



## **E-BANKING: RISKS AND SECURITY MEASURES**

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### **Abstract**

Globalization has brought about sweeping changes in all sectors of the Indian economy. The banking sector which occupies a prime position both in the national and global economy has also seen tremendous changes in the last few decades. Electronic banking the result of technological advancement is a major change that has affected the lives of ordinary citizens. Electronic banking facilitates bank customers to get access of their accounts and general information on bank products and services in few seconds. E-banking economizes time, because it allows to the user to access their bank account from anywhere throughout the day. However, one of the main concerns of E-banking is security and this concern with security and fear of fraud deters the extensive use of this type of banking. Without total confidence in security, customers are unwilling to use a public network, such as the internet, to view their financial information online and conduct financial transactions. This is unfortunate because this system has a number of benefits for all especially in a vast developing country like India. This implies that banks must concentrate on improving the security features of their E-banking services so as to give it wider acceptability. This paper discusses some of the important risks associated with E-banking and the security measures to be adopted by banks to reduce risks and encourage the wider acceptance and use of E-banking.

**Keywords: E-Banking, Risk, Security.**

### **INTRODUCTION**

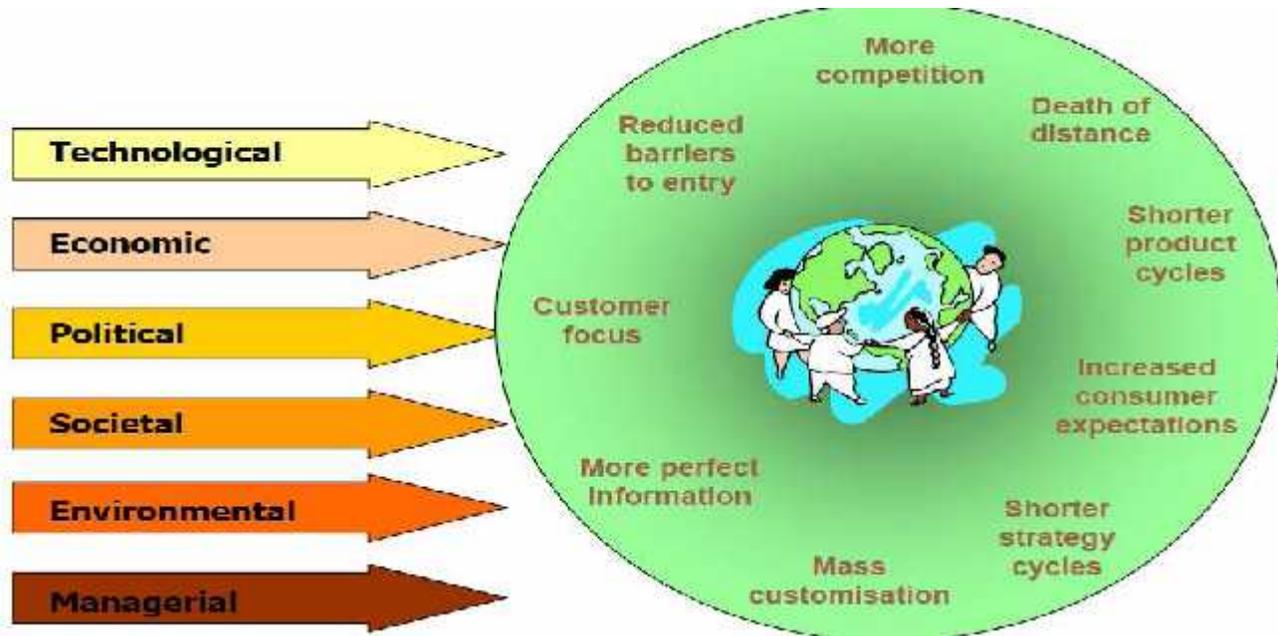
Globalization has brought about sweeping changes in all sectors of the Indian economy. The banking sector which occupies a prime position both in the national and global economy has also seen tremendous changes in the last few decades. These changes have been driven by a number of internal and external forces. Of the external forces, technology, in particular the Internet is a key driver of these changes. Electronic banking also referred as internet banking, online banking, and virtual banking is the result of this technological advancement and this system of banking has affected the lives of ordinary citizens. The range of e-banking services is likely to increase in the future. Banks race against each other in bringing the latest technology for the benefit of their customers and themselves (Sudeep, 2007). Numerous factors including competitive cost, customer service, and demographic considerations are motivating banks to evaluate their technology and assess their e-commerce and internet banking strategies. However, the Internet has not only generated previously non-existent opportunities for cost effective, all time available financial services, it has also increased the significance of a number of risks which did not exist or were not significant in the past. This paper analyses the risks involved and suggests ways to reduce them.

### **MEANING AND ORIGIN OF ELECTRONIC BANKING**

Electronic banking is an electronic payment system that enables customers of a financial institution to conduct financial transactions on a website operated by the institution, such as a retail bank, virtual bank, credit union or building society. E-banking encompasses an array of financial transactions, once done through the tangible exchange of information, now are done electronically. According to Basel Committee report(1998), "E-banking refers to the provision of retail and small value banking products and services through electronic channels. Such product and services can include deposit-taking, lending, account management, the provision of financial advice, electronic bill payment and the provision of other electronic payment products and services such as electronic money". E-banking includes various banking services like loan application, account balance inquiry, fund transfer etc. provided by a bank through internet. E-banking has evolved into a "one-step service and information unit", that promises great benefits to both banks and consumers. Thus E-banking includes the systems that enable financial institution customers, individuals or businesses, to access accounts, transact business, or obtain information on financial products and services through a public or private network, including the Internet. Customers access e-banking services using an intelligent electronic device, such as a Personal Computer (PC), Personal Digital Assistant (PDA), Automated Teller Machine, kiosk, or Touch Tone telephone. It is very convenient and is not bound by operational timings. There are no geographical barriers and the services can be offered at a very small cost.

Banking organizations have been providing e- services since long time. E-banking has essentially been around us since the 1990s and year 1990 onward many Indian banks have started providing products and services to customers electronically via internet. Today every organization wants to tap the benefits that accrue from technology development. In other word, most organizations find means of enjoying the advantages encapsulated in the new technologies (Larpsiri and Speece, 2004; Durkin and Howcroft, 2003; Masocha et al, 2011). The reduction of cost through substantial improvement in efficiency by

business organizations resulted in banks diverting their focus towards extensive computerization and electronic operations (Masocha et al, 2011). Growth of e-banking or e-payment systems and implications with driving forces of the new economy has been shown in the following fig1.1



**Driving forces of the new economy, Source:Chouhan, Raksha**

### **RISKS ASSOCIATED WITH E-BANKING**

The last few years have seen considerable rapid changes in technology and the implementation of corporate and retail banking services through the Internet. The exceptional speed with which new technologies are being adopted, the ubiquitous and global nature of electronic networks, the integration of e-banking platforms with legacy systems and the increasing dependence of banks on third party information service providers, all dramatically magnify the magnitude of risks to which banks are exposed. Electronic banking like any other form of banking is associated with array of risk categories and emphasizes the risks that any financial institution faces. The board and senior management must be acquainted of these risks and deal with them appropriately.

These risks are briefly discussed as follows:

- **Compliance Risk:** Compliance risk may lead to reduced reputation, actual monetary losses and reduced business opportunities. Banks need to wisely understand and interpret existing laws as they apply to E- banking and ensure consistency with other channels such as branch banking. This risk is intensified when the customer, the bank and the transaction are in more than one country. Differing laws, tax procedures and reporting requirements across different jurisdictions add to the risk. The need to keep customer data private and seek customers' consent before sharing the data also adds to compliance risk. Customers are very concerned about the privacy of their data and banks need to be seen as trustworthy guardians of such data.
- **Money laundering Risk :** All financial institution are indicted with the responsibility of developing policies and procedures to combat money laundering, which includes the duty to be aware of trends and adaptations in the methods by which money laundering is carried out. The most difficult aspect of this responsibility is a financial organization's ability to anticipate new criminal behavior and to proactively implement protocols before the criminal behavior occurs. Money laundering is called what it is because that perfectly describes what takes place - illegal, or dirty, money is put through a cycle of transactions, or washed, so that it comes out the other end as legal, or clean, money



- **Transaction Risk:** A high level of transaction risk may exist with E-banking products, because of the need to have sophisticated internal controls and continual availability. Most Internet banking platforms use complex interfaces to link with legacy systems, thereby increasing risk of transaction errors. There is also a need to ensure data integrity and non-repudiation of transactions. Third-party providers also increase transaction risks, since the organization does not have full control over a third party. Without seamless process and system connections between the bank and the third party, there is a higher risk of transaction errors.
- **Security Risk:** Security is a major concern in adoption of E-banking. Security risk arises on account of unauthorized access to a bank's critical information stores like accounting system, risk management system, portfolio management system, etc. A breach of security could result in direct financial loss to the bank. For example, hackers operating via the Internet could access, retrieve and use confidential customer information and also can implant virus.
- **Strategic Risk:** Meager e-banking planning and investment decisions can increase a financial institution's strategic risk Banks should respond to these risks by having a perfect strategy driven from the top and should confirm that this strategy takes account of the effects of e-banking, wherever relevant. Such a strategy should be clearly disseminated across the business, and supported by a clear business plan.
- **Reputation Risk:** A bank's reputation can be impaired by E- banking services that are poorly executed. Customers are less pardoning of any problems and thus there are more stringent performance expectations from the Internet channel. Reputational risk is the risk of getting noteworthy negative public opinion, which may result in a critical loss of funding or customers. Such risks arise from actions which cause major loss of the public confidence in the banks' ability to perform critical functions or impair bank customer relationship. The main reasons for this risk may be system or product not working to the expectations of the customers, significant system deficiencies etc. Directly affected customers may leave the bank and others may follow if the problem is publicized.
- **Credit Risk:** It is exceptionally difficult for banks to verify the identity of the customer, if they propose to offer instant credit through the Internet. Verifying collateral and perfecting security agreements are also difficult. Credit risk is the risk that a counter party will not settle an obligation for full value, either when due or at any time thereafter. Banks engaging in electronic banking activities may extend credit via non-traditional channels, and expand their market beyond traditional geographic boundaries. Finally, there could be questions of which country's (or state's) jurisdiction applies to the transaction.
- **Market Risk:** Market risk is the value of an investment will decrease due to moves in market factors. Volatility frequently refers to the standard deviation of the change in value of a financial instrument with a specific time horizon. It is often used to quantify the risk of the instrument over that time period. Market risk is basically described as four types of risk that is Liquidity risk, Foreign Exchange Rate risk, Interest Rate Risk and Hedging Risk.

#### TYPES OF RISK OF ELECTRONIC BANKING

- Compliance Risk
- Money Laundering Risk
- Transaction Risk
- Security Risk
- Strategic Risk
- Reputation Risk
- Credit Risk
- Market Risk

#### E-BANKING SECURITY MECHANISMS

Considering the risks discussed above it follows that managing security issues is a biggest challenge for banks. Hardware or software "sniffers" can achieve passwords, account numbers, credit card numbers, etc. without regard to the means of access. Banks therefore must have a comprehensive system of internal controls to protect against security breaches for all forms of electronic access. A sound system of protective, detective, and corrective controls will help in maintain the integrity of the network and the information it handles. Firewalls are frequently used in Electronic banking systems as a security measure to safeguard internal systems and should be considered for any system connected to an outside network. Firewalls are a



combination of hardware and software placed between two networks through which all traffic must pass, regardless of the direction of flow. They provide a gateway to guard against unauthorized individuals gaining access to the bank's network.

In order to maintain the reputation of organization and gain loyalty of customers now days bank take protective measures to ensure that customers private information is keptsafe and secure. Some examples of security measures that banks are providing are.

- Secure Logins: Customers will create their own online access account number and code that they will need each time they log in.
- Limited Sessions: Most banks offer limited sessions that require the customer to re-login after they have been inactive for a period of time preventing anyone from viewing your information if they leave their computer for too long.
- Limited Logins: Banks limit the number of times a customer can attempt to log in per day and lock out the customer if exceeded. That way someone can't attempt to break the customers' logincode easily.
- Integrity of Transferred Data: Providing integrity mechanism ensures that information transferred between bank and its client can't be forged or modified by an attacker.
- Undeniable Responsibility for Transactions Made: This mechanism ensures that message sender is responsible for message he has sent and this sender can't deny that he has sent this message. Typical use of this mechanism is in active transactions, where client sends message of transaction into the bank. Receiver of message of transaction (bank) can easily prove that this message was created and sent by the specific client and this client can't deny responsibility for this message. Most common way to ensure this mechanism is electronic signature.
- Safe Confidentiality of Transferred Data: Eavesdropping of the communication between client and the bank is avoided by confidentiality mechanism
- User Secure Authentication (Identity Proof): System should provide secure identification and user authentication by using password or other mechanism. Users' unique account access and transaction capabilities are provided by user authentication.

Use of all the security measures mentioned above are essential so that customers trust the system and are inclined to adopt electronic banking in the interest of all parties concerned.

## CONCLUSION

Electronic-banking is making substantial progress in terms of customers' adoption, functionality and profitability for banks. Nevertheless it still faces a number of threats including security and privacy issues which will have to be dealt with to ensure long term survival. Internet banking may also become more viable as the functionality of e-banking grows, and customers adapt to the new ways of conducting their financial activities. In order to address the changing customer's needs, preferences, and behavior, banks need to develop customer-centric structures and to build new capabilities to fascinate customers across all generations and banking channels. The accessibility of innovative, technology-led banking services is a top priority for the banking customer of the future. It is becoming essential for banks to integrate internet, branch network, and e-banking channels in order to attract, satisfy and retain customers E-Banking does not merely involve technology implementation. It involves changes in management, technology position as well as business process re-engineering and calls for an interdisciplinary approach.

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