitors that collectively determine a person’s predisposition to use new technologies” (Liljander et al. 2006, p.178). On the basis of the customer’s level of technology readiness, they described five types of customers: explorers, pioneers, sceptics, paranoids and laggards, with the explorers being the most technologically ready and the laggards being the least technologically ready.

In the United States, during the period 1999-2000, a nationwide telephone survey was conducted on 1,001 American adults. The survey reported that the mean score on a 5-point scale for each of the four TR dimensions were 3.8 for optimism, 3.2 for innovativeness, 3.5 for discomfort and 4.0 for insecurity perceptions (NTRS, 2000; Parasuraman, 2000). The findings revealed that there were no significant differences in optimism and insecurity perceptions between genders; both male and female adults were positive about technology, and were concerned by the insecurity of Internet technology.

In addition, the results of the NTRS (2000) found that American males appeared to be more innovative than the females, and American females experienced greater discomfort with new technology as compared to the males. The survey also found that older people tend to be less optimistic and less innovative about new technology as compared to younger participants. At the same time, older participants perceived more discomfort with new technology as compared to the younger ones. However, the views pertaining to insecurity varied little across age groups. (Readiness for banking technologies in developing countries, Berndt A.D., Saunders S.G. and Petzer D.J., (2005))

For customers, the benefits include an increased perception of control, increased speed in obtaining services, improved access to services and financial savings incurred by using these services; while for banks, the benefits include reduced labor costs and/or the ability to relocate employees to more productive activities. Engaging technologies may also improve the organisations’ reputation amongst customers, as customers expect organisations to embrace new technologies and provide a competitive advantage (Meuter, Bitner, Ostrom and Brown 2005).

The traditional function of banking is limited to acceptance of Deposits and providing the credit in the market. Today’s banking is known as Innovative banking. It helps to reduce transaction and delivery costs simultaneously enhance efficiency, effectiveness and customer satisfaction towards banking services. The coming together of information technology, transaction, communication and (hedonic concept) entertainment (ITCE) – in totality it is called technology
enabled banking service (TEBS); has given rise to new innovations in the product design and their delivery in the banking and finance industry.

Significant differences exist among banks in terms of their e-banking capabilities. These differences can take two models of technology enabled banking. Two models of branchless banking –bank-based and nonbank-based can be distinguished. Both make use of retail agents such as merchants, supermarkets or post offices to deliver financial services outside traditional bank branches.

Modern Banking industry’s business model has been using the new modes of money transaction and for exchanging its’ information, new communication channels like mobile alerts for withdrawal or deposits, so that transmission of workflow of physical channels could be headed for using technical channels. It also helps in reaching to consumers of the untapped market segments. Service industries possess enormously different characteristics, thus the related benefits of what the consumer wants may vary according to the different types of services (Lovelock, 1983). Some services provide benefits of utilitarian value, while others may provide hedonic value.

Utilitarian services refer to those that accomplish functional tasks and focus on the tangible performance characteristics, such as car repair, dry cleaning, and banking. When evaluating utilitarian services, customers are more practical and concerned with the problems solving. They are more concerned with the outcomes than the processes when receiving utilitarian services. For instance: for doing regular significant money transaction etc.

Hedonic services relate to the multi-sensory, fantasy, and emotional aspects of the consumption experience, such as hairstyling, arts, and dining at restaurants (Hirshman and Holbrook 1982). In the hedonic services, customers are more concerned with the service-delivery and the evoked multi-sensory pleasure and enjoyment, captured with their experiential and affective benefits. They are simultaneously concerned with the consumption processes and the outcomes when receiving hedonic services. For instance: Using ATM card or internet or mobile banking for micro transactions. It could offer mental pleasure for receiving or making instant payments on off-site bank branch locations.

Hernando and Nieto (2005) examined the performance of multichannel banks in Spain between 1994 and 2002, had found that higher profitability for multichannel banks through increased fee based income and brokerage fee, eventual reduction in staffing levels and concluded that the internet channel was a complement to physical banking channels.
Technology adoption is a micro-process that takes place among consumers, resulting in the decision to reject products, services and ideas (Schiffman, Bednall, O’Cass, Paladino, Ward and Kanuk 2008: 498). Numerous studies have examined the differences in the adoption of new technologies between individual customers (Tsikriktsis 2004; Agarwal and Prasad 1999; Harrison and Rainer 1992; Gutek and Bikson 1985). In these studies the key demographic differences between the customers were based on age, gender and education. Results from several studies have found that there is a negative relationship between age and the acceptance of new technology or the skills required to use the technology (Tsikriktsis 2004; Harrison and Rainer 1992).

1.1.4 Internal Marketing and internal customer
Marketing experts have recently focused more attention on internal market, particularly in the second half of the 1990s, and there is a growing awareness of the need to balance internal and external marketing as a precondition of successful performance (Groenroos, 1990., Janicic, 1990., McDonald and Payne, 1997., Piercy and Morgan, 1991., Došen, Prebežac, 2000). Berry defined internal marketing as follows: it counts employees as internal customers and work as a product, a product that should satisfy the needs and requirements of customers to achieve organizations to its definitions in this area ( Preston and Steel, 2002: 295, Berry, 1981: 25).

In the research article, Role of Internal Marketing in Job Satisfaction of Employees in State Bank of India, Kameswari A. V. and Rajyalakshmi N.(2012), said that “The deregulation of services in banking has led to a stiff and intensified competition among various bankers’ businesses. Increased competition, expectations and changing technological and business propositions made to think of a marketing approach for delivering services to the Gen Y customers. Therefore, operating in such a shifting environment requires the right type of personnel to survive”. Hence, the concept of internal marketing and internal customer behavior assumes importance.

In the research paper, Employee attitude towards customers and customer care challenges in banks, Babu P. George B.P. and Hegde P.G. have highlighted the paradigmatic shifts being experienced by the traditional, government supported banking establishments, especially those in the erstwhile socialist and mixed economies, in the newly embraced context of liberalization privatization- globalization. Profitability as an important criterion for existence under the stiff competition offered by the new generation private sector banks is driving radical reforms in the public sector banking scenario. Financial services offered by banks and other institutions are not only intangible and fairly complex, but many consumers can also perceive them as high-risk purchases. Immediate changes are evident in better ambience, full-fledged computerization, spread of ATMs and the like. Demonstrating linkages among employee behavior, customer
behavior, and bottom line financial results within an enterprise provides critical information (Rucci et al., 1998) that justifies corporate investment in people and appropriate socio-technical systems.

1.2 Research problem
What are the various innovative delivery channels, product and processes introduced by banks due to the revolution brought about by technology specially ITC, and what is the rate of adoption and readiness index of the customers (after the introduction and implementation of technology enabled banking services)?

Are internal customers in private sector banks more (or less) technologically ready than those in public sector banks? Are external customers who currently have access to technologies more technologically ready to adopt e-banking services? Are external customers who currently use technological banking services more technologically ready to adopt e-banking services? Are external customers who have a higher perceived desirability of using technological services more technologically ready to adopt e-banking services?

1.2.1 Study objectives
- To study the technology enabled banking products and services
- To understand the consumer behaviour for technology enabled banking services in cities Navsari and Surat.
- To measure the technological readiness of the customers of banking services
- To find bank employees’ readiness towards technology enabled banking services

1.2.2 Scope of the study
In this research work, it would be empirically examined the impact of key factors such as Infrastructure (ICT infrastructure), Intellectual Capital and Innovation of products and services on the customer behavior towards the banks in the regions like Surat and Navsari districts.

In this study, the technology enabled products and services included are Internet banking and ATM banking services. These e-banking services are accessed to provide Information, communication and transactions services to end-users.

Both external and internal customers form part of the study. All managerial cadre people as considered by different banks and officer level employees have been considered.

The banks that form part of the study are nationalized banks, Private sector banks, MNC banks, foreign banks and Co-operative banks.
1.2.3 Study hypothesis

For consumers

\( H_01 \): Customers who currently have access to technology-based products and services are more technologically ready than those customers who currently have no access to technology-based products and services.

\( H_02 \): Customers who currently use technology-based banking services are more technologically ready than those customers who do not currently use technology-based products and services.

\( H_03 \): Customers who have a higher perceived desirability for various technology based services are more technologically ready than those customers who have a lower perceived desirability for various technology-based services.

\( H_04 \): The extent of customers’ web experience will positively influence e-banking adoption.

\( H_05 \): Customers’ intensity of internet use will positively influence e-banking adoption.

\( H_06 \): Customers’ comfort with internet technology will positively influence e-banking adoption.

\( H_07 \): Customers’ “utilitarian” internet use will be positively related to e-banking adoption.

\( H_08 \): Customers’ “hedonistic” internet use will be negatively related to e-banking adoption.

\( H_09 \): Personal characteristics will influence e-banking adoption.

\( H_{09a} \): Household income levels will be positively related to e-banking adoption.

\( H_{09b} \): Education levels will be positively related to e-banking adoption.

\( H_{09c} \): Age levels will be negatively related to e-banking adoption.

For internal customer / Bankers: employee behavior

\( H_{01} \): There is no significant difference between level of education and bankers’ perception of benefits of e-banking.

\( H_{02} \): There is no significant difference between level of education and bankers’ perception of risks of e-banking.

\( H_{03} \): There is no significant difference between years of services and bankers’ perception of benefits of e-banking.

\( H_{04} \): There is no significant difference between years of services and bankers’ perception of risks of e-banking.
1.3 Overview of Research methodology
Various secondary data like research studies conducted in foreign countries had been read to generate some ideas and develop information about the new products and services, new delivery channels, the process automation in the banks and the problems faced by internal users and external users/ consumers of technology when availing e-banking services . In the initial phase of the study exploratory design was adopted because of the nature of problem and to generate ideas on real life problems faced by technology enabled service providers and e-service users. In this phase, in-depth interviews of the bankers was arranged to have knowledge of the subject. Secondly the interviews of consumers (external customers / end-users) for their awareness and knowledge about ATM banking, Internet banking, mobile banking, and branch banking were conducted. In Depth interview for bank employees were conducted. Three focus group interviews were conducted for consumers – End users.

The later phase of the study, after getting insights from the phase-I, was descriptive in nature. Survey method was adopted and an instrument (questionnaire) was developed and used. The responses were collected from bank consumers of retail services during the period 2011 and 2012. Data were gathered from bank consumers (users and non-users) regarding their views on technology enabled banking services like internet and ATM card based banking with the help of a structured. Data were also gathered from various bank’s employees (as internal customer). Drop-off method, Mail survey and personal interview method were adopted and the instrument used was close ended questionnaire.

Phase-I

<table>
<thead>
<tr>
<th>Sample Unit</th>
<th>Research method</th>
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<tbody>
<tr>
<td>Top level Employees of various banks</td>
<td>In-depth Interviews</td>
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<td>i.e. branch managers, Managers and</td>
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<td>bank executives</td>
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<td>End- Users / consumers</td>
<td>Three Focus Groups</td>
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### Phase-II

<table>
<thead>
<tr>
<th>Sample Unit</th>
<th>Sample Size</th>
<th>Sampling Procedure</th>
<th>Research method</th>
<th>Instrument used for data collection</th>
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</thead>
<tbody>
<tr>
<td>End-Users/banking services’ consumers</td>
<td>450</td>
<td>Non probabilistic</td>
<td>Survey</td>
<td>Structured questionnaire</td>
</tr>
<tr>
<td>Employees – top level and middle level /line managers and functional managers (front line employees and back office who are dealing with technology in various banks)</td>
<td>100</td>
<td>Non-probabilistic</td>
<td>Survey</td>
<td>Structured questionnaire</td>
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### 1.4. Tools of analysis

Descriptive statistical analysis such as frequency and percentage was carried out. The inferential statistics one way ANOVA, chi square test, F-test, have been used. Reliability statistics, The Kaiser-Meyer-Olkin (KMO), Bartlett’s test, and factor analysis were also applied wherever necessary using SPSS.

### 1.5 Limitations of the study

- Geographic areas covered are only two i.e. Navsari and Surat cities only.
- Generalization problem maybe there due to the sampling procedure.
- Time period of survey is limited.
- Non-Sampling error may be present due to limited sample size.

### 1.6 Organization of the thesis/Chapter scheme

The thesis is divided into seven chapters.

The **first chapter** begins by highlighting to the reader the evolution in definitions of e-banking over a period of time and significance of introducing the technology in banking by describing structural changes in the retail banking system. In particular the chapter discusses the birth of e-banking technology worldwide and in India, products and services of technology enabled banking services, Role of technology in Indian banking system, the proliferation of modern delivery channels like Automated teller machines ATMs telephone, mobile and Internet in India, recent innovations in marketing of financial (banking) services i.e. product and process innovation, and issues of e-banking like security and privacy. The chapter sets the platform for the e-banking services in retail banking done in terms of seven P’s of service marketing. Once the arena has been located, the next section discusses further the potential of readiness to adopt technology and perception of employee and awareness,
knowledge, preference and actual customers’ behavior i.e. internal as well as external users of e-banking. The next sections discuss factors affecting and determining choice of e-banking and the practical issues that policy makers have had to deal with in trying to provide technology enabled banking services to the end-users. The chapter also discusses the earlier process of introducing new products/services and delivery channels to speed up the process of delivering services, to reach new market segments, to compete with new entrants in banking sector and reduce the operation costs and how branch-led and branchless business model of banking lead the race in contemporary competitive market.

Chapter two is mainly a theoretical chapter dealing with the review of literature covering aspects like technology and banking practices, e-products available in the banking sector, consumers perception regarding e-banking services, technology readiness index, internal marketing.

Chapter three discusses the evolution of products, services, delivery channels of banking services, the general methodologies of measuring the behavior of consumers as they have been previously applied by earlier researchers. Subsequently the chapter explains the theories, models and methodologies followed for various objectives of the present research.

Chapter four chapter begins with introduction of banking and introduction of technology in banking services by the Indian banking sector. Further this chapter highlights some provisions of IT act 2002, different phases and committees that have gone into the issue of technology enabled services and reformulation of strategies for the various banks governed by RBI. An attempt was made by using secondary data on presenting improvements in banking services via technology infusion and diffusion of innovation. In the last section of this chapter the views of bankers officials of the region were presented on issues related to technology introduction for delivering and availing enhanced banking services.

Chapter five explains different consumer behavior models (TRA, TPB, TAM etc.) in detail with their operating methodology, and pros and cons of each. It includes views of experts regarding various models and the model which best suits the Indian context. This chapter is based on quantitative analysis of data gathered on TRI, factors affecting e-banking adoption or rejection, frequency and continuum of usage, place of usage, lifestyle and demographic variables for measurement of factors affecting consumer behavior. The quantitative analysis section begins with a short introduction to the problem; then the methodology used for the analysis is discussed in detail; followed by the results and discussion. At the end of all the quantitative analysis there are some general concluding remarks to the section. The segmentation profile
was generated to understand digital divide concept in technology segmentation of the market using SPSS.

Chapter six studies employees’ (internal customers’) behavior towards technology and their perception towards benefits and risks from e-banking. The chapter begins by highlighting the reasons for introduction of various types of technology in banks and banking services, the concept and definition of services triangle to development of the service pyramid. It also discusses interactions of technology with organization, employees and customers. This chapter is also based on quantitative analysis of data gathered on TRI, perceived benefits and risk factors as well as profile of “employee characteristics” for understanding employees’ views. The quantitative analysis section begins with a short introduction to the problem; then the methodology used for the analysis is discussed in detail; followed by the results and discussion. At the end of all the quantitative analysis there are some general concluding remarks to the section.

Chapter seven is the concluding chapter that also incorporates key strategic managerial implications and indicates areas for future research.

Selected Bibliography