Introduction and Statement of Problem

1.1 Introduction

Money is considered as the life line of an economy. It not only helps consumers in facilitating their transactions of goods and services but it also helps producers in meeting with their requirement of hiring the factors of productions to produce goods and services in the economy. Banks are the only institutions/organizations which help both the consumers as well as producers in facilitating their activities. They provide the debit and credit facilities to their customers (consumers and producers). For sound and efficient functioning of the economy it is important that these services of debit and credit must be provided to customers at the lowest possible cost in the most integrated manner to maintain pace with the ever changing economic system.

To make their services better (which are the main source of earning for banks) and retain themselves as profit making units, banks have always been starving to introduce new technologies. Firstly it was the year 1846 when telecommunication was introduced into bank markets that reduced the stock price differential between New York and regional stock markets. The introduction of the trans-Atlantic cable equally enabled greater integration of securities trading in New York and London in 1866. This period is known as an early adoption period of IT in the financial sector. During this period, banks’ customers entered in the banking system directly through retail banking branches or indirectly through agency representative (such as saving banks, mortgage specialists and even retail outlets). Telephone conversations between bank managers and customers have been recorded in use as early as the 1890s, but, in spite of this, service remained largely unaffected by technology with unchanged front office relationship and controlled locally through asynchronous analogue systems such as paper-based records and pass-book control. During the late 1930s, the first tabulating machine was purchased to address the growing volume of transactions. This trend was reinforced through the purchase of additional adding, listing and punch-hole, and accounting machines that supported the growing network of branches and agents. But these machines were not fully exploited until the late 1940s and early 1950s (Batiz-lazo and Wood, 2001).
In brief, in this period banks absorbed the new technology on back of a growing market for retail bank services, which expanded as middle income individuals become a growing proportion of the population.

The second wave of IT innovation in retail finance begins in the late 1950s and lasted up to the late 1960s. Banks introduced computers to keep up with growth in business volume. The introduction of computer power relied on US-based suppliers of accounting machines such as IBM, Xerox and Burroughs (later Univac and Unisys). This period is known as specific application period. In this phase computer manufacturers responded quickly to the demand for hardware but failed to make much concession to users’ software requirements. The lack of ready-made software products forced user organizations to devise their own solutions to this problem until high-level programming languages emerged from joint collaboration of users and computer manufacturers. By 1965, most of the banks in the US and UK had been introduced to electronic data processing and many of them had seen the arrival of their first computer installation. A second key development in the UK during the specific application period was the establishment of the National Giro Centre (later Girobank) in 1968. Girobank introduced another important innovation in the British money transmission system. Girobank was the first full computer-centered financial intermediary. During this period the first IT applications in the bank-client transactions were introduced. Enhanced computer power allowed banks to process the growing volume of paper-based transactions in central locations with the added effect of modified labour costs. This period also witnessed progress and establishment of clearing bank in 1968 (Batiz-lazo and Wood, 2001).

The third wave of IT innovations in retail finance emerged hand in hand with advances in telecommunications. During the emergence period, banks became one of the world's dominant customers for computer-based applications, far exceeding other sectors such as capital goods manufacturers or transportation. Between 1968 and 1980 banks emerged as major customers of software and hardware as they involved in applications which delivered significant cost reductions as well as increased business volume and variety. The main difference between this and the specific application period was that the impact of computers was felt throughout the organization rather than in specific departments (Batiz-lazo and Wood, 2001).
One of the most successful application that emerged during this period took place in 1967 when Barclays Bank (UK) introduced the first Automated Teller Machine (ATM) in the world, while IBM introduced the magnetic stripe plastic cards in 1969. Together these innovations marked the birth of electronic banking. During the emergence period, the introduction of Management Information Systems (MIS) also took place. These systems initially aimed to use the computational power of transaction-processing capabilities to provide regular reports and analyses of business activity. In this way MIS offered managers of banks the possibility to increase the scope for monitoring, controlling and planning of operational procedures (Batiz-lazo and Wood, 2001).

In brief, during the emergence period technological change spread too many internal aspects of the banking organization and permeated bank-client relationships. These changes started to modify the bank-client how, when and where customers could enter the banking system. But banks had yet to be considered multi-delivery channel organizations in their service offering or in their ability to direct all their information to any point of customer contact. It is during this period that the convergence of telecommunications and computer power resulted in true IT applications as the emphasis on technological innovations shifted from data processing to communication. At the same time, cost effective supply of financial services rather than customer value creation continued to predominate the design of banks' internal organization and strategy development.

The diffusion period of the information revolution saw the deployment, within organized markets, of new and powerful applications developed to handle the security required by high-volume payments in banks. IT-related change became critical to support unprecedented increase in the speed, quantity and quality of information about cross-border transactions in organized markets. During this period, the information revolution in commercial banking saw the spread of IT to all aspects of banks' internal organization and market relationships. During this period, consumer-oriented innovations were widespread as information technology provided support to all points of contact between customers and bank. The second effect of technical innovations on banks' approach to business during the diffusion period pertained to distribution capabilities. The branch network reduced its importance as a point-of-sale
for financial services. The integration of services around digital networks (ISDN) and greater use of electronic data interchange (EDI) protocols were at the heart of new distribution channels such as electronic fund at point of sale terminals (EFTPOS), telephone transfer systems and smart cards (Batiz-lazo and Wood, 2001).

In summary, during the diffusion period, IT applications resulted in customers acquiring some options when engaging financial transactions with their main bank and also competing banks. Developments in IT were instrumental in lowering entry barriers to bank markets by providing scale benefits for the smaller providers. Moreover, during this period, digitization and standardization of IT applications helped to explain the development of markets for second and third party processing.

In aggregate it may be said that there are four distinct phases of evolution and introduction of technology in the banking sector:

1. **First phase- Back Office Automation:** The first application of computers in the banking industry was use of mainframe computers. In this phase information and documents which produced in paper form, banks packed them and sent to the center for processing at night. Here, the main application of computer was limited to registration and converting of paper documents into computer files. Back office automation technology in the 1960s made it possible to remove cards and account books from branches and daily report of accounts’ transactions of mainframe computers for up to date process at the end of the day (Abasinejad and Mehrnoush, 2006).

   Back office automation progress in 1970s caused operation report of branches daily through recording their operations on magnetic media. Information processing and updating the accounts were still done in the central computer rooms. In this phase, automation only impacted the accuracy and speed in creating the balance of the accounts and removal of account cards and notebooks from banks. This phase didn’t have a major impact on welfare of customers and banks competitions (Charooseh, 2008).

2. **Second Phase- Front Office Automation:** In this phase the focus shifted from the “back office” to “front office”. This period begins when the
employee in the presence of branch’s customers started to record and follow banking operations electronically. Instantaneous transfer of data provided through front office terminals was started from the late 1970s. These terminals were similar to today’s personal computers and were connected to mainframe computers via telecommunication lines. Employees in this period had access to customer’s accounts at any time. In this period, banks were forced to have exclusive telecommunication networks for their front office automation. But these networks belonged to state-owned enterprises and their use not only limited to technical point, but was also very costly (Abasinejad and Mehrnoush, 2006). During this period of 1980s, speed of access to the customers’ accounts and information transfer increased and customer services improved but still, there was a tendency to use paper documents and also the number of banks employees didn’t decrease because there was still need for persons to be accountable and meet banks’ client and also there were customers who were not familiar with this new technology. Software were un-integrated in this period. Still client was required to visit branches for various products of banks like different kinds of accounts, loans, insurance services, and funds transfer (Charooseh, 2008).

3. **Third Phase- to Connect Customers to Their Accounts:** In this period which began in the mid-1980s the service of electronically access of accounts was started to be provided to customers. Now, customers could have access to their accounts and were able to receive and play operation and transfer funds electronically through phone, Automated Teller Machines (ATMs) , magnetic or smart cards, and personal computer (Charooseh, 2008). In this phase, banks transaction gradually became to some extent empty of customers’ lines and further some employees which worked in front counters shifted to other sectors such as marketing etc. In this period, banks started to use satellite and wireless services and customers felt receiving better service because they were able to see the electronic banking process. But, paper money was still going on in this period and deposit and withdraws of money were main work pressure on banks yet and only half of banking operations became electronic (Abasinejad and Mehrnoush, 2006).
4. Fourth Phase- Systems Integration and Connecting Customers to all Banking operations: The fourth period begins when all the results from the earlier periods totally transferred to electronic operation system and the customer can obtain accurately and regularly the information which they need. In prior periods most of the banks without a clear organization and plan only created automated islands. So the entrance to fourth stage needs beside a reliable and advanced telecommunication a secure communication. In the fourth period emphasis is on:

- Standardizing available software and hardware to achieve a computer aggregated system.
- Establishing integrated systems, regardless of previous islands.
- Creating new systems that are based on not customer’s accounts but for customers. (Customer-oriented system)

The most important distinction of this period is that banks are planning to release employees who are working in coordinator sectors of island systems and also in this phase customers can have access to different e-services without meeting staffs of the bank, simply by using an ATM, mobile or personal computers at home or office through the electronic system. During this period, the real savings in manpower will be possible and money completely will be electronic type and customer can apply for loan, insurance, and other services without visiting of banks’ branches (Abasinejad and Mehrnoush, 2006). All these changes in banking system transformed the face of banks from traditional brick and mortar banking to automated electronic banking. This electronic banking is popularly known as e-banking.

The evolution and recent developments in information and communication technology has changed the way organizations operate and do business especially in the banking industry. Electronic banking has in particular brought a complete paradigm shift on the bank's performance and on service delivery in the banking industry (Abubakar and Rasmaini, 2012). The introduction of electronic banking has changed manual and traditional forms of doing business and is being replaced by the
sophisticated technology that is based on automation and interconnection of computers and other electronic devices. For instance, ledger books, paper invoice, printed materials and business trips are being replaced with online billing and payments, elaborate website with product information and real-time teleconferencing across continents and time zones (Ojokuku and Sajuyigbe, 2012).

The term “e-banking” has been used in the literature in many different ways. Electronic banking discharges several types of services through which bank customers can request information and carry out most retail banking services via Internet, PC, television or mobile phone. Generally speaking, e-banking means providing banking products and services directly to customers through electronic and interactive communication channel.

However, more comprehensive and common definition of e-banking comes from the Basel Committee Report on banking supervision (1998). The Basel Committee defines e-banking as “The provision of retail and small value banking products and services through electronic channel, such products and services can include deposit taking, lending, account management, the provision of financial advice, electronic bill payment products and services such as electronic money” (Basel Committee, 1998).

The introduction of e-banking in banking business is one of the most important innovations of the 20th century. It provides a large number of opportunities to the bank itself as well as the customers associated with bank that supplies e-banking services. The first benefit for the banks offering e-banking services is better branding and better responsiveness to the market. Those banks that would offer such services would be perceived as leaders in technology implementation. Therefore, they would enjoy a better brand image. The other benefits are possible to measure in monetary terms. The main goal of every company is to maximize profits for its owners and banks are not any exception. Automated e-banking services offer a perfect opportunity for maximizing profits. According to different surveys e-banking services are cost saving delivery channels for banks. Rough estimates assume teller cost at Re.1 per transaction, ATM transaction cost at 45 paise, phone banking at 35 paise, debit cards at 20 paise and Internet banking at 10 paise per transaction (Vasu, 2005).
Thereby, e-banking provides a large number of opportunities to banks. Some of them may be outlined as:

- Lower operational costs of banks (through an automated banking process, accelerated credit decision and lowered the minimum loan size to be profitable).
- Potentially lower margins (in form of lower cost of entry, expanded financing reach and increased transparency).
- Expanded reach through self-service (that lowers transaction costs, makes some corporate services economically feasible for society and makes access to accounts and loan information possible anytime).

There are also other benefits of e-banking like organizational efficiency, easier expansion, cost reduction, attracting high value of customer and e-marketing.

The main benefit from the customer’s point of view is a significant saving of time by the automation of e-banking services, processing, and the introduction of an easy maintenance tools for managing customer’s money. The main advantages of e-banking for customers are as follows:

- Reduced cost in accessing and using the bank services
- Increased comfort and time saving- Transactions can be made 24 hours a day, without requiring the physical interaction with banks
- Quick and continuous access to information
- Better cash management- e-banking facilities speed up cash cycle and increases of business processes as a large variety of cash management instruments are available on the internet sites of banks. Customers can download their history of different accounts and decide before any other new transactions. This will lead to better funds management.

E-banking also provides a large number of opportunities to the society. E-banking business makes access to finance from banks attractive. Society has benefited from the development of e-finance and gradually stepped out of the informal sector. In particular, e-finance offers the following attractive benefits for society (Salehi and Alipour, 2010):

- Ease of use
- Lower costs of financing
- Convenience
- Time saving
- Operational efficiency
- Transparency in transaction
- Globalization of trade
- Elimination of risk of carrying heavy cash.

Thereby, e-banking as a new entrant has an effective impact on the whole banking industry and society. E-banking makes it easier for customers to compare banks’ services and products, can increase competition among banks, and allows banks to penetrate new markets and thus expand their geographical reach. Some even see electronic banking as an opportunity for countries with underdeveloped financial systems to leapfrog developmental stages. Customers in such countries can access services more easily from banks abroad and through wireless communication system (Nsouli and Schaechter, 2002).

There are always two sides to a coin. Similarly e-banking too has a “bane” side to it. Banks offer e-banking services to expand market share or as a cost saving strategy to reduce paperwork and personnel. The Internet also provides banks with considerable opportunity to expand their customer reach beyond existing boundaries. Therefore electronic delivery channels operate in an uncertain legal and regulatory environment so that all these factors present new challenges for banks in managing security, integrity, and availability of services.

It is possible to categorize e-banking challenges in different groups such as: business, psychological, problem of security, operational and different kinds of risks associate with electronic delivery and micro economical challenges.

**Business challenges:** Competition is the foundation of efficiency. Its ultimate objective is to secure the interests of the consumers by providing quality products and services at a reduced cost. Banks will face different types of challenges with the introduction of new e-banking services to retain and attract new customers and they are forced to adopt new technologies to preserve their market shares and work to increase their profit. Business challenges can happen when banks cannot meet customers’ expectations on services and facilities offered by banks. When banks are
not able to provide e-banking services at a good level to their customers and because of competition from other players in the market they will lose their market share and it will affect their profitability. Competition from other players in the banking industry will treat banks when they are not well equipped with the latest e-service channels (Arora et al., 2007).

Psychological challenges: Psychological challenges can happen when customers are not familiar with electronic environment and afraid of it. Psychological challenges will negatively affect acceptance and development of e-banking. These challenges can be; Conservation and the hesitation of customers and frustration due to lack of technical knowledge.

Security challenges: Need for secure transactions are critical to the success of e-banking. The lower the perception of risk in using e-banking the more likely an individual would be prepared to use it. The rapid growth of a networked information system creates threats to the security of e-banking. Security challenges work as the most important obstacles for development of e-banking. Loss of data due to technological defaults, lack of security measures and lack of strong trust environment are some challenges which customer face.

Operational challenges: Growth of e-banking can be hindered by poor network infrastructures, low level of computer literacy, limited human resources and language and cultural barriers. E-banking needs some basic requirements which telecommunication and hardware equipments are among the primary ones. Diffusion of e-banking in a country cannot happen when there is a lack of trained human resources and illiteracy rate be high. No banking system can operate effectively without a dependable management mechanism. If customers experience that the e-services provided by banks are not secure and economical it will create some problems in case of acceptance of e-banking services.

Macro Economical Challenges: As the advent of e-banking quickly changes the financial landscape and increases the potential for quick cross-border capital movement, macroeconomic policy makers face several questions (Nsouli and Schaechter, 2002):
1. If electronic banking does make national boundaries irrelevant by facilitating capital movement, what does this imply for macroeconomic management?

2. How is monetary policy affected when, for example, the use of electronic means makes it easier for banks to avoid reserve requirement, or when business can be conducted in foreign currencies as easily in domestic currency?

3. When offshore banking and capital flight are potentially only a few mouse clicks away, does a government have leeway for independent monetary or fiscal policy?

4. How will the choice of the exchange rate regime be affected, and how will e-banking influence the targeted level of international reserve of a central bank?

5. Can a government afford to make any mistakes? Will the spread of electronic banking impose harsh market discipline on governments as well as on business?

If e-banking (Internet banking) has facilitated the banking service processes and made customers’ life a lot easier, it has also thrown new challenges in terms of various risks which may affect the banks’ profitability, capital, and reputation as well. These risks can be:

- **Operational Risk**: because of reliance on technology for all facets of e-banking, operational risk is one of the most significant risks. Operational risk can arise from the potential for loss due to significant deficiencies in system reliability or integrity and also it can arise from customer misuse, and from inadequately designed or implemented electronic banking and electronic money (Goa and Li, 2009). Outdated staff and management expertise and unauthorized system access, employee fraud, are also included operational risk.

- **Credit Risk**: credit risk arises when a counter party fails to settle an obligation when due or any time henceforth for its full value. In the Internet banking scenario the credit worthiness of the customer may not be properly evaluated. So any credit facilities provided to retail or corporate customers
requires proper evaluation and constant audit of lending as well as the repayment progress at regular intervals to avoid such risk (Kapoor. SH, 2007).

- **Strategic Risk:** poor e-banking planning and investment decisions can increase a financial institution’s strategic risk. On strategic risk e-banking is relatively new and, as a result, there can be a lack of understanding among senior management about its potential and implications (Cristina. T, 2008). Strategic risk may arise from lack of appropriate planning and implementation of Internet technology or from a failure to adequately evaluate how Internet banking will impact the institution’s overall business strategies.

- **Interest Rate Risk:** in case of electronic money becoming widely prevalent in the payment system, the interest rate risk and market risk will have an impact on the value of the bank’s assets against its electronic money liabilities (Kapoor. SH, 2007).

- **Reputational Risk:** a bank’s reputation can be impacted by any adverse development that precludes the availability of their e-banking delivery channel. Banks have long based their business on a reputation of trust. The ability to provide a trusted network to support e-banking is critical, and a bank’s reputation can be damaged by Internet banking services that are poorly executed or otherwise alienate customers and the public. Also a bank’s reputation can suffer if it fails to deliver secure, accurate, and timely e-banking services on a consistent basis (Uppal, K. 2007).

- **Liquidity Risk:** the speed which information and misinformation moves over the internet can have implications for the liquidity risk profile of a bank. Adverse information about a bank, whether it is true or not, can be easily disseminated over the Internet through bulletin boards and news groups. This could cause depositors to withdraw their funds in mass at any time of the day, any day of the week. Also, Internet banking can increase deposit volatility to the extent that new customers brought in through this channel maintain accounts solely on the basis of interest rate or terms (Uppal, K. 2007).
• **Foreign Exchange Risk:** a bank may be exposed to foreign exchange risk if it accepts deposits from foreign customers or create accounts denominated in currencies other than their local currency. Since the Internet allows banks the opportunity to extend their geographic range, even internationally, some banks may take on greater foreign exchange risk through e-banking activities than they have through their traditional delivery channel. Also, foreign exchange risk can be intensified by political, social or economical development, which a bank inexperienced in cross-border banking may not appreciate fully (Uppal, K. 2007).

• **Money Laundering Risk:** in the view of the lack of personal interaction between the bank staff and the customers in the Internet banking scenario, the know your customers (KYC) norms may not be implemented effectively as fund transfer transactions of dubious nature may be done by the offenders without much of hassles. Money laundering activities in smaller chunks over a time-period may be carried out through Internet banking (Kapoor. SH, 2007).

• **Legal Risk:** legal risk arises from breach or non-adherence of the prescribed rules and regulations. It can also result from a wrong interpretation of the applicable laws. Internet banking is a relatively recent phenomenon. The laws related to various aspects of Internet banking are still in an evolving phase, lacking adequate information among customers about the risks involved. Rights and obligations can result in disputed transactions and cases against banks causing legal risks (Nagesh. T. R, 2008).

• **Transactional Risk:** transactional risk is the risk to earnings and capital resulting from fraud, error, or inability to deliver the product or service. In an Internet banking environment, the institution is exposed to significant transactional risk due to potential deficiencies in system reliability and integrity, internal (employee) and external (hacker) security breaches, poor design, implementation and maintenance, and customer misuse, both intentional and unintentional (Mann, R. et al, 2008).

• **Compliance Risk:** the bank may face compliance and regulatory risk if it does not adhere or follow the guidelines given by the supervisor or regulator. Due
to lack of awareness and transparency the bank may fail in this matter and hence more care is required in this area (Kapoor. SH, 2007).

- **Security Risk:** security risk is a primary concern relating to e-banking. E-banking increases security risk, potentially exposing hitherto isolated systems to open and risky environment. Security breaches essentially fall into three categories; breaches with serious criminal intent (fraud, theft of commercially sensitive or financial information), breach by ‘casual hackers’ (defacement of web sites or ‘denial of service’ – causing web sites to crash) and flaws in systems design and/or set up leading to security breaches (Cristina. T, 2008). The institutions have to adopt security procedures and practices suited to the prevailing environment. Such steps should re-enforce the trust and faith reposed by the users of on-line transactions so that the trust is not eroded. Everybody is aware that the attackers are getting more sophisticated and deceitful. The security attack could come in different forms. The most widely used ones are phishing and Trojan horse attacks (Baharathan, V. 2008). The term phishing is used as a metaphor for the term “fishing” in the vast ever increasing sea of Internet users for their confidential data. The use of ‘ph’ in the word instead of ‘f’ has come from term “phreaks” who was involved in “phreaking” which was a type of attack on the telephone system in 1970s.

Therefore, when e-banking provides a number of opportunities it also exacerbates the traditional risk of banks. Poverty, illiteracy, resistance of customers and low level of IT equipments penetration in rural area are other challenges for development of e-banking.

Further the adoption feasibility of various methods of electronic banking needs its own infrastructure and e-banking as new technology also needs public acceptance and regulation because without such requirements, e-banking system cannot be applicable. Today every country provides basic infrastructure and necessary standards to banking and this is an irrefutable fact. There can be three important aspects of infrastructural facilities related to e-banking. These are technical infrastructure, security infrastructure and social infrastructure. There may also be some legal issues in relation to adoption and implementation of e-banking. It can be said, therefore, that when an economy decides to use e-banking services, the economy expects a large
number of opportunities but at the same time we cannot negate the fact that it brings a large number of challenges too.

In the early 1990s, the Indian government embarked on the policy of liberalization. The government allowed new private banks to enter in the market. By licensing a small number of private banks, which came to be known as new generation tech-savvy banks, the government introduced greater competition in the Indian banking system.

Several initiatives have also been taken by the government as well as the Reserve Bank of India (RBI) to facilitate the development of these new generation banks. Though ICICI bank initiated the e-banking facilities under the brand name of ‘Infinity’ as early as 1997 however it got its due respect in the year 2000 when the government of India enacted the IT act 2000 with effect from 17 October 2000. This proactive action has provided legal recognition and security to electronic transaction and other means of electronic commerce for the Indian banking system and paved the way for the emergence and growth of e-banking in India. This change in the Indian banking system was introduced with the expectation that the above mentioned opportunities of e-banking will add a new dimension in the banking business of Indian economy. But at the same time we also expect to face several above discussed challenges. This present research work devoted to look into the facts related to the opportunities and challenges of e-banking in the Indian banking system.

1.2 Statement of the Problem

The point of investigation that is explored in this research is electronic banking in general and electronic banking in India in particular. Electronic banking as it has demonstrated the velocity of its growth is incredibly fast and efficient. It has allowed individuals including companies to perform their banking businesses from their homes or offices in a very cost-effective way. Studies have shown that with this new technology, it has become possible for both the banks and customers to have an immediate insight about the status and operations of their accounts.

This study focused on the opportunities and challenges that the introduction of electronic banking has brought in India. On a deeper level the research aims to
acquire better understanding of the factors influencing the development of electronic banking. The research problems in this research can be formulated as:

- What are the main opportunities for banks to adopt and implement electronic banking? The opportunities will be examined in the light of the reduction of costs and marginal profit.
- What are the main challenges that may delay development of electronic banking in India?

We will examine how the e-banking will affect productivity & efficiency, and profitability of banks. The research aims to identify the important challenges for development of electronic banking in India. With the help of the various models we shall explore some possible implications of both opportunities and challenges that may arise as results of the introduction of e-banking system.

Participation in electronic banking can remain underdeveloped if customers encounter low level of security, widespread fraud, cultural resistance, poverty and poor operational infrastructure and management. Participation may also have been affected by the skill required for electronic banking technology and the service level provided by the banks. It is known fact that the application of a new technology will depend on how the technology is being perceived and embraced by the customers. There are many factors that have led underdeveloped countries being too slow in the application of modern technologies. Some of these factors are the ones cited above.

### 1.3 Objectives of the Study

The broad objective of the study is to analyze the emergence and evolution of e-banking. In this regard the research will look at e-banking in general. It will highlight the main effects of e-banking on the banking system. It will endeavor to identify principal opportunities, challenges and obstacles of e-banking system.

More specifically, the underlying focus of the research will be on the following points:

1. To unearth the development of e-banking in India.
2. To explore the structure of electronic banking in India and identify the benefits of e-banking to the banking industry in India.
3. Identify and describe the key services that are available to customers through e-banking in India.

4. To identify the challenges that may arise from socio-cultural and economic structure of India in relation to implementation of e-banking.

5. Evaluation and ranking of barriers to widespread use of the system.

1.4 Research Questions

This research is designed to answer the following questions:

1. Can e-banking improve performance of the banking system in India?

2. Is there a difference in infrastructural barriers scores for people with different qualification, job experience and between staff and customers of banks?

3. Is there a difference in knowledge barriers scores for people with different qualification, job experience and between staff and customers of banks?

4. Is there a difference in regulation and legal issues scores for people with different qualification, job experience and between staff and customers of banks?

5. Is there a difference in social and cultural barriers scores for people with different qualification, job experience and between staff and customers of banks?

6. Is there a difference in economic issues scores for people with different qualification, job experience and between staff and customers of banks?

7. Is there a difference in management and banking issues scores for people with different qualification, job experience and between staff and customers of banks?

1.5 Hypotheses of Study

In the light of the objectives of the present research proposal following hypotheses are formed:

1. E-banking has a positive impact on the efficiency of the Indian banking system.
2. E-banking has a positive impact on the profitability of the Indian banking system.

3. Infrastructural barriers are one of the main challenges for implementation and development of e-banking in India.

4. Knowledge barriers are another principal challenge for the implementation and development of e-banking in India.

5. Legal and security issues are one of the challenges for implementation and development of e-banking in India.

6. Social and cultural barriers are one of the challenges for implementation and development of e-banking in India.

7. Economic factors are one of the challenges for implementation and development of e-banking in India.

8. Management and banking issues are one of the challenges for implementation and development of e-banking in India.

1.6 Scope and Significance of Research

Increased competition, changing business environment, globalization and advancement of information and communications technology are the important changes that have forced the banking and financial services to change. Demand for financial services is changing rapidly. Accompanying these changes is customer behavior regarding to these services. They need to adapt to the new banking environment. Therefore, with the passing of the traditional banking to electronic banking, banks need a new working system and strategies. To attract and retain existing and new customers they need to employ an innovative approach to conducting their business.

Information technology is a capital intensive industry. Investing in e-banking if not done appropriately it can cost very substantial sum of money. Today many banks worldwide offer their services electronically. In an increasingly integrated global economy, the Indian economy will lag behind if it does not take advantage of this new banking system. On the other hand, customers who have the technological understanding are growing in number and these customers prefer a distribution system that is based on information technology. Response to this need of customers with traditional banking systems is relatively expensive. Thus, getting the appropriate
technology is essential to remain in the market. Slow response or overlooking this technological innovation will leave space for non-bank companies and organizations to provide banking services and take a larger share of the market.

Internet banking with the using Web technology and Internet enables customers to process their banking activities in a virtual environment. In order to have a viable e-banking system there is a need for investment in national scale. Without an effective national infrastructure, e-banking cannot be implemented efficiently. Despite the fact that the banks are offering electronic banking services, still adequate research is not done on the barriers and the challenges that implementation of e-banking may face. Therefore, the necessity of such research is a primary requirement in further application of e-banking in India.

The significance of this study is on assessing the prospects of electronic banking in India. This study tries to disclose the central factors that affect development of e-banking and participation or lack of participation of customers in this enterprise. The study also intends to seek for solution to assist the banking industry to improve networking and services. Although the findings may be limited in scope but it nevertheless makes some contribution to the application of e-banking in developing countries such as India.

1.7 Scheme of the Study

This thesis deals with opportunities and challenges of electronic banking in India. It is organized into six chapters.

Chapter 1 introduces the research problem. It summarizes the approach providing a condensed overview of the study and a road map for how the problem is addressed through the succeeding chapters.

Chapter 2 will describe the emergence and evolution of electronic banking in India. This chapter shows the structure and evolution of banking in India. It also describes automation in the Indian banking system and initiatives which have been taken by the Reserve Bank of India to promote e-banking in India. This chapter
further will describe the development of e-banking in India and will discuss about products and services of e-banking which are available in India.

Chapter 3 positions the research within the relevant literature. A comprehensive review of literature is essential for any good research endeavor as it provides background information to aid researcher in designing and analyzing research work.

Chapter 4 will explain research methodology and sources of data. This chapter will describe data collection, analytical tools, questionnaire and research approach which has been used in this thesis.

Chapter 5 will analyze the impact of electronic banking on the performance of banks with special reference to the efficiency and profitability of banks. This chapter further describes data analysis of the study regarding to e-banking challenges which contains 5 steps. First, an overview of the sampling process is described and the responders’ demography will illustrated. Next, factor analysis and test hypotheses will be done. Then, we will try to rank and find out which factor has higher rank as an obstacle for development of e-banking. Forth step, a comparison within the society between bank employees and customers will be presented. Finally, obstacles and challenges for development of e-banking in India will be explained.

Chapter 6 contains the summary of finding and concluding observations made for this research exercise. Implication and recommendations for policy making will be suggested in this chapter.
References


