CHAPTER 2
E- BANKING

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2.1 Introduction of Internet Banking

A number of authors and experts have defined e-banking services as a contemporary facility that provides conventional bank products and services through a new medium i.e. IT.

It is entirely automated facility based on IT delivery mechanism to conventional banking users’ products and services. It provides online medium of conducting and providing various banking services, such as, online accessibility of bank account, online fund transfer facility, online bills paying facility etc. The benefits provided by e-banking medium have resulted into swift growth of banking sector worldwide.

The internet facility has transformed the business world in terms of managing business. According to Abu Shanab et al. (2010), internet has transformed the entire business pattern for people as well as for businesses. Although, technological advancements are happening everyday but not every advancement has been welcomed and adapted by financial sector; but financial sector that enjoying advantages of this new mode of service delivery, has adapted the e-banking phenomenon from its introduction only. Originally it was used for online banking promotional activities of their products and services; but as the e-banking concept developed, banks have started enjoying its various other advantages, such as, reduced per transaction cost, enhanced customer service, raised long term returns by providing ‘anytime anywhere’ banking to the banking customers.

Advancement in technology provides fast innovative changes in people’s routine life. The most significant recent technical advancement that drastically transformed the entire scenario of providing services is the use of internet facility in service delivery. Number of people that are adapted this technological advancement for online transaction such as, online shopping, is increasing tremendously. Gradually, more business organizations realised that it can be utilized to facilitate growth through its advantages of easy accessibility to information and technology transfer. The cut throat competitive environment and demanding customers compelled banks to adapt e- banking concept.
Most of the business organizations have swiftly adapting the advancement in technology and internet facility. Adopting new internet applications have resulted in enhancement of efficiency and quality of service provided as well as attracting prospecting customers. Thus, evolution of internet facility had transformed entire business world around the globe and same happened in banking sector. Banking sector have always been on the top in using ICT in banking business. Challenges faced by banking sector such as, increase in competition, catering variety of demand of heterogeneous customers, decreasing revenue margin and advantages provided by technology, have compelled banks to process new human resource management system. To successfully face all these challenges banks have adapted new technological advancements as earliest possible. Other driving forces that worked for banks to adapt technological advancements are the challenges of meeting varied customer expectations, new regulation and entering into new geographical areas and requirement of new products and services.

Technological advancement specifically, in IT is always seen as the main source of changes taking place around the globe. The entire banking industry has entered into an unparalleled competitive form facilitated by new ICT infrastructure, because of universal and gradual development of ICT.

The latest buzzword for corporate is e-commerce due to increase in awareness of utilization of computer and internet facility and increased use of these facility resulted into development of e-commerce. Today, internet facility has become the main medium of financial, commercial and banking transactions and advancement in ICT have become the top concern for banks. The growth of modern financial software applications has changed the business relationship and service provision with very fast pace. The development in ICT more or less impacted entire business world. Today, e-banking has been extensively used in developed nations and is swiftly escalating in the developing nations as well. Now, e-banking has become a global concept.
Today, the Internet has infiltrated every aspect of life, as exemplified by online entertainment, online shopping, and Internet banking and these new technologies have affected and affected people’s lives in a number of ways. The fast growth of e-banking may make life easier in some ways; however, it must be considered that there is another side to the issue--it also changes lives and habits in unpredictable ways.

The most recent technological advancement is the evolution of e-banking. Various alternative modes of providing banking products are evolved and gained popularity in recent past, such as, tele-banking, Automated Teller Machines, e-banking, credit & debit cards. The most recent one is e-banking that has major impact on the financial market. Banks got the sense that internet facility will open up new horizons for banks and will help them to adapt globalization effectively. According to Thulani et.al, 2009 and Henry, 2000, “Internet banking refers to systems that enable bank customers to get access to their accounts and general information on bank products and services through the use of bank’s website, without the intervention or inconvenience of sending letters, faxes, original signatures and telephone confirmations”.
In essence, e-banking is an electronic consumer interface and an alternative channel of distribution for banking services and products. E-banking is a process through which banking consumers manage their banking transaction without even visiting a bank branch.

Advancement in IT in banking industry resulted in increasing the processing speed of bank transactions and the communication system between bank and its customers. Today e-banking is the most popular delivery system in banking industry. It is the need of hour to extend e-banking services to banking customers so that bank can maximize the benefits for banks as well as for its customers also. The importance of e-banking is growing day by day as it maximizes the advantage for banks and its clients. Even been a costly and risky affair, bank and financial institutions largely investing in latest information system. Other way round e-banking provides economies to the operations as it enables banks to reduce their branch network and number of banking staff. According to Kaleem & Ahmed, 2008, the primary advantage of e-banking is the reduction in inconvenience, transaction cost and time taken in performing an operation, whereas, major concerns are chances of government access and fraud and lack of information security. Banks started adopting more and more technological advancements and that resulted in enhancement of its efficiency. Nowadays internet banking is becoming integral part of banking services.
2.2 Definitions

Electronic banking can be defined as the use of electronic delivery channels for banking products and services, and is a subset of electronic finance (1). The most important electronic delivery channels are the Internet, wireless communication networks, automatic teller machines (ATMs), and telephone banking. Internet banking is a subset of e-banking that is primarily carried out by means of the Internet. The term transactional e-banking is also used to distinguish the use of banking services from the mere provision of information (2).

Electronic banking services are offered in two main ways (3). Either traditional brick and mortar banks combine traditional and electronic delivery channels (brick and click banks) or banks offer their products and services only- or predominantly-through electronic distribution channels without having a branch network (other than a physical presence as an administrative head office or non branch facilities such as kiosks or ATMs). These banks are called “virtually banks”, “branchless” or “Internet-only” banks. Withdrawal and deposit of funds may be made through ATMs or other remote delivery channels owned by these virtual banks or other institutions. Setting up licensed virtual banks can, in principle, be done in three ways.

(1) BCBS (2001): “…Electronic banking, or e-banking, includes the provision of retail and small value banking products and services through electronic banking channels as well as large value electronic payments and other wholesale banking services delivered electronically.”

(2) Sometimes Internet banking is defined as a subset of PC banking, which also includes online banking. In contrast to Internet banking, online banking refers to bank transactions within closed networks (Deutsche Bundesbank, 2000).

(3) Most definitions and distinctions in the following two paragraphs are based on Furst, Lang and Nolle (2000).
First, they can be established as a new independent virtual bank obtaining a license from the banking regulator. Second, existing banks can create virtual banks as separately capitalized banks within a bank holding company structure. And third, a conventional bank can be recast into a virtual bank under its existing charter. An alternative approach is establishing a virtual bank through the creation of trade name virtual banks. These are established as independently operating divisions of existing banks without a separate charter.

Closely related to e-banking activities are products of electronic money. Definitions of e-money used by official bodies vary, mainly due to continuous technical innovations. The BIS (1998) defines e-money as “stored value or prepaid payment mechanisms for executing payments via point of sale terminals, direct transfers between two devices, or over open computer networks such as the Internet” (BIS, 1998) (4). E-money therefore differs from e-banking, since balances are not kept in financial accounts with financial institutions (Bartholomew, Mason, and Shull, 1997). Issues for banking supervisor result from the different aspects on how banks can be involved in e-money activities. Banks can, for example, be the issuer or distributor of e-money. They can also be involved in maintaining records, processing, clearing, and settlement of e-money transactions.

(4) In the 1998 report of the European Central Bank on electronic money, it is defined as an “electronic store of monetary value on a technical device that may be widely used for making payments to undertakings other than the issuer without necessarily involving bank accounts in the transaction, but acting as a prepaid bearer instrument.”
2.3 History of E- Banking

The evolution process of latest service delivery mechanism through internet i.e. e-banking started from the early 1980s. In late 1980s, the term online got popularised and it was referred to a banking medium of using a terminal, keyboard and monitor to access the banking system through a phone line. Another term used for this was ‘Home Banking’ and in it, customers were using a numeric keypad to send tones down a phone line with instructions to the bank. In 1981, e-banking has started in New York with offering home banking service using videotex system by Citi Bank, Chase Manhattan Bank, Chemical bank and manufacturers Hanover bank. Although due to failure of videotex system, Home Banking was not able to gain popularity except in France and UK.

In 1983, Bank of Scotland provided UK’s first home online banking service to the banking customers of Nottingham Building Society. This online banking service was based on Prestel system of UK and used a computer like BBC Micro or keyboard connected to the telephone and television system. This system was called Homelink and it enabled customers to view their bank statements online, online fund transfer and online bill payment. To pay bills or transfer funds, customers need to send a written instruction having details of intended transaction to Nottingham Building Society who set the details upon the Homelink system. The usual recipients of this service were electric company, Gas Company, telephone companies and other banks. The account holder has to provide details of the payment through Prestel into Nottingham Building Society system. Then, a cheque of payment amount has to be send by Nottingham Building Society to the payee and an instruction giving details of the payment was send to the account holder. Later, BACS was used to directly transfer the payment.

In Oct. 1994, Stanford Federal Credit Union was the first financial institution that provided internet banking facility to its all members.

Today, a number of banks are functioning as internet only banks. These internet only banks do not have a physical bank branches like their predecessors. They differentiate themselves by providing better rate of interest and internet banking facility.
2.4 Types of Internet banking

Aladwani (2001) categorized online banking in two types, first, web-based banking through internet and second, dial-up banking consumer uses a modem to dial up to a bank’s server to access bank account. There is a special type of dial-up banking operated by private banks between a banking institution and its corporate clients, known as Extranet.

Thulani et al (2009), Yibin (2003) and Diniz (1998) identify three functional kinds of e-banking that are currently employed in the market place and these are:

Informational Websites - Such services are known as first level of e-banking. Through such services bank provides marketing information regarding banking products and services on a standalone server. It has very low degree of risk as there is no connection between server and bank.

Communicative Websites – In this system there is very less scope of communication between banking system and e-banking users. This communication is only to the extent of e-mail, account balance enquiry, loan application or static file updates. This system is not having fund transfer facility.

Advanced Transactional Websites - This form of e-banking enables e-banking users to transfer their fund electronically, make payment of utility bills and conduct other banking transaction online.

Use of Information & Communication Technology (ICT) is the latest mode of managing data electronically. The advancement of ICT specifically in the utilization rate of internet facility resulted in enhancement of production capacity and increase in fund flow all over the globe. Subsequently, it created a cut throat competitive environment internationally and that lead to challenge of satisfying the customers who are now more aware and educated than earlier. Due to the globalization, the distance between customers and service providers is become irrelevant.

It is well observed that ICT affected the entire financial industry through simplifying enquiry process, better operating speed and providing efficient delivery.
mechanism for financial services. Same way, banks soon sensed that through adaptation of technological advancements, they can gain competitive advantage.

As the use of computer increasing to improve the operating system in the various sectors of the society, it also provided a new medium to commit crimes for some people. With use of hacking to solve the internet problems in 1960’s, computer crimes started and then in 1970s its pace was increased in way of crimes such as privacy violations, phone –tapping, trespassing and distribution of illicit materials. The list of crimes had increased in 1980s by experiencing crimes as, software piracy, copyright violation and introduction of viruses. The scenario became worse and the extent of loss occurred due to these computer crimes is enormous. The international market experienced the same with computers being used for surveillance and transnational organized crime and terrorism.

Organizations and banks while starting the computerization phase were not aware about the fact that it would result in fastening the speed of computer crimes. Now, computer becomes a vital part of our life either personal or professional and its use is irrefutable. The working style of banking institutions has completely changed with the use of computer and internet facility. The large number of banking transactions compelled the banks to take the help of computer in processing the transactions. Due to this, the use of computers and internet facility become ineluctable.

In essence, computer and the internet facility helps bank to facilitate customers’ transactions records and transfer of funds. The computer and internet facility helps customers in various ways as they can directly communicate with the banks, pay their utility bills, transfer the fund, check their account balances and can perform all kind of services offered by their banks. But the use of computer and internet facility provide advantages not only to the banks or organizations but also to the criminally minded people as well.

It is noticeable that even before the occurrence of computer crimes, bank related crimes had occurred. The bank related crimes were bank robbery, false statement to a bank in order to obtain a loan, misapplication or embezzlement of bank fund, false entries in the bank’s pass-book, bribery and fraud. There is a significant difference between these traditional bank related crimes and the modern computer
crimes and that is mainly the use of violence in the traditional bank related crimes and the committer of those crimes was more visible and detection of such crime was comparatively easy. Although the characteristics of these crimes are different from each other but the motive behind these crimes are same. The use of computer has provided additional mode and opportunity to such crimes.

In the last thirty years, the financial industry has seen dramatic and revolutionary changes. Globalization, advancement in technology and integration have transformed banking sector in last two decades worldwide and compelled the regulators to deregulate financial system. Deregulation resulted into enhancement of banking customer base, mark-able presence of banks into new markets with modern technologies involved in individual as well as institutional customer interaction. ICT facilitates conventional financial institution to inflate their business to and through internet facility. According to Sathye (1999), internet facility transformed the financial sector in terms of packaging, delivery and consumption of products and services. Kamal, 2005 and Nath, Shrick & Parzinger, 2001 described internet banking as a valuable and influential tool to economic development and growth, to promoting innovations and to improving competitiveness. Banking and other financial institutions adapted e-banking technique to enhance their efficiency, service quality and customer base.

Additionally, technological advancements reduced the per transaction cost of banks as now there is no need of bank personnel to facilitate customers’ bank transaction, it could be self served through e-banking. The various modes of e-banking, such as, ATMs, Tele-banking, Mobile-banking, debit and credit cards etc. According to Hanson & Kalyanam (2007), e-banking has popularised with very fast pace and as people has started using ATMs, the customer visits to bank branches have reduced and it reduced the requirement of bank branches even more when internet banking have been introduced to the customers in late 1990s. The numbers of internet users are increasing tremendously. According to Internet World Stats 2013, there were 2.4 billion internet users around the world in 2012. Therefore, internet facility has evolved as a global marketplace with global opportunities for financial services, as a challenge and as delivery mechanism also. It provides faster service delivery modes to the customers.
Internet mode of service delivery has increased the business volume and business transactions through e-banking and e-commerce. As customers are relying more on online medium for business transactions, personal finance and investment, the number of internet frauds have also increased and it lead to internet fraud threats for both customers and for organizations. Increased popularity of e-banking resulted in to increased attention of lawful and unlawful e-banking practices. E-banking users are responsible for crimes, frauds and other threats of security risk. Criminals focus on acquiring customers’ e- banking informations to commit financial frauds by using customers’ e-banking account. These frauds are taking various forms, like, fake products selling to scams that promise customer huge fund if assistance can be given to foreign financial transaction through bank account of customers. Usually, internet phishing fraud starts with receiving fake email by customers from a reputed trusted organization, such as, bank, Credit Card Company etc. and customer was directed to fake webpage that asks his personal specifically about bank account number and password. Now, banks are providing Security Indicators to their websites to tackle such threats.

2.5 Internet Banking: Distribution Channels

Today, internet has evolved as the prime medium of service delivery for various financial institutions. Earlier to this, customers were not able to perform their personal and commercial banking transactions with such fast speed as they can perform with internet banking. The internet facility enables banks to perform their traditional activities on a virtual medium, which they use to perform earlier in their branches.

Initially, financial institutions were enthusiastic on identifying advantages of internet and were one of the initiators to adapt e- commerce. After few years down the line, they transformed their websites from only informational websites to dynamic transaction- oriented websites that are providing ‘anytime anywhere’ banking services.

Besides having a large internet user population, most of banks are still having a wide branch network that delivers same products and services that are provided
online as well. Therefore, there must be few opportunities to address this service overlap existed between two kind of distributional channels.

Modes of Distribution

The banking institutions were quick to imbibe the technological innovations taking place in the industry; so much so that it can be said that the banking industry is completely revolutionised post 1991. The need for change had been experienced for quite some time but the initiative of technological upgradation was taken by the private sector banks that can be said to have revived the industry. New modes of providing banking services can be summarised as under:

1. **Internet Banking**: It is also known as Web Banking or PC Banking or e-Banking. The easy accessibility to internet facility and availability of computer lead the banks to provide their products and services through new delivery medium i.e. internet. Today, all private and public sector banks are providing e-banking services to their clients.

2. **Phone Banking**: It is also known as Tele-Banking or Mobile-Banking or M-Banking. India has experienced tremendous increase in the number of mobile phone users. The rate of penetration of mobiles and landlines has risen significantly and this leads to encourage banks to grab this opportunity and thus offered mobile-banking services. Through this service customers can avail information regarding the bank account by sending a SMS.

3. **Plastic Money**: It is referred to ATM cards, debit cards and credit cards etc. Banks have provided ATM facility to their customers and it is connected via V-SAT. Through using ATM, customers can avail a numerous services, such as, withdrawal of funds, account balance enquiry, order a cheque book, deposit fund, have information regarding banking products etc. Even through ATM banks are offering value added services also.

   Recharge of prepaid mobile card is offered by Punjab National Bank who has tie ups to use ATM of banks as:

   * HDFC and SBI;
   * PNB, UTI and Global Trust Bank.
Banks have concentrated on improving their “Point of Cash Delivery”. In addition to credit and debit cards being commonly used as a mode of payment, some other easy channels of delivery have been devised for the customers.

The utilisation of IT is important in the banking industry. All banking transactions can be transacted through the use of the internet. A customer can access his account by logging in the website of the particular bank; he can make all enquiries, transfer funds and pay bills through the use of the internet. According to an investigation conducted by Booz & Allen, it was found that the Net Banking was the cheapest mode of banking. E-Banking has following stages:

I. **Information Kiosk**: The conventional information and data are available on the bank’s website regarding products and services offered by the bank.

II. **Basic I-Banking**: Through this internet – banking infrastructure has been set by the bank to access basic banking services, as, online opening of a bank account, online payment of bills, access account statement and enquire bank account balance online.

III. **Virtual Medium**: This mode of e-banking uses internet facility as a mode of conducting banking transactions. Customers can buy and sell products and services offered through payment gateway service of bank.

More or less, every bank is having its website, by logging in these sites the clients can have access to a variety of services offered by the banks. E-Banking is the commonly used method of banking nowadays.

**Service Channels of Common Banking Activities**

Researcher found that many activities in the areas of personal and commercial banking, borrowing, mortgage, insurance and credit were offered through several different service channels concurrently. This is considerable overlap of service channels. When banks introduced new service channels for their customers, such as Online Banking, they did not replace the old channels. Banks instead provided incentives or disincentives such as altering service fee schedules to promote their new, more cost effective service channels.
Table 4: Banking Activities by Physical and Assistance Needs Self Serve Assisted

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<th>Virtual</th>
<th>Physical</th>
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<tr>
<td>• Check balances</td>
<td>• Make deposits</td>
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<tr>
<td>• Make payments</td>
<td>• Withdraw funds</td>
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<tr>
<td>• Change personal information</td>
<td>• Open new accounts</td>
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<td>Transfer funds between accounts</td>
<td>• Foreign exchange services</td>
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<td>• Check rates</td>
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<td>• Setup pre-authorized transfers</td>
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<tr>
<td>• View bills &amp; statements</td>
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<tr>
<td>• Order cheques (personal)</td>
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<td>• Research products &amp; services</td>
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<td>• Use calculator tools for products &amp;</td>
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<td>services</td>
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<tr>
<td>• Execute investment transactions</td>
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<tr>
<td>• Order cheques (travelers)</td>
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<td>• Modify accounts (Change account</td>
<td>• Increase credit limit</td>
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<td>features &amp; plans)</td>
<td>• Apply for a mortgage</td>
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<tr>
<td>• Receive financial advice</td>
<td>• Refinance mortgage</td>
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<tr>
<td>• Apply for cash management services</td>
<td>• Modify mortgage payment schedule</td>
</tr>
<tr>
<td>• Increase credit limit</td>
<td>• Apply for insurance products</td>
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2.6 Advantages of Online Banking

The prime advantage of e-banking system is reduction in operating cost per transaction. According to Sarel & Mamorstein, 2003 and Nath et al., 2001, the estimate cost of per e-banking transaction is $0.01, whereas, estimate cost of per fully service branch transaction is $1.07, which is very high comparatively to the e-banking transaction cost. Providing e-banking services is the only way to reduce the operating cost without reducing existing service levels. These advantages lead to banks to take e-banking as the most preferable mode of service delivery. Now, banks can deeply analyze all the information gathered from bank customer interactions with the help of information technology. Therefore, to have effective Customer Relationship Management (CRM) system is become key issue in internet banking services. The effective CRM system enables banks to gain better customer intelligence, precision in customization and better managed customer relationships through their virtual presence.
But from a business point of view, integration of traditional physical branch banking and modern virtual e-banking system creates win-win situation for the banks. As e-banking enables banks transfer some of its transaction processing tasks directly to their banking customers. To enjoy these benefits of e-banking system, banks are encouraging their customers to adapt e-banking system and manage their own banking through ATMs and online banking.

Technological innovations are having significant importance in human general and professional life. This era can safely be attributed as technology revolution. The quick expansion of information technology has imbied into the lives of millions of people. Rapid technology advancements have introduced major changes in the worldwide economic and business atmosphere. Information technology developments in the banking sector have sped up communication and transactions for clients (Booz et al, 1997). Online banking is also one of the technologies which are fastest growing banking practices nowadays. It is vital to extend this new banking feature to clients for maximizing the advantages for both clients and service providers.

To enhance its operating efficiency and providing better banking products and services, bank has always been the pioneer in adapting the latest technological advancements. Banks adopted electronic and telecommunication distribution channels for providing various financial services long back. As banks’ focus has shifted from product centric model, they have developed their own e-banking system. Now, banks view e-banking which helped in reducing operating cost as an important value added feature to attract and maintain existing and prospecting banking clients.

In India the number of internet users is increasing with very fast pace that eventually increase the opportunity to increase the number of e-banking users as well. But the success of e-banking largely depends on the technological adaptation rate of Indian retail and corporate banking customers. Therefore, the driving forces that influence the adaptation of e-banking system in India will definitely be a critical issue to banks as well as to regulators of the banking industry.

Although the main factor that effect success of e-banking as a delivery medium of banking services and products is the adaptation rate of the both kind of banking customers by retail and corporate customers as well to e-banking services.
Therefore, influencing factors to e-banking adoption in India are the prime concern for e-banking offering banks as well as for policy makers.

(a) Benefits to Consumers:

General consumers have been significantly affected in a positive manner by E-banking. Many of the ordinary tasks have now been fully automated resulting in greater ease and comfort.

- Customer’s account is extremely accessible with an online account.
- Customer can withdraw cash at any time through ATMs that are now widely available throughout the country.
- Besides withdrawing cash, customers can also have mini bank statements, balance inquiry at these ATMs.
- Through Internet Banking, customers can operate his account while sitting in his office or home. There is no need to go to the bank in person for such matter.
- E-banking has also greatly helped in payment of utility bills. Now there is no need to stand in long queues outside banks for his purpose.
- All services that are usually available from the local bank can be found on a single website.
- The growth of credit card usage also owes greatly to E-banking. Now a customer can shop worldwide without any need of carrying paper money with him.
- Banks are available 24 hours a day, seven days a week and they are only a mouse click away.

(b) Benefits to Banking Industry:

Banking industry has also received numerous benefits due to growth of E-Banking infrastructure. There are highlighted below:

- The growth of E-banking has greatly helped the banks in controlling their overheads and operating cost.
- Many repetitive and tedious tasks have now been fully automated resulting in greater efficiency, better time usage and enhanced control.
The rise of E-banking has made banks more competitive. It has also led to expansion of the banking industry, opening of new avenues for banking operations.

Electronic banking has greatly helped the banking industry to reduce paperwork, thus helping them to move the paperless environment.

Electronic banking has also helped banks in proper documentation of their records and transactions.

The reach and delivery capabilities of computer networks, such as the Internet, are far better than any branch network.

(c) Benefits to General Economy:

Electronic Banking as already stated has greatly serviced both the general public and the banking industry. This has resulted in creation of a better enabling environment that supports growth, productivity and prosperity. Besides many tangible benefit in form of reduction of cost, reduced delivery time, increased efficiency, reduced wastage, e-banking electronically controlled and thoroughly monitored environment discourage many illegal and illegitimate practices associated with banking industry like money laundering, frauds and embezzlements. Further E-banking has helped banks in better monitoring of their customer base. This is a useful tool in the hand of the bank to device suitable commercial packages that are in conformity with customer needs. As e banking provide opportunity to banking sector to enlarge their customer base, a consequence to increase the volume of credit creation which results in better economic condition, Besides all this E-banking has also helped in documentation of the economic activity of the masses.

Economical benefits

E-banking served so many benefits not only to the bank itself, but also to the society as a whole. E-banking made finance economically possible:

(i) Lower operational costs of banks
(ii) Automated process
(iii) Accelerated credit decisions
(iv) Lowered minimum loan size to be profitable.
Potentially lower margins:
(i) Lower cost of entry
(ii) Expanded financing reach
(iii) Increased transparency.

Expand reached through self-service:
(i) Lower transaction cost
(ii) Make some corporate services economically feasible for society
(iii) Make anytime access to accounts and loan information possible.

2.7 Disadvantages of E-Banking

Although e-banking system provides a numerous advantages to the customers but still prospecting e-banking users should identify its few disadvantages as well. Even after investing heavily in e-banking awareness campaign and offering so many benefits through e-banking system, still it lacks in gaining trust factor among its customers.

The disadvantages of e-banking system are as follows:

1. **Impersonal**: Absence of face to face interaction makes it very impersonal. Thus, customers who are more comfortable in dealing with people in physical bank setting that provide those personalised services rather than mechanical interaction; e-banking is not a good option for them.

2. **Lack of trust**: Still many customers do not trust online mode of service especially for money related transactions. Users who are not seasoned in e-banking feel very uncomfortable as they have doubt regarding the correctness of the transaction done by them online. As they require some kind of proof of transaction as receipt, to verify their transactions.

3. **Difficult for first timers**: For the beginners, it appears as a complex mode of service as customer find it complicated to navigate through bank’s website. While opening an account online, bank’s website requires a number of information and that seems time taking and inconvenient process to the first time users.
4. Security fraud: People generally hesitate to have an online bank account due to the security risk involved in it. Although, it is not a big issue for banks providing e-banking services, as they prioritize security. To avoid security risk, banks use the most advanced security system in protecting their websites.

Other disadvantages of E-Banking:
(a) If the bank’s server is down, customer can’t use it.
(b) To use internet banking, customer is compelled to have computer with internet access.
(c) There is always the possibility of a cracker gaining access to customer’s account.
(d) Many banks don’t show customer how to use online banking very well and those are usually the ones with the non-intuitive interface & cluttered design, which makes it pretty easy for customer to screw up something.
(e) Banks bears heavy costs to install high firewall.
(f) It leads to missing of personal services.
(g) E-banking promotes lack of socializing or social contacts

2.8 Risks in E-Banking
As we cannot deny the advantages offered through e-banking, same way we cannot ignore the risks involved in e-banking. Bank should maintain adequate leverage between the advantages and risks of e-banking. Although, marketing and advertising campaign initiated by banks are encouraging a number of customers to adapt e-banking, but for managing such a huge customer base banks need to prepare their internal system on prior basis. To have a deep understanding about the risks of e-banking system, it is categorized in various categories, so that bank can effectively design risk management strategies for e-banking. As now e-banking enabled banking beyond the geographical boundaries, banks have local as well as international customers to process their requests or solve their problems. Complexity of e-banking system has increased due to its close network that involves various service delivery mode offered by a bank and open network, such as internet facility that is subject to
security and reputational risks. It also includes operational risk, legal & regulatory risks, systematic risks, credit risks, market risks and liquidity risks. To achieve efficiency in e-banking, banks should properly identify, manage and control the risks involved in it.

4. Strategic Risk

As e-banking is very new phenomenon, for strategic risk, there is possibility that senior management people would not be known about its prospects & challenges. People, who are good in technological skills not necessarily good in banking skills, take the initiative toward e-banking adoption. Initiative taken by internet users originated in unclear pattern and in various stages. E-initiatives can be expensive and non-recoverable. Even more to it, they are mostly viewed as the loss-leaders to increase market share even it may not encourage those clients that a bank expects and may have unknown impact on existing business lines.

To face this risk, bank should have a definite strategy at the top level and that should comprise the effects of e-banking at the relevant areas. This strategy should be properly communicated across the business and should have a proper and adequate business plan with a performance review system.

5. Business risks

These risks have great importance in any business. As a e-banking is a contemporary issue, people are unaware about the fact that whether e-banking users are having same features as conventional consumers or not. E-banking users not have same features as traditional banking customers. For example, Customers who are requested some services to be conducted immediately, lead to inappropriate existing score card model, therefore it resulted into either high rejection rate or incur inadequate risk covering charges. Furthermore, banks could not assure the effective credit quality at a distance comparatively to they provide serving in branch in person. As well as analysing the quality and nature of collateral security from a distance, specifically if it is of area not familiar to bank. The exact forecast of cash inflow &
outflow is very difficult so it pose a challenge to maintain an adequate level of liquidity.

Although, these risks are not new and banking staff have significant experience in facing them but still need to be addressed properly.

6. Operations risk
Operation risks faced by banking institution may be categorised in 3 ways:

(a) volume forecasts
(b) management information systems and
© Outsourcing.

Exact anticipation of banking transactions is very difficult. Main risk in e-banking service environment is the uncertainty to predict the volume and number of banking transactions. When a bank is not able to manage the demand, bank has to face reputational risk which resulted in financial loss and sometimes compromising in security if additional system configured to manage it properly.

To overcome these risks bank should
1. undertake market research,
2. adopt systems with adequate capacity and scalability,
3. undertake proportionate advertising campaigns and
4. Ensure that they have adequate staff coverage and develop a suitable business continuity plan.

In other words, this is new unknown area and banks require operating cautiously.

The 2nd kind of operational risk is to manage proper information system. Although, it is not only available to e-banking, it is common for all service delivery system. Generally, bank faces problem in generating proper information to analyze its e-banking services due to the difficulty in configuring new information system which can generate adequate, clear and meaningful data. FSA provided guidelines to the banks to obtain information needed by them in proper format as to get an understanding and to differentiate between important and unessential information.
Eventually, most of the banks providing internet banking have outsourced the related business functions, such as, security. The primary reasons of it are to reduce operating cost and lack of expertise in home. Although, outsourcing can also pose a challenge i.e. material risk due to reduction in bank’s control over that particular function that has been outsourced. However, risk created by outsourcing is manageable but bank should consider FSA,s guidelines regarding outsourcing that helps in reducing such risk.

7. Security Risks

Another major problem which is attracting attention in recent years is the security of information collected by banks. With the advent of e-banking the risk of leaking information has increased considerably. In the past the banks functioned in an environment which was secluded where there were no security issues but with interconnected banking operations the banks are exposed to security risks as they function in an open environment. They have to consciously monitor these risks constantly and manage them whenever necessary.

There are majorly three kinds of security breaches, (i) those breaches which have a prior criminal motive (eg. fraud, having access to financial information which can be used for commercial purposes), (ii) breaches undertaken by casual hackers (these breaches may lead to a website not working properly, giving false information or not providing any service at all, may even ultimately lead to a crash of website) and (iii) there may be some defect in the design of the website which may lead to leak of information). All these type of breaches lead to serious financial, legal or reputational repercussions.

Many banks are finding that these systems are hacked several times a day but the losses are minor in the nature. However the banks should develop some kind of Burglar Alarm to trace the number of and the frequency of these unsuccessful attempts to hack the security of inform.

Those computer systems that contain details of high valued payments or which contains highly sensitive confidential information must be properly guarded. An
adequate security system must protect such information. Generally, therefore the greater is the risk of loss the greater the possibility that such a loss may occur. Although the banks are trying to secure overall systems but more attention needs to be paid to the separation of internal systems and poor internal security. One possibility which may lead to hacking of website is gaining entry through a less guarded less valued website and then it gaining entry into a high value system through banks’ internal network. It is being contemplated that banks erect firewalls (i.e. software that prevents an unauthorised person from gaining entry into the system) among their different systems. This would ensure minimisation of damage even if an external breach does occur. The greatest risk to security however is from internal sources that are the employees of the organisation and the contractors.

Even though there are security risks involved in e-banking, it could also eliminate some of the mistakes of manual processing of information (customers are directly contacted through the bank’s system rather than customers contacting the bank first and then bank eliciting information from them). With the development of e-banking practices and management of security risks, large gains could be achieved.

The banks should proactively concentrate on addressing the risks involved effectively. They must devise a strategic approach toward safety of data establishing correct working procedures and security controls into systems and networks. A focussed approach on information security needs to be developed which should include testing of systems’ security controls (i.e. penetration testing), monitoring of new competitors and keeping an eye on the weak spots, reviewing market developments and recruiting adequate staff with expertise to manage information security and its security control system. The above mentioned concerns would be taken up by line managers when they supervise banking operations, they should used reassurances as these accounts.

8. Reputational risks

The reputational risks of banks have increased a great deal with increased use of internet by them. Through the internet everybody has knowledge of all good or bad incidents that take place in a quick span of time. Rumours on the net can be
exaggerated as forecasts. The communication with the help of the internet is undertaken at an alarming speed, this give perhaps no time for anyone to respond or for managers to control such rumours. The crisis management of the banks must be in place and the PR department should be able to handle such occurrences (whether they are real or hoax).

Last reputational risk involves that the products which are sold with the help of the net are properly marketed in such a way that the bank may not be charged with using wrong marketing practices, exactly in the same manner as in the physical world. Banks need to ensure that the rights of the consumers are adequately protected.

9. International developments

E-banking exposes the banks to certain peculiar risks. Supervision of banking activities has to be conducted at a global level if it has to be done effectively. This is essential because e-banking is by nature non-territorial customers can very easily access the site and not only elicit the required information but can also purchase the products of their choice. The regulators have to understand and efficiently deal with the regulatory problems of global e-banking. Cross border supervision mechanisms have been established agreements over home or host responsibilities (within the members), bilateral agreements for sharing of information and setting benchmarks which all domestic as well as bankers abroad are expected to fulfil. The ultimate purpose is that a common mechanism of supervision, strong enough is to be developed which matches the physical banking environment.

10. Credit risk

Generally, a financial institution’s credit risk is not increased by the mere fact that a loan is originated through an e-banking channel. However, management should consider additional precautions when originating and approving loans electronically, including assuring management information systems effectively track the performance of portfolios originated through e-banking channels. The following aspects of on-line loan origination and approval tend to make risk management of the lending process more challenging. If not properly managed, these aspects can significantly increase credit risk.

11. Liquidity, interest rate, price or market risks
Chapter -3: Review of Literature

Funding and investment-related risks could increase with an institution’s e-banking initiatives depending on the volatility and pricing of the acquired deposits. The Internet provides institutions with the ability to market their products and services globally. Internet-based advertising programs can effectively match yield-focused investors with potentially high-yielding deposits.

But Internet-originated deposits have the potential to attract customers who focus exclusively on rates and may provide a funding source with risk characteristics similar to brokered deposits. An institution can control this potential volatility and expanded geographic reach through its deposit contract and account opening practices, which might involve face-to-face meetings or the exchange of paper correspondence. The institution should modify its policies as necessary to address the following e-banking funding issues:

(a) Potential increase in dependence on brokered funds or other highly rate-sensitive deposits;

(b) Potential acquisition of funds from markets where the institution is not licensed to engage in banking, particularly if the institution does not establish, disclose, and enforce geographic restrictions;

(c) Potential impact of loan or deposit growth from an expanded Internet market, including the impact of such growth on capital ratios;

(d) Potential increase in volatility of funds should e-banking security problems negatively impact customer confidence or the market’s perception of the institution.

2.9 Challenges of Internet Banking

Indian internet banking sector is still prevailing in its primary level of growth. Only some banks are providing certain basic services only. Only limited number of private sector banks like HDFC & ICICI Bank is fully computerised and they are providing all services through the use of internet. One of the major factors responsible other Indian banks upgrading technology and competing with other competitors is liberalisation of the economy.
Challenges of E-Banking are as follows:

1. Demand side pressure due to increasing access to low cost electronic services.
2. Emergence of open standards for banking functionality
3. Global players in the fray
4. Dual responsibility, to protect customer’s privacy and protect against fraud.
   (a) Proper understanding of customer: Bank should adequately and properly identify customers’ requirements and wants. To identify the customers exact needs bank should conduct a research survey.
   (b) Due to significant increase in customers’ awareness, the need of maintaining transparency has increased significantly.
   (c) Breach of privacy: While customers conducting banking transactions online, it directly enters into banking records that reveal the identity of customers. Therefore, no one can easily transfer black money.
   (d) Bandwidth: Although, internet facility providers claim to provide speedy and high bandwidth, still the problem of high speed internet prevails. E-Banking can popularize more only with adequate infrastructure comprising telecommunication and bandwidth.
   (e) The level of computer literacy is still very low in India and it works as a bottleneck in the fast acceptance of e-banking.
   (f) The attitude of customers is required to be transformed in India.
   (g) Bank should have proper security measures to protect its customers against “net – jacked” or from frauds.

The threats of e-banking are as follows:

1. The most common way of hoaxing with the information is the cracking login and passwords of e-banking users.
2. Denial of services: high trafficking of queries result into jamming computer network.
3. Data Diddling: Information and data can change in an unauthorized way. It can result in receiving higher amount bill rather than actual amount to be paid by customers.
4. **Session Hijacking**: Hijacker becomes unauthorized intermediary between the customer and the server. Then hijacker can hijack the data and restricts it to reach the relevant destination.

Most online transactions involve disclosing up of the credit or debit card number. Hackers can very easily track down these numbers. They can thus enjoy the full benefits of the card without being an actual cardholder. Reserve Bank of India provided some guidelines on e-banking to protect interest of customers as well as of banks.

The guidelines are as following:

1. It instructed that although banks can accept application of account opening online, but the bank account should be opened after adequate physical verification & introduction of the client.
2. It guided that security measures adopted by bank, for users authentication, must be recognized or approved as a substitute for sign, for legal perspective. As per the IT Act 2000 Sec.3 (2), asymmetric crypto system and hash function tech. should be used as a medium of authentication of electronic records. If bank uses any other medium, it would be taken as a source of legal risk.
3. Banks should maintain secrecy and confidentiality of their customer’s bank account.
4. IT Act 2000 & Consumer Protection Act is applicable to the banking business and they provided legal guidelines to generate, conduct & preserve electronic data that can be treated as a proof in the court whenever required, other than the areas that continue to be regulated by the provisions of Negotiable Instrument Act, 1881.


2.10 Conclusion

E-Banking has transformed not only the banking relationships but transformed the whole banking industry. The e-banking, therefore taken as a mandate by the banks rather than just an additional feature in most of the developed nations, as it is the economical medium to cater the banking customers. Today banking is not restricted to the traditional physical branch system, where banking staff need to be there personally for enabling banking transactions. But still there is strong requirement of customer-awareness regarding e-banking facility prevails in India and it can served through proper scanning and analysis of the market.

Through e-banking, customers can process any banking transaction without even visiting bank branch at any time anywhere and this is known as “anywhere banking”. Providing e-banking is no more considered as an additional feature of a banking institution, but now it is became an essential feature of a bank.