Net Banking in India: Prescriptions for Safe Banking and Protection from Hackers

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ABSTRACT

The use of innovation and computerization of the banking sector of India has increased manifold after the economic liberalisation of 1991. Banking industry has grown by leaps and bounds with the inception of electronic banking. Net banking, which is destined to be the future face of banking services, provides a lot of benefits to the customers like bill payment services, fund transfer, credit card customers, cheque deposit inquiry, view balances, and many more. Although online banking sites are heavily encrypted with the developing technology, it is still hard to rule out the ‘hackers’ who may obtain access to information related to personal identification and password. So the customers must be aware of the security issues and protect their identity and other personal details from hackers. In this backdrop, this paper highlights the growth of net banking and the reasons behind its gaining popularity. It then provides prescriptions before using net banking, and discusses the legal aspects relating to online banking operations. Further, it focuses on the challenges and opportunities of ‘online banking’.

Keywords: Economic liberalisation, Electronic banking, Credit card, Hackers, and Internet security.

1.0 Introduction

The banking industry has grown tremendously with the inception of electronic banking. The term “Internet Banking” is a new age banking system. Net banking or Online banking or e-banking is interchangeably used. It allows the customers of a financial institution to conduct financial transactions on a secure website operated by the institution. Net banking or online banking is a hassle-free system where the customers get benefits for making any transaction with the banks.

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Through this system, customers can perform all their transactions without leaving the comfort of their own home. With the development of technology, they need not go to the bank personally; rather they can use internet banking. So the use of net banking has been gaining popularity. On the flip side, some customers feel hesitant to use net banking because of lack of computer knowledge or operation system. They fear for the loss of their privacy. Moreover, the introduction of net banking, a new concept, has added a new dimension in the revolution of banking sector.

On-line banking means a self-service attitude of banking. It is the process of conducting banking transactions over the internet. It may be defined as a facility provided by banking and financial institutions that enable the users to execute bank related transactions through Internet. Net banking or online banking is a service offered by banks that allows account holders to access their account data via the internet. Online banking is when customers perform most of their banking-related functions without visiting the bank personally. To do so, customers must possess an internet banking ID and a password provided by the bank in which the individual customer has an account. Viewing bank statements and the status of a bank account online also comes under the definition of net banking. It is a system that allows individuals to perform banking activities at home through the Internet.

1.1 Objectives of the study

The study aims to achieve the following objectives:
(a) to discuss about the conceptual understanding of ‘Net banking’/ ‘Online Banking’;
(b) to highlight the growth of ‘Net banking’/ ‘Online Banking’ in a nut shell;
(c) to unearth the reasons behind the popularity of using Net Banking or On-line banking;
(d) to provide some prescriptions before using net banking or online banking;
(e) to throw light on some attacks by hackers;
(f) to discuss the legal aspects relating to online banking operations;
(g) to focus on challenges and opportunities of net banking/online banking
(h) to make concluding remarks.

1.2 Methodology

The study is based on secondary sources of data. The data/information has been collected from different books, journals, newspapers and related websites. The websites of different nationalized banks of our country have also been consulted in order to enrich the study.
2.0 Literature Review

Chauhan and Choudhary (2015) in their paper discuss the challenges and opportunities associated with the internet banking in Indian context. The discussion also concludes that the concept of internet banking is slowly gaining acceptance in Indian scenario and efforts are being made by government agencies to make it more popular among consumers. The paper titled “Electronic Banking in India: Innovations, Challenges and Opportunities” by Kaur and Rajneesh (2014) highlighted the current status of financial innovations in Indian Banking Sector and also threw light on the challenges faced in E-banking and the opportunities available with the banks in E-banking. The paper concludes that many financial innovations like ATMs, credit cards, RTGS, debit cards, mobile banking etc. have completely changed the face of Indian banking. But still there is a need to have more innovative solutions so that the challenges can be solved and opportunities can be availed efficiently by the banks. According to Chavan (2013), the e-banking revolution has fundamentally changed the business of banking by scaling borders and bringing about new opportunities. The paper also concludes that in India, it has strongly impacted the strategic business considerations for banks by significantly cutting down costs of delivery and transactions. Trivedi and Patel (2013) made an analysis on the problems faced by the customers while using e-banking facilities in India. The study revealed that there is a significant difference amongst different problems identified while using e-banking services. Gupta and Mishra (2012) made an investigation on the new emerging trends of E-banking in Indian Banking Industry. The study manifested that there are many challenges faced by banks in E-banking and there are many opportunities available with the banks. It concluded that banking sector is required to master a new business model by building management and customer services. Singhal and Padhmanabhan (2008) are of the view that Internet banking is now used as the term for new age banking system.

Srivastava (2007) made an analysis regarding the customers’ perceptions on the use of internet banking. The study revealed that education, gender, income plays an important role in the usage of internet banking. An observation was made in the study that inhibitory factors viz., trust, gender, education, culture, religion etc can have minimal effect on consumer mind-set towards internet banking.

3.0 Growth of Net Banking / Online Banking in India

The concept of net banking/online banking dates back to the early 1980s. So the 1980s ushered in the era of online banking. It has been evolving with the development of
the World Wide Web. Sometime in 1980s, banking and financial organizations in Europe and USA started suggestive researches and programming experiments on the concept of ‘home banking’. Initially in the 80’s when computers and Internet were not so developed, ‘home banking’ basically made use of fax machines and telephones to facilitate their customers. The widespread of internet and programming facilities created further opportunities for development of home banking. In 1983, the Nottingham Building Society (NBS) launched the first Internet banking service in UK. This service formed the basis for most of the Internet banking facilities that followed. This facility was not very well developed and restricted the number of transactions and functions that account holders could execute. The first online banking service in United States was introduced in October 1994. The service was developed by Stanford Federal Credit Union, which is a financial institution. The online banking services are becoming more and more prevalent due to the well-developed systems.

In India, opening up of economy in 1991 marked the entry of foreign banks. They brought new technology with them. Banking products became more and more competitive. Private banks in India was the first to implement Internet banking services in the banking industry. Private banks, due to late entry into the industry, understood that the establishing network in remote corners of the country is a very difficult task. It was clear to them that the only way to stay connected to the customers at any place and at any time is through Internet applications. Private Banks are pioneer in India to explore the versatility of Internet applications in delivering services to customers.

The ICICI Bank kicked off online banking in 1996. ICICI bank was the pioneer bank to use Internet banking for some of its services in India. ICICI bank and a lot of other Indian banks use the Internet banking system to provide online banking solution. A host of other banks soon followed that system. After ICICI, Citibank and HDFC Bank were the early ones to bite the technology bullet in 1999.

Net banking /online banking has become popular over the years because such system helps:

- to know the balance enquiry in the Accounts;
- to have transaction history;
- to order a Demand Draft/Pay order;
- to use Debit Card Online;
- to access anytime, from anywhere;
- to pay bills online;
- to book rail ticket, air ticket etc.;
- to make an enquiry about cheque status enquiry;
to make an inquiry about cheque deposit inquiry;
- to make download or to collect print of statement of account in various formats for a specified period /current period;
- to transfer funds between own accounts;
- to transfer funds between own account to any third party account maintained in any core-banking branch up to specified limits;
- to transfer funds from own account to accounts with other Bank through Real Time Gross Settlement (RTGS)/National Electronic Funds Transfer (NEFT) within the prescribed limit;
- to pay direct taxes through net banking;
- to stop payment of cheques.

4.0 Net Banking/Online Banking Users: Some Prescriptions

To make online banking a safe and secure, customer needs to take care of the following steps:

- Avoid accessing your account from a cyber café or a shared computer. If you are happened to do so then change your password as soon as you finish your banking transaction.
- Log off completely from your on-line banking website, close the browser and log off your PC, when not use.
- Do not send personal information to anyone through e-mail or share over telephone.
- Do not trust suspicious or unknown e-mail and avoid filling out forms in e-mail messages.
- Do not be lured if you receive an e-mail/SMS/phone call promising reward for providing your personal information or for updating your account details in the bank site.
- Scan your computer regularly with Antivirus to ensure that the system is Virus/Trojan free.
- Change your Internet banking password at periodical intervals.
- Whenever you make a transaction, immediately check your account and see if the right amount has been deducted or added to it. In case there is any misappropriation, inform the concerned bank immediately.
- Do not click on any link/image/icon in the e-mail. Banks never ask their customers to provide their username, password, or credit card numbers through e-mails.
While shopping online, please wait for a second and check if the website is an established one and a reputed name in the online shopping domain. Always check if the shopping site has a well-established permanent address.

- Use complex and difficult password and make it difficult for others to guess.
- Avoid using your date of birth, telephone number, address or name in your password. This practice makes your account more vulnerable to being hacked as your password can be easily guessed by just about anyone. Besides, do not leave your computer unattended while you are logged in to the bank site.

5.0 Types of Attacks from Hackers

Most of the attacks on online banking used today are based on deceiving the user to steal login data and valid TANs. The attacks by cyber criminals are: (a) Phishing; (b) Pharming; (c) Vishing; (d) Cross-site scripting and key logger/Trojan Horses and (e) Man in the Browser attack.

**Phishing:** There are fraudulent e-mails (also known as Phishing e-mails) going out to customers of various banks luring them to update sensitive account information like their User Ids, Passwords, even Transaction Passwords etc., by clicking on an e-mail link or by visiting a website. Phishing is a form of social engineering attack used by cyber criminals to steal sensitive information. It has targeted customers of leading banks throughout the world. It generally uses Spam mails to deceive consumers. The phishers tell recipients of the spoofed mails that they need to ‘update’ or ‘validate’ their billing information to keep their accounts active, and then direct them to a web site that looks like that of the legitimate business.

**Pharming:** It is a hacker’s attack intended to redirect a website’s traffic to another bogus site. Pharming can be conducted either by changing the hosts file on a victim’s computer or by exploitation of a vulnerability in DNS service software. DNS servers are computers responsible for resolving Internet names into their real IP addresses. It is a scamming practice in which malicious code is installed on a personal computer or server, misdirecting users to fraudulent web sites without their knowledge or consent. It has become a major concern to businesses hosting e-commerce and online banking websites.

**Vishing:** The same information as mentioned in phishing attack is also asked via telephone call (globally known as Vishing attack), pretending to be genuine officer from a bank. Vishing is a new trend in online frauds. It is a combination of the words, voice and phishing. It uses voice or telephone services. If customers use a Voice over Internet Protocol (VoIP) phone service, they become particularly vulnerable to a Vishing scam.

**Cross-site scripting and key logger/Trojan Horses:** These can also be used to steal login information.
Man in the Browser attack: The most recent kind of attack is the so-called Man in the Browser attack, where a Trojan horse permits a remote attacker to modify the destination account number and also the amount.

6.0 Internet Banking: Challenges and Opportunities

Some of the important challenges presently being faced by Indian Internet banking sector are discussed below:

- It creates a great problem as and when the services of net banking are disrupted. Millions of queries receiving from customers may block computer network.
- Data can be modified in an unauthorized manner. A customer becomes puzzled when he/she receives bills of higher amounts than the actual transactions.
- Cracking login and passwords is a common way of fiddling with the data.
- Though companies claim to offer good speed and high bandwidth, still there are problems in accessing high speed on net. Internet banking can go high only on the wings of proper infrastructure comprising telecommunications and bandwidth.
- Online transactions enter straightway into the records that reveal the identity of customer. As a result, black money cannot be transferred with ease.
- While services through net banking are offered to the customers, transparency needs to be maintained. No denying the fact that the customers’ awareness has been growing considerably.
- Proper understanding of customers i.e. proper identification of their needs and wants is very much needed. For this a massive survey must be undertaken in collaboration with other banks.
- Many people think that it is very hard to learn all of the ins and outs of online banking. Sense of fear instills in their minds. As a consequence, they feel hesitant to avail the opportunity of online services.
- The biggest day-to-day problem with Internet banking appears to be access.
- It is difficult for beginners to master the online banking system and it may take some time. Some sites require photo identification, which may not be very convenient.
- Customers need to get an account with an Internet Service Provider (ISP), which may be another hectic experience.
- Customers cannot spend their money from the online bank account as they wish. They need to go to an ATM to withdraw money for usage.
Security is the biggest concern surrounding Internet banks. Consumers are worried that hackers may get into their account and spend their money.

If the Internet goes down in the area of customers or the area of banking office, the customers will not be able to access their accounts. This includes being unable to withdraw money from ATM or to use their debit card.

Many Internet banks do not have ATMs, which means customers will have to pay ATM fees. This can cost customer more money than paying the regular monthly fees at a brick and mortar bank.

Computer literacy in India is still very low. This has created a barrier in fast acceptance of Internet banking.

The mindset of the Indian customer needs to be changed.

6.1 Benefits and Opportunities

Online banking is fast as well as convenient. Customers are no longer required to make the trip to the bank and wait in long lines, all the transactions of the customers can be finished in a matter of minute. The opportunities from using net banking/online banking are stated below:

- The customer can conduct their banking transactions safely and securely without leaving the comfort of their home.
- Lot of precious time is saved because of online banking, as transactions are carried out in seconds and the customers can see the updates immediately.
- There is improvement in customer access. The bank can access more customers within a short time through the Internet.
- The customers can carry out all banking transactions at their own convenience and do not have to depend on normal banking timings.
- The customer can be able to transfer money from one account to another easily without necessarily having to travel to the bank.
- Online banking is a faster way of performing banking functions. Whether any customer buys goods online, books railway/air tickets, pays bills or transfers money, it gets done in real time and within moments.
- It is an eco-friendly process as it does not consume volumes of paper like conventional banking modes and hence helps protect the environment.
- Another opportunity of online banking is that although regular banks close at certain times and are closed on certain days, online banks are always open.
- Banks also provide balance alerts if the balances of customer’s accounts reduce and alert the customers in case of due dates of their bill occurs.
The process is very cost-effective. It rids businesses of the practice of deputing people to specifically pay company bills, who waste hours making the rounds of the banks to perform all the firm’s banking-related functions.

There is no need of standing in a queue. Usually people have to queue at a banking hall and wait to be served by an employee. This may take hours and result into exhaustion. It is a tiring process that many clients would like to avoid. The best way to avoid such a situation is to bank online.

The services and various features of the bank are always available 7 days a week and 24 hours daily. The most interesting thing here is that, everything can happen at just one click of a mouse.

Bill payments can be handled properly and smartly. Instead of waiting for certain due dates, the customer can easily pay all their transactions using their computer and in coordination with their bank.

7.0 Net banking/Online banking: Some Legal Aspects

There are some guidelines that govern net banking or online banking operations within the country. The legal framework for banking in India is provided by a set of enactments. These are – the Banking Regulations Act, 1949, the Reserve Bank of India Act, 1934, the Foreign Exchange Management Act, 1999, the Information Technology Act, 2000, the Information Technology (Certifying Authorities) Rules, 2000. Broadly, no entity can function as a bank in India without obtaining a license from RBI under Banking Regulations Act, 1949. Different types of activities, which a bank may undertake, and other prudential requirements are provided under this Act. Accepting of deposit from public by a non-bank attracts regulatory provisions under RBI Act 1934. Under the Foreign Exchange Management Act 1999, no Indian can lend, open a foreign currency account or borrow from a non-resident, including non-resident banks, except under certain circumstances provided in law. Besides these, banking activity is also influenced by various enactments governing trade and commerce, such as Indian Contract Act, 1872, the Negotiable Instruments Act, 1881, Indian Evidence Act, 1872 etc. Government of India has enacted the Information Technology Act, 2000 in order to provide legal recognition for transactions carried out by means of electronic data interchange, and other means of electronic communication, commonly referred to as ‘electronic commerce’. The RBI guidelines have defined the operational framework on Internet banking with a focus on security issues. The IT Act 2000 and the IT Rules for Certifying Authorities lay down the framework for appointment of digital certifying
authorities, acceptance of digital signatures etc., which would enable the orderly development of cyber business.

8.0 Concluding Remarks

Opening of Banking Operations through Internet Banking has been one of the biggest additions to the Banking World in the recent time. It has made Banking operations available any time, anywhere at the convenience of the customers. The online banking has changed the business of banking by bringing about new opportunities. It is more widespread than even before. With millions of people is gaining access to the Internet through broadband connections at home; many are discovering how easy and efficient it is to bank online. Net banking/online banking provides many benefits to customers and banks. It is fast, easy and secure. Banking transaction details, viewing/printing of account statement, transferring funds, third party payments, tax payments, ticket booking etc. are some of the benefits extended through online banking. In the current scenario, every bank in India has the Internet facility. With the advances in technology, many banks have taken the adequate measures to ward off any problems related to the security of Internet banking. The Internet is rapidly turning out to be a tool of worldwide communication. The motto of the banks is to lure more customers and show them the advantages of Internet banking by educating into the new system. This gives the countries entire population to get the benefit of technology advancement. When the customers come to the Internet banking, Internet security on net banking is the challenging problem to be faced by all the major portals. Every customer must be aware of the security issues and protect their details from the hackers. However, the Internet banking is fraught with enormous risk. So precautionary measures need to be taken in order to avoid the risk. For carrying out Internet banking properly, a basic knowledge of computers and the Internet is required. But in reality, it is noticed that most of the people have the deficiency of such knowledge. Such situation limits the number of people to avail this facility. Many people, who are not comfortable with computers and Internet, often find it difficult to use this service. So the education regarding operation of net banking is urgently needed and proper training arrangement needs to be imparted to the online banking users.

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