

E-Banking

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Abstract- *The global economy is undergoing transformation at a rapid pace and technology is instrumental for this change. The impact of technological revolution is being experienced in all walks of life and banking sector has also witnessed the same. Indian banking sector has also gone under complete transformation. Banking is no longer limited to traditional brick and mortar system rather it is shifting to brick and click system and virtual banking. New services are being offered by the banks through the medium of internet. One of the reasons for e-banking gaining momentum in India is the increasing internet penetration among people. People today prefer using electronic medium for banking because of lot of advantages associated with it. Though e-banking provides lot of advantages in form of speed, ease and convenience it has also put forth some issues and challenges that needs to be addressed. In this paper, an attempt has been made to give an overview of ebanking, how it has evolved over a period of time in India. The paper also throws a light on growth of different e-banking products in last five years which are significantly being used in Indian banking industry. Keywords: E-banking, electronic banking, banking in India, virtual banking.*

Keywords- Bluetooth, Door unlock

I. INTRODUCTION

Banking system always has an important role to play in every country's economy. It is vital for any nation as it provides for the needs of credit for all the sections of the society. India is not only the world's largest independent democracy but it is also an emerging economic giant. The growth potential of India is based on its strong banking institution. The infusion of information technology in banking sector has completely revolutionized how the banking sector operated. In order to survive in the new globalized world, banks had to opt for this new change. Banking in India has been through a long journey. It has seen a number of changes due to technology and innovation. Arrival of card, introduction of Electronic Clearing Service (ECS) introduction of Electronic Funds Transfer and concept of online banking and mobile banking are the various novelties which took place in banking sector. Now all the banks have started with the concept of multi- channels, like ATMs, credit cards, debit cards, telephone/mobile banking, internet banking, etc. The

role of banking has now changed from a mere financial intermediary to service provider of various financial services under one roof acting like a financial supermarket. With extreme competition among the banks, entire banking system is undergoing a change. Today, modern banking not only looks for new ways to attract but also to retain the customers and gain competitive advantage over their competitors.

II. BACKGROUND

Internet banking refers to banking products and services offered by institutions on the Internet through access devices, including personal computers and other intelligent devices (Bank of Mauritius). Internet banking remains one of the economical and more efficient delivery channels Pikkarainen et al (2004). According to Arunachala and Siva Subramanian (2007), Internet banking is where a customer can access his or her bank account via the Internet using personal computer (PC) or mobile phone and web-browser.

In today's busy world, when people do not have much time even for personal work, online banking appears as a boon. Online banking was introduced in the early 80s and from the time it has been introduced, many people have started availing its facilities. Now, one does not have to wait in a long line at the bank or at some shopping centre or boutique. Online banking gives a person facility to view account statements, make money transfers from one account to the other, and also to pay bills like electricity, phone, etc. The best thing about online banking is that it is fast and is available to a person in any part of the world, at any time he or she needs it. In addition, Ongkasuwan and Tantichattanon (2002) further defines Internet banking service as banking service that allows customers to access and perform financial transactions on their bank accounts from their web enabled computers with Internet connection to banks. Burr (1996), for example, describes it as an electronic connection between the bank and customer in order to prepare, manage and control financial transactions. Chou (2000) identified five basic services associated with online banking: view account balances and transaction histories; paying bills; transferring funds between accounts; requesting credit card advances; and ordering checks for faster services that can be provide by domestic and foreign bank.

III. WHAT IS E-BANKING?

As the name implies, electronic banking or e-banking involves combination of electronic technology with the banking sector. It relates to provision of banking products and services through electronic delivery channel. Under this system, the banking services are delivered by way of a computer controlled system. E-banking involves providing banking and related service through extensive use of information technology without direct recourse to the bank by the customer. With growing popularity and benefits of e-banking, lot of banks have realized the importance, competition and challenges brought forth with this new technology and are adapting to this new-age banking. Daniel (1999) defines electronic banking as the delivery of bank's information and services by banks to customers via different delivery platforms that can be used with different terminal devices such as a personal computer and a mobile phone with browser or desktop software, telephone or digital television. Electronic banking is defined by Barron's Dictionary (2006) as a form of banking where funds are transferred through an exchange of electronic signals between financial institutions, rather than an exchange of cash, checks, or other negotiable instruments.

IV. FEATURES OF E-BANKING

- 24x 7 banking hour service
- No geographical barrier
- Easy Electronic Fund transfer facility.
- Better efficiency in Customer relationship management.
- Making the Payments of bills like electricity, telephone bills, and mobile recharge.
- It can view of balance of accounts and statements.
- E-banking can bring doorstep services.
- Order mini statements.
- Mobile banking.
- SMS banking services

DIFFERENCE BETWEEN TRADITIONAL BANKING AND E-BANKING

Traditional Banking:

- Banking institutions exist physically for offering services to the customers,
- It consumes a lot of time as customers have to visit banks personally
- People have to visit banks only during the working hours.

- Traditional banking does not encounter esecurity threats.
- Customers have to spend money for visiting banks.
- Physical presence implies a lot of operating and fixed costs.
- In traditional banks, the employees and clerical staff of the bank can attend only few customers at a time.

E-Banking:

- Internet banks do not have physical presence as services are provided online.
- It does not consume time as customers do not have to visit banks personally.
- Internet banking is available at any time and it provides 24 hours' access
- Security is one of the problems faced by customers in accessing accounts through internet.
- It is relatively cost effective as customers do not have to spend money for visiting banks
- Such costs are eliminated as the banks do not have physical presence.
- In online banking, the customers do not have to stand in queues to carry out certain bank transactions.

V. CASE STUDY

We compared the level of security and usability of one of the major banks in Hong Kong and one of the major banks in European countries. In this case study, we choose Hang Seng Bank [10] as the one in Hong Kong and Barclays Bank. We measure the number of methods to be used in online security for both banks, the effectiveness, users' comment in using, users' awareness to be secured and overall security. To simplify our case, we just focus on the personal e-banking service

ATTACKS ON E-BANKING

Classic Attacks:

Here we describe common well known attacks widely used in history and presence. Guessing or password guessing is usually dictionary based attack, where attacker is trying to guess your password. Usually, dictionary of a lot of common passwords is used. When attack remains unsuccessful after depletion of predefined set of password, than is redirected to another user. Exhaustive search known also as brute-force attack is based on trying a large number (all) of possibilities of password or secret key. In this case, the

attack continues until the correct password is acquired or the attack is detected. Eavesdropping is listening without the speaker's knowledge. In our case network traffic is usually eavesdropped. It's usually used for man-in-the-middle attack.

Phishing

Phishing which is known also as carding or brand spoofing has many different forms and definitions. Essence of phishing is deceiving user by counterfeit email in purpose of obtaining personal data. First registered phishing attack was carried out in 1995 on America Online (AOL). Phishers were imitating administrators of AOL, pretending a problem with accounting. They claim restoring of data about payment card and account. This attack was very successful. Fusion of home personal computer and internet were rare and there was no reason to distrust these emails. Naturally, today attacks affect much bigger part of population. Till now, there were 370 000 phishing web pages, which were used for some kind of phishing attack [1][2]. Number of attacks is still increasing and new kinds of attacks are appearing.

Malware and Phishing

Combination of malware and phishing brings together the strongest parts of both sides (in a bad meaning). Information gained by malware can be used for increasing credibility of phish pages as well as malware can affect targeted computer itself.

IMPROVEMENT IN E-BANKING

1. **Show deposited check images:** Many systems only show an image of the deposit ticket. What good is that? We want to see the image which was deposited! We can't remember them all, and we don't make copies of these items!
2. **Incentivize active customers to give you fraud prevention "issue data":** Some corporate clients provide positive payee issue file data via file exports, but small business and consumers still write checks too. Let clients enter payee, amount and/or serial number information so your bank can provide real-time positive pay as a risk mitigation tool. Financial institutions want to protect their accounts — just give us a vehicle to do so. This not only helps the bank to automatically validate the payment data, but encourages proactive client involvement, something which can even be a tool in your customer deposit agreement!

3. **Use payee data as a value-add too:** Read the payee and offer downloads into Quicken and other budgeting tools.
4. **Display payee data:** Display this text data on the statement and for online payee fields in addition to the image to enrich the client experience. Technology is available for this.
5. **Show that the bank has validated each and every check:** Use new automation and validation technologies to confirm and extract the payee, payer, date, and any other field and reconcile to my deposit agreement. Show me it's passed the negotiability tests.
6. **Integrate eChecks or Electronically Created Items (ECI) as a payment vehicle:** When we pay bills through automated bill pay, many are printed and mailed. Sometimes this takes a week to process! Completely unacceptable. Incorporate electronic options which are delivered via email (or with other high speed rails) and get our payment confirmation in the box of the payee immediately and confirmed upon receipt!

IV. CONCLUSION

E-Banking is a non-reversible phenomenon which will gain more momentum in the coming years. With digitalization of Indian economy and move to turn India into cashless society, e-banking is going to be strengthened. Many banks in India including the State bank of India, HDFC, and ICICI etc. are levying charges on cash transactions above a certain limit. Though this is mainly being done to curb cash withdrawals as many banks are still twirling over cash crunch caused due to demonetization in 2016. But this step is surely going to boost online banking and virtual transactions in India. As can be seen from data given above, be it ATMs deployment or issuance of debit card or credit card, they all witnessed an upward increase indicating their growth in recent years. The young generation has already adapted to this change and perceive this changing banking system more as a convenience mode than a challenge.

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