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APPLICATION OF INTERNET IN BANKING SERVICES

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Abstract: In the banking sector, various electronic delivery channels are increasingly used for delivering products and services at the convenience of customers at low cost. Internet banking is one among them. It is found from the study that users have awareness of various services in internet banking but do not use all services equally. This is because they perceive that all internet banking services are not equally relevant to them and feel unsafe to use internet banking. The study also made an attempt to understand the precautions taken by users for the safe use of internet banking and the results revealed that they take high precautions and hence their exposure to risk is likely to be less. Users do not have awareness about security features adopted by banks and the top three security features trusted by them are 'SMS alert', 'Verisign', and 'Automatic lockout on multiple incorrect password entry'. The problems encountered during internet banking service delivery were identified and some of these problems have negative effective on customer satisfaction.

Keywords: Internet banking, service quality, perceived usefulness, perceived risk, information technology

INTRODUCTION

Banking sector plays an important role in the development of an economy. The advent of Information Technology and its convergence with communication technology have drastically changed the landscape of banking services across the globe. The use of Information Technology in the banking sector has contributed to the emergence of more flexible and user friendly Self Service Banking Technologies (SSBT) to address the rapid and changing needs of banking customers. It has changed the face of global banking sector radically, altering the manner in which customers conduct their banking transactions. The private and foreign banks brought new technologies and rendered technology based world class quality services to customers through ATMs, Credit cards, Internet Banking and Mobile Banking. World class quality service in banking was mirage to Indian customers and the service of private and foreign banks was a delight for them.

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 (Henry, 2000 cited in Dube et.al.,2009). Thus Internet Banking is the use of internet by bank customers for transacting their banking transactions. The cost of handling a banking transaction at a traditional branch is estimated to be 100 times higher than on the internet, so Internet Banking will soon expand (Renato, 1998). The main advantage of Internet Banking for banks is that the cost per transaction is even lower than those of an ATM.

Internet Banking is a product of e-commerce in the field of banking and financial services. The total value of e-commerce transactions in India was about Rs. 450 crores in the year 1999 – 2000. But the total value of e-commerce transactions stood at whopping Rs. 47,000 crores in 2011(Kaur and Joshi, 2012). The availability of access to computers/internet is a pre-requisite for the growth of e-commerce transactions. By 2015, based on existing projections, India with 120 million users has the third largest internet user base in the world, is projected to hit 350 million, catapulting it a global ranking of 2, with the fastest rate of growth (Shalini, 2012, Sept.30).

EVOLUTION OF E-BANKING

Indian banks made one step forward with the implementation of Total Branch Automation (TBA) in the late 1980s. The use of Information Technology in the banking sector traces its roots to the report of the Rangarajan Committee appointed in July 1983 on mechanization in banking industry. The committee recommended computerization and installation of Advanced Ledger Posting Machines (ALPM) at the branch, regional and head offices of banks. Information Technology revolution in Indian banking industry gained momentum with the entry of new private sector banks, which came into existence as per the recommendations of the Narasimhan Committee in 1991. Internet facilitated banks to create their own web pages and customers can access these web pages through the web browsers by siting at home. This kicked off online banking way back in 1996. CBS (Core Banking Service) lets banks offer 'AAA' (Anywhere, Anytime and Anyhow) services to their clientele. State Bank group brought all their branches under CBS by the end of 2009 and 85.9 percent of the branches of all other nationalized banks are brought under CBS by the end of 2010. (Table 2.1). Among the public sector banks, it is the State Bank group that made a quantum leap in terms of the number of branches computerized. SBI group achieved almost 100 per cent computerization in 2006 while other nationalized banks could achieve only 68.5 percent (Table 2.1). SBI group brought all its branches under Core banking solution in 2009 while other nationalized banks are yet to achieve this, but are on the verge of 100 per cent computerization and core banking.

Table 2.1 Computerization in Public Sector Banks

	Years					
	2005	**2006**	**2007**	**2008**	**2009**	**2010**
State Bank Group:						
Fully computerized branches (1+2)	97.2	99.9	100	100	100	100
1. Branches under CBS	13.2	50.1	67.2	95.0	100	100
2. Branches already fully computerized	84.0	49.8	32.8	5.3	0	0
Other nationalized banks						
Fully computerized branches (1+2)	60.5	68.5	79.9	92.3	95.7	96.9
1. Branches under CBS	10.1	20.5	35.4	56.6	81.4	85.9
2. Branches already fully computerized	50.4	48.0	44.5	35.7	14.3	10.9

Source: Report on Trend and Progress of Banking in India – Various years

Banking is becoming more of a capital – intensive, fixed cost industry and less of a labour intensive, variable cost industry. With the rapid penetration of mobile phones in India, banks are now focusing to deliver banking service, via mobile phones, what is often referred to as Mobile banking.

THE CONCEPT OF E – BANKING

E – Banking is an umbrella term for the process by which a customer may perform banking transactions electronically without visiting a brick and mortar institution. It is a generic term encompassing internet banking, telephone banking, mobile banking etc. In other words, it is a process of delivery of banking services and products through electronic channels such as telephone, internet, and cell phone etc. E – banking means offering, supplying, and delivering banking products and services through various electronic delivery channels via electronic devices. It has been transformed by the internet – a new delivery channel that has facilitated banking transactions for both customers and banks. E – Banking is a brew of services that embody internet banking, mobile banking, ATM kiosks, Fund

Transfer System, Real Time Gross Settlement (payment and allotment system), credit/debit/smart/kisan cards, cash government services as well as data warehousing, operational interpretation for management information system.

REAL TIME GROSS SETTLEMENT (RTGS)

The advent Electronic Fund Transfer (EFT) facility has nearly done away with the time lag in making monetary transactions. RTGS is a mechanism transferring funds from one bank to another on a 'real time' and on 'gross' basis. A real time settlement means that payment transactions are settled as soon as they are processed. Gross settlement means that the settlement of funds occurs on a transaction by transaction basis without netting debits against credits. The entries are made in the books of RBI and an entry once made is final and irrecoverable. Under RTGS, the minimum amount of fund transfer is Rs.2 lakhs and there is no limit to the maximum amount. RTGS transactions are inter bank as well as between customers through bank accounts. The growth of RTGS transactions during the period from 2004-2005 to 2011-2012 is depicted in table 3.1.

Table 3.1 Year-wise RTGS (Both inter Bank and Customer) Transactions

Years	Volumes(000s)	Growth rate (%)	Values(Rs. Crores)	Growth rate (%)
2004-2005	460	-	4,066,184	-
2005-2006	1,767	284.13	11,540,836	183.82
2006-2007	3,876	119.35	18,481,155	60.14
2007-2008	5,840	50.67	27,318,330	47.82
2008-2009	13,366	128.87	32,279,881	18.16
2009-2010	33,241	148.70	39,453,359	22.22
2010-2011	49,300	48.31	48,487,234	22.90
2011-2012	55,000	11.56	N.F	-
AAGR		**113.08**		**59.18**

Source: Compiled from RBI annual reports- various years. N.F – Not Found

RTGS volumes registers a remarkable 120 times increase in volumes from 2004-2005 to 2011-2012 with an AAGR of 113.08 % the fast growth in volumes indicates the increasing popularity of RTGS among the banking customers.

NATIONAL ELECTRONIC FUND TRANSFER (NEFT)

NEFT, introduced in October 2005, is a nation wide electronic payment system that uses a secure mode of transferring funds from one bank branch to another bank branch. NEFT uses the Public Key Infrastructure (PKI) technology to ensure end – to – end security and rides on the INdian FInancial NETwork (INFINET) to connect the bank branches for electronic transfer of funds. For being part of the NEFT funds transfer network, a bank branch has to be NEFT enabled. There is no limit – either minimum or maximum – on the amount of funds that could be transferred using NEFT. The NEFT system can be used only for remitting Indian Rupees between the participating bank branches in the country. Individuals, firms or corporate maintaining accounts with a bank branch can transfer funds using NEFT. Those who do not have a bank account (walk-in customers) can also deposit cash at the NEFT enabled branch with instructions to transfer funds using NEFT.

ELECTRONIC CLEARING SERVICES (ECS)

ECS is mode of electronic fund transfer from one bank account to another bank account through the clearing houses of RBI. This is normally for bulk transfers from one account to many accounts or vice – versa in the form of ECS – credit and ECS – debit. The ECS user has to prepare a list of beneficiaries to whom payments are to be made and hand over to one of the approved clearing house. There is no value limit on the amount of individual transactions under this service.

ECS (credit) is used when an institution is required to make bulk or repetitive payments in the form of dividend to shareholders, interest to investors, salary/ pension to employees etc, ECS (debit) is used when an institution is required to recover an amount, by raising a debit, at a prescribed frequency from many customers in the form of telephone or electricity charges, house tax, water tax, loan installments etc. The ECS user has to collect an authorization which is called ECS mandate for raising such debits.

CREDIT CARDS AND DEBIT CARDS

Credit card is a mechanism by which the card holder can make purchases with out immediate cash payments. It enables the card holders to avail credit card facilities from the issuing banks for a specified period of time without any security. A debit card can be used to withdraw cash from a bank like an ATM card and it can also be used at stores to pay for goods and services in place of a cheque. Debit card allows the holder to spend only what is in his account. Table 3.4 shows the volume and value of debit card transactions during the period from 2007 – 2016

Table 3.4 Volume and value of Debit Card Transactions (2007 – 2016)

	Volume	Value
2007	25 billion	$2.56 trillion
2010	37.9 billion	$ 1.4 trillion
2013	47 billion	$1.82 trillion
2016	69.5 billion	$2.56 trillion

Source: Secondary data

CHEQUE TRUNCATION

Cheque truncation is the process of stopping the flow of physical cheque issued by a drawer at some point en-route to the drawee branch. Instead, an electronic image of the cheque is transmitted to the drawee branch along with relevant information. Images of cheques are taken using scanners. It thus obviates the need to move the physical instruments across branches. It speeds up the process of collection of cheques resulting in better service to customers, reduces the scope for clearing-related frauds or loss of instruments in transit, lowers the cost of collection of cheques, and removes reconciliation-related and logistics-related problems.

AUTOMATED TELLER MACHINE (ATM)

A major technological development, which has revolutionized the delivery channel in the banking sector, has been the Automated Teller Machine (ATMs). ATMs particularly off site ATMs, act as substitutes for bank branches in offering a means of anytime cash withdrawal to customers. ATM is a device used by bank customers to process account transactions. ATMs allow customers to do many branch banking functionalities like cash withdrawal, mini statement of transactions, application for cheque books etc. To operate an ATM, the customer should posses a valid ATM card issued by a bank and need to know a secret PIN (Personal Identification Number) code.

ATMs were initially introduced as cash dispensers but now banks offer a number of Value Added Services (VAS) through ATMs such as purchase of mobile recharge cards and new internet connection, payment of donations to temple and for charity, payment of utility bills, purchase and sale of mutual funds, booking airline and railway tickets, payment of tax, money transfer and internet banking through ATM etc.

HSBC was the first bank to introduce ATM in India in 1987. Later new private sector banks have taken the lead in introducing ATMs in a big way and the public sector banks also pursued the installation of ATMs all over the country. The following table 3.6 shows the bank wise ATMs in India for April 2018

Table 3.6 Bank wise ATMs in India for April 2018

		Automated Teller Machine	
Sl. No.	Bank Name	On – Site	Off - Site
1	Allahabad Bank	844	265
2	Andhra Bank	3,194	816
3	Bank of Baroda	3,428	4,918
4	Bank of India	3,328	4,095
5	Canara Bank	5,082	4,248
6	Central Bank of India	3,426	1,463
7	Corporation Bank	2,355	751
8	Indian Bank	2,717	647
9	Indian Overseas Bank	2,238	755
10	Punjab National Bank	5,424	4,245
11	Syndicate Bank	3,880	398
12	Union Bank of India	4,545	3,099
13	State Bank of India	26,343	32,949
14	Axis Bank Ltd.	2,596	11,053
15	City Union Bank	923	706
16	HDFC Bank Ltd	5,874	6,764
17	ICICI Bank Ltd	5,244	9,135
18	Karur Vysya Bank Ltd	766	1,032
19	Tamilnad Mercantile Bank Ltd	467	666
20	The Laxmi Vilas Bank Ltd	427	595

Source: Secondary data

TELE BANKING

Tele banking is another form of technology enabled banking service which provides the facility of 24 hour banking to customers. Most of the banking functions except cash withdrawals or deposits could be carried out by a customer using a telephone. Tele banking services function is based on a technology known as Interactive Voice Response System (IVRS) available with the bank computers. The customer has to dial a phone number (which is connected to bank computers) provided by the bank at any time and enquire balances or transaction details and to transfer funds between one account to another.

MOBILE BANKING

Mobile banking or M-Banking is a delivery channel which opened up during the late nineties and with the introduction of 3G mobile telephony that allowed accessing internet using a mobile phone in the early 2000. Mobile banking is an extension of Internet Banking. The limit for mobile banking transactions without end – to – end encryption has been increased to Rs. 5,000 from the earlier limit of Rs. 1,000 with effect from May 4, 2011. (Killawala, 2011,May 01, p.4). The Reserve Bank of India issued operating guidelines to banks for mobile banking transactions on October 8,2008, which were reviewed and further relaxed on December 4,2009. The RBI has authorized 46 banks to offer mobile banking services to their customers and 33 banks have commenced mobile banking.

INTERNET BANKING

Internet in gaining popularity as a delivery channel in the banking sector. Internet Banking has become a competitive necessity for banks as competitors are just one click away. With the increasing use of technology in the banking sector, customers can change their banking service provider much faster than in the traditional banking set up if they are not satisfy with the products, prices or services offered by a particular bank. Internet banking refers to a banking transaction routed through internet. It is a method of banking that allows a customer to perform banking transactions through a banks website hosted in the internet.

Internet banking is a product of e-commerce in the field of banking and the financial services. In what can be described as Business – To – Customer (B2C) domain for banking industry. It offers different online services like balance enquiry, requests for cheque books, recording stop – payment instructions, balance transfer instructions, account opening and other forms of traditional banking services.

FEATURES AND FUNCTIONS OF INTERNET BANKING

The features and functions of Internet Banking are summarized under the following heads:

PAYMENTS

These include: Inter account fund transfer, payment or other personal account, transfer of funds to credit card account, foreign transfer: Draft or SWIFT, recharge mobile phones, payment of bills, e – ticketing, shop online.

REQUESTS/APPLICATIONS

These include: Balance enquiries, interim statements, cheque book orders, stop lost/stolen cheques, remove 'Stop Cheque' request, apply for a credit card limit change, change ATM card pin, product and rate information, update personal profile, apply for a customer loan, download application forms, EMI calculations for loan, standing order transactions.

VIEW ONLY

Check balance, View statements/account, and historical records

ACCOUNT CONTROL

Accounts amendment, order cheque books, transfer funds, pay bills to third parties, standing orders/direct debit, order/print statements, send messages, pay credit card bills

NEW SERVICES

Apply for loans, open current accounts, open saving accounts, apply for credit cards, apply for mortgages, and apply for insurance, reconciliation/integration

TYPES OF INTERNET BANKING

There are three functional level/kinds of internet banking that are currently employed in the market place. These are:

INFORMATIONAL (WEBSITES)

This has been identified as the first level or basic level of internet banking. Typically that bank has the marketing information about the banks, products and services on a standalone saver. The risk is very low as informational systems typically have no path between the server and the bank's internal network.

COMMUNICATIVE/SIMPLE TRANSACTIONAL (WEBSITES)

This type of Internet Banking allows some interaction between the bank's system and the customer. The interaction is limited to e-mail, accounting inquiry, loan application or static file updates (names and address changes). It does not permit any fund transfer. Virus controls also become much more critical in this environment.

ADVANCED TRANSACTIONAL (WEBSITES)

This level of Internet Banking allows banks customers to electronically transfer funds to/ from their accounts. Since a path typically exists between the server and the bank's or outsourcer's internal network, this is the highest risk architecture and must have the strongest controls.

BOON SIDE OF INTERNET BANKING

Both customers and banks benefit from the use of internet as a channel for receiving/delivering banking services. Some of the advantages of using internet banking as far as customers are concerned are:

CONVENIENCE

Customers have access to Internet Banking on all days round the clock (24×7) and they are only a click away from banking services.

LOW TRANSACTION COST

By using internet banking customers can save cost of banking transactions in terms of saving in travelling expenses as the customers need not have to be physically present in bank branch.

UP- TO- DATE INFORMATION

Customers can have up to date information about their accounts without the help of bank staff as their accounts are updated as soon as a transaction takes place

EFFECTIVENESS

Internet Banking sites of banks offer facilities such as account aggregation, stock quotes, rate alerts and portfolio managing programmes to provide the latest information to customers so that they can safeguard their financial assets more efficiently

NEED FOR PROMOTING INTERNET BANKING IN INDIA

Table 7.1 gives the number of people per branch in different countries. It is evident from the table that the number of customers handled per branch in India is 2.34 to 9.45 times higher than the number of customers handled per branch in developed countries. Therefore, it is the need of the hour to promote Internet Banking in India to control customer traffic in bank branches, besides a host of benefits that accrue to banks by offering Internet Banking services.

Table 7.1 People per Branch in Different Countries

Country	People per Branch
France	1,587
Germany	1,945
US	2,720
Japan	3,968
Hong Kong	4,545
Sweden	4,672
Canada	6,410
India	15,000

Source: Marakarkandy and Daptardar (2017)

CONCLUSION

Internationally, the last two decades or so have witnessed significant changes in the profile of the banking sector. India too has responded to this change. The advent of internet has led to an electronic revolution in the global banking sector. No other technology since the invention of electricity has brought about such as a gargantuan transformation in human lives. Rigorous use of banking technology in the banking sector leads to the emergence of e-banking. E – Banking is becoming immensely popular globally and India is no exception to it. E-banking developments have vastly altered the banking landscape in India. Exposure to technology has empowered the retail customers and in today's wired world quick services is demanded by one and all. Therefore, e-banking has become an indispensable reality for almost of all Indian banks.

The rising volumes of e-banking transactions in India may be viewed as an indication that banking customers, particularly the young, have almost tasted the benefits of e-banking services. Though, it is a highly cost effective delivery channel, the risk associated with the kind of banking should not be overlooked.

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