

Technological Evolution and its New Dimension in E-Banking

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This paper focuses on the technological change in banking sector. Technology invention is being implemented in banking sectors. E-banking reduced not only the work pressure of bankers but also provide fast access to banking services. It also enhances customer perceptions regarding quality and satisfaction. Financial services industry over time has opened to historic transformation that can be termed as e-developments which is advancing rapidly in all areas of financial intermediation and financial markets such as e-finance, e-money, electronic banking (e-banking), e-brokering, e-insurance, e-exchanges, and even e-supervision. The new information technology (IT) is turning into the most important factor in the future development of banking, influencing banks' marketing and business strategies. In recent years, the adoption of e-banking began to occur quite extensively as a channel of distribution for financial services due to rapid advances in IT and intensive competitive banking markets.

Keyword: E-banking, electronic bill payments, password authentication.

Introduction

The word technology is not a new one. In fact, the root of the word means to shift or to change, and was used originally in relation to changing nature. Today we think of technology as being about electronics (computers, software, web applications, etc.). Although this is not totally true but we can't deny this also. Today, nobody can think of any organization where technology (either in the form of an Internet presence or just general communication) is not crucial and so is the area of banking.

Now people like everything on their fingertip. The technology enables it for banking also through online banking. Online banking is also known as internet banking, E-banking, or virtual banking, it is an electronic payment system that enables customers of a bank or other financial institution to conduct a range of financial transactions through the financial institution's website. The online banking system will typically connect to or be part of the core banking system operated by a bank and is in contrast to branch banking that was the traditional way customers' access banking services.

E-Banking Technological Features

E-banking and e-commerce formulated as the use of Internet, the Web, and other features to conduct transactions electronically. Therefore, the required features for e-commerce can be settled to E-banking. Researchers found out the features of e-commerce technology. Those features include ubiquity; which refers to the availability everywhere, and at any time, global reach; which refers to the ability of e-banking technology to permit transactions to cross cultural and national boundaries, universal standards; which refers to the technical standards of the Internet, richness is the complexity and content of a message, interactivity; which refers to conducting online dialogues with the consumer, information density; which refers to the total amount and quality of information available to all consumers, and stakeholders, personalization/ and Customization; this component refers to allowing personalized messages to be delivered to consumers, and social technology; which refers to using content generation, distribution, and supporting social networks. To achieve those requirements, Laudon and Traver suggests that implementing E-banking requires the banking transactions to be conducted everywhere, at all

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times, and cross cultural national boundaries taking into consideration global banking and internet standards. In addition to the ability of technology to handle with customer dialogues and messages; which may include all types of presentations, video, audio, and so forth. Laudon and Traver adds that; the used technology must have the ability to handle with huge amount of data in all time including peak time using scalability, and handle with the changes of the delivered message based on a user's perspective.

To access a financial institution's online banking facility, a customer with internet access would need to register with the institution for the service, and set up a password and other credentials for customer verification. The credentials for online banking are normally not the same as for telephone or mobile banking. Financial institutions now routinely allocate customers numbers, whether or not customers have indicated an intention to access their online banking facility. Customers' numbers are normally not the same as account numbers, because a number of customer accounts can be linked to the one customer number. The customer number can be linked to any account that the customer controls, such as cheque, savings, loan, credit card and other accounts.

The customer visits the financial institution's secure website, and enters the online banking facility using the customer number and credentials previously set up. The types of financial transactions which a customer may transact through online banking usually includes obtaining account balances and list of latest transactions, electronic bill payments, and funds transfers between a customer's or another's accounts. Most also enable a customer to download copies of statements, which can be printed at the customer's premises (with some banks charging a fee for mailing hardcopies of bank statements). Some banks also enable customers to download transactions directly into the customer's accounting software. The facility may also enable the customer to order cheque-books, statements, report loss of credit cards, stop payment on a cheque, advise change of address, and other routine transactions.

Advantages

There are some advantages on using E-banking both for banks and customers:

- Permanent access to the bank
- Lower transaction costs / general cost reductions
- Access anywhere
- No security problems

Safety Issues

Advanced Mobile Banking and Online Banking security are used to help to protect the customers' money. Security measures include one secure log-in for our apps, PIN's entry when banking online or on a mobile device, free security software and a Mobile and Online Banking Guarantee from the banking service provider. When the customer uses any of his/her Mobile Banking services, he/she automatically protected by our Mobile Banking Guarantee. If anyone becomes an innocent victim of fraud, the bank will cover any losses, no matter how much money is taken from the account.

Security Measures

There are various security token devices for online banking. Security of a customer's financial information is very important, without which online banking could not operate. Similarly the reputational risks to the banks themselves are important. Financial institutions have set up various security processes to reduce the risk of unauthorized online access to a customer's records, but there is no consistency to the various approaches adopted.

(1) The use of a secure website has been almost universally embraced.

(2) Though single password authentication is still in use, it by itself is not considered secure enough for online banking. The Banks are moved towards one time password (OTP) generation which will be valid for a very short time. Basically there are two different security methods in use for online banking:

The PIN/TAN system where the PIN represents a password, used for the login and TANs representing one-time passwords to authenticate transactions. TANs can be distributed in different ways; the most popular one is to send a list of TANs to the online banking user by SMS on registered mobile number. Another way of using TANs is to generate them by need using a security token. These token generated TANs depend on the time and a unique secret, stored in the security token (two-factor authentication or 2FA).

(3) More advanced TAN generators (chipTAN) also include the transaction data into the TAN generation process after displaying it on their own screen to allow the user to discover man-in-the-middle attacks carried out by Trojans trying to secretly manipulate the transaction data in the background of the PC.

(4) Another way to provide TANs to an online banking user is to send the TAN of the current bank transaction to the user's (GSM) mobile phone via SMS. The SMS text usually quotes the transaction amount and details; the TAN is only valid for a short period of time. Especially in Germany, Austria and the Netherlands as well as in India many banks have adopted this "SMS TAN" service. Usually online banking with PIN/TAN is done via a web browser using SSL secured connections, so that there is no additional encryption needed.

(5) Signature based online banking where all transactions are signed and encrypted digitally. The Keys for the signature generation and encryption can be stored on smartcards or any memory medium, depending on the concrete implementation .

Suggestions for Safe Banking

Banking System works hard to keep the customers safe online and on their mobile but there are a number of steps which should be taken by the customers for an extra layer of protection.

- Protect their computer and mobile devices with up-to-date security software and install regular security and software updates.
- Only official Mobile Banking apps should be used, e.g. Axis Bank app or SBI app from bank's official website.
- Never log in to Online Banking through a link in an email. Either type the address into the browser or bookmarks may be used.
- Created PINs or passwords should be complex so that, hard to guess. For example, creating the most secure passwords a mix of letters, numbers and symbols to be used. PIN or password should be changed immediately if felt that someone may have discovered it.
- The security details should not be shared with anyone and never to be written down or stored on mobile in a way that might be recognised by someone else.
- The PIN, password, PINs entry codes or full security details never to be given to anyone who calls the customer, and never revealed in an email or text message.
- Never trying to open any attachments or links in emails or texts that weren't expected or unsure about.
- Banks will never call the customer and ask them to transfer money to a new account, so such calls must

not be entertained. The banks must be updated with the latest mobile number so it could contact them if the banks spot any unusual or suspicious activity on the account of customer.

Comparison of E-Banking Adoption

Frequency by Customers on Bankers' Persuasion or by Own Initiative. It is noticed that 20 to 40 percent customers use E-banking services more frequently under the guidance of the bankers. It comes forth from the analysis that there is not enough of awareness in Indian customers regarding use of E-banking services and the guidance and persuasion by bankers help promote the use of such services amongst the customers.

Age-wise Preference of E-Banking Services

A review showing different age groups of customers availing E-banking services, exhibits that the middle age men (30 to 50 years of age) make the highest use, followed by the next in order is young age men (up to 30 years of age). It is noteworthy that women customers use such services relatively much less frequently.

Occupation-wise Preference of E-Banking Services

On the basis of occupations , the study reveals that professionals are at the top, business class makes the next user. Very small percentage of respondents holds the opinion that E-banking services are used by both service and business class and business class and professionals.

Improvements are also Recognized in the Respective Area of Banking through E-Banking as mentioned below

Retention Rate of E-banking Customers. Increase in Customers Velocity of Bank Customers Switching from Traditional to E-Banking Impact of E-banking on relations between the bankers and the customers. Impact of E-banking on Overall Performance of Banks Promotional Measures Used by Banks to Promote e-Banking .

Conclusion

Online banking brings real change in the banking sectors. The uses of E-banking will reduce the cost of operations and rush in bank since lesser customer will visit bank for the various services. It also brings us a step closure to the concept of ubiquity, i.e. the concept of anything anywhere.

Regarding bankers' perspectives on E-banking activities of customers, the study reveals that there is not much awareness in Indian customers regarding use of E-banking services. But, the guidance and persuasion by bankers does promote the use of such services amongst the customers. There is greater incidence of E-banking usage among the middle age men and women customers use such services much less frequently. Occupation-wise, the professionals, followed by business class, make more use of E-banking services. Adopted by banks to promote E-banking, the study discloses that banks mostly resort to the use of print media followed by internet, SMS on mobile, outdoor advertisements and television. Given the increased competition and pressures to cut expenses, banks need to attract and retain their customers by creating, maintaining and highlighting such attractive features of E-Banking. Moreover, the banks which are not providing E-banking till date can also gain valuable insights from the same. The willingness to use the E-Banking is directly related to the frequency of usage. There should be seminars/workshops/talks on the healthy usage of E-Banking, especially for those who are ATM or computer illiterates.

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