

# An Analytical Study of Innovative E-Banking Scenario in India

<sup>1</sup>Dr. Dhruva Charan Hota and <sup>2</sup>Dr Haradhan Saha

<sup>1</sup>Associate Professor, Department of Commerce, MBB College, Agartala, West Tripura (India)

<sup>2</sup>Associate professor, Department of Education, Government Degree College, Santirbazar, South Tripura (India)

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## ABSTRACT

*During the last two decades, with the advent of technological changes, the Indian Banking Sector has witnessed tremendous developments in the mode of offering products and services to their customers. The banking sector operates in a highly globalized, liberalized, privatized and competitive environment. E-banking has become a necessary survival weapon and has been fundamentally changing the banking industry worldwide. Technology allows the banks to offer new products, operate more efficiently, raise productivity, expand geographically and compete globally. After the demonetization and drive for a cashless economy the popularity of e-banking in India has gained momentum. The rapid advances in information technology and telecommunication, e-banking has become a strategic weapon for the banks to remain profitable. The inherent benefits that accrues both to the banks and its customers in form of safe, simple, quick and cost effective nature has empowered its customers and banks to make better investment decisions. However, banks and customers working on e-banking environment are exposed to many security risks on account of usage of computers and IT enabled services. This research paper would examine the various types of innovative e-banking services and products, practical aspects of its operation, trends and progress made by Indian banks in adoption of technology.*

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## 1. Introduction

The advancement and revolution in the Information and Communication Technology has brought out many changes in the area of Banking and Finance. During the last two decades, with the advent of technological changes, the Indian Banking Sector has witnessed tremendous developments in the mode of offering products and services to their customers. The banking sector operates in a highly globalized, liberalized, privatized and competitive environment. Banks across nations have been moving to the e-commerce and e-banking environment. Apart from the traditional banking services, now-a-days Indian banks are offering many innovative products and services through ATMs, Credit and Debit Cards, Internet Banking, Core Banking Solutions( CBSs), Electronic Clearing System(ECS), Electronic Fund Transfer ( EFT), National Electronic Fund Transfer (NEFT), Real Time Gross Settlement (RTGS) etc. Electronic Banking (popularly known as E-banking) has become inevitable in the banking sector as it accrues many benefits to the banks as well as its customers. However, banks and customers working on e-banking environment are exposed to many security risks on account of usage of computers and IT enabled services. It is believed that the survival, success and growth of banks would largely depend on the adoption of latest technology.

## 2. Meaning and Definition of E-banking:

**Online banking** also known as **internet banking, e-banking or virtual banking**, is an electronic payment system that enables customer of a bank or other financial institution to conduct a range of financial transactions through the financial institutions website. (Wikipedia)

According to the English Oxford Living Dictionaries e-banking is defined as 'a method of banking in which the customer conducts transactions electronically via the internet.'

'E-banking is defined as the automated delivery of new and traditional banking products and services directly to customers through electronic, interactive communication channel. E-banking includes the systems that enable financial institution customers, individual and businesses, to access accounts, transact business or obtain information on financial products and services through a public or private network, including the internet.' (source:<http://ithandbook.ffiec.gov/it-booklets/e-banking/introduction/definition-of-e-banking.aspx>)

## 3. Review of Literature:

**B.Janki (2002)** in his article analyzed how technology is affecting employee's productivity. Public Sector Banks will need to use technology to improve their operating efficiency and customers services. Technology is an enabling tool and banks actually achieve what they want to achieve will be determined by the drive and motivation of their workforce and response of the staff.

**Jalan, B. (2003):** 'Information Technology revolution has brought about a fundamental transformation in banking industry. Perhaps no other sector has been affected by advances in technology as much as banking and finance. It is the most important factor for dealing with the intensifying competition and the rapid proliferation of financial innovations.'

**Arora, K. (2003)** 'highlighted the significance of bank transformation. Technology has a definitive role in facilitating transactions in the banking sector and the impact of technology implementation has resulted in the introduction of new products and services by various banks in India.'

**Malik, S (2014)** concluded that Indian banking industry has been facing numerous challenges. The challenges are increasing competition, pressure on spreads and systematic changes to align with international standards. This requires the

banks to re-evaluate its strategies and processes in order to remain competitive in this dynamic environment. Banks have to adopt a holistic approach to fulfill the ever changing needs of customers and to seize a better market share. This calls for in-depth analysis through devising new strategies, products and services. Strategizing organizational effectiveness and operational efficiency will govern the survival, success and growth in the banking sector.

**Chauhan et. al. (2015)** in their study on 'Internet Banking: Challenges and Opportunities in Indian Context' presents an overview of the current scenario of internet banking in the Indian Context. The paper also highlights the challenges and opportunities in internet banking. It was observed that most of the banks have already implemented the e-banking facilities as these facilities are beneficial to both the banks and the customers. The important benefits that accrues to the banks are increased profitability, cost effective mechanism, virtual banking, improve customer relationship, eco-friendly image or concern of the banks towards protecting the environment etc. Internet banking also offers many advantages to their customers through 24\*7 availability, ease and convenience in operation, saves lot of time, money and energy etc. The most important challenges of internet banking are security risk and privacy risk attached to it.

#### 4. Objectives of the Study

- To identify various innovative e-banking services or products offered by Indian banks.
- To present basic ideas and operational aspects of innovative services provided by the Indian banks.
- To study and analyze the progress made by Indian banks in adoption of technology.
- To study the opportunities and challenges faced by Indian banks in adoption of technology.

#### 5. Research Methodology

The present study is basically analytical in nature. It is based on secondary sources of data. The important sources of information have been collected from Reserve Bank of India Reports, Bulletins, reputed journals, newspapers, magazines and websites. RBI's Report on Trends and Progress of Banking in India 2015-16 has also been referred.

#### 6. Conceptual framework, data analysis and interpretation

Banking operations over the years and decades have witnessed many changes and have been adopting from time to time new innovations. The technological revolution especially in the Information and Technology front has changed the functioning of banks. In today's globalized competitive business environment banks are trying to have competitive edge by using the latest technology to cut operating cost and to increase efficiency.

Indian banks are offering a number of e-banking products and services to their customers. The most important and popular e-banking services provided are ATM, Debit Cards, Credit Cards, POS, ECS, Mobile Banking, EFTS like NEFT and RTGS. Indian banks are also providing many other value added innovative services which is kept outside the purview of our discussion. This project would explore about the various types of innovative e-banking services and products, basic ideas including the practical aspects of operation and analyzing the progress made by Indian banks in adoption of technology through secondary sources of data obtained and compiled from the RBI website.

##### 6.1: Automated Teller Machines (ATMs):

ATM is a modern device introduced by the banks to enable their customers to withdraw money anytime anywhere (24x7) without visiting the branch physically. The first ATM service in India was introduced in 1987 by Hongkong and Shanghai Banking Corporation (HSBC) Bank which is basically a Foreign Bank. Subsequently all public sector and private sector banks also started providing ATM facilities to their customers. ATM services and facilities extended through ATMs have witnessed tremendous improvement in the banking sector. Initially, it was meant for cash withdrawal facility. But later on customers can use the for transfer of money from ATM to ATM, can do shopping through Point Of Sales (POS), can pay utility bills like electricity, telephone, Insurance premium etc., customers can also book railway, flight tickets etc. and the like through ATM. Therefore, we can say that ATM is the most popular and the most convenient delivery channel in our country. This is being substantiated in **Table-1** as presented below:

**Table-1: Growth of Automated Teller Machines (ATMs) of Scheduled Commercial Banks in India**

Period Ending	On-site	Off-site	Total	Percentage of increase
March 2009	24,645	19,006	43,651	-
March 2011	40,729	33,776	74,505	170.70
March 2013	55,760	58,254	1,14,014	261.20
March 2015	89,061	92,337	1,81,398	415.60
March 2017	1,09,809	98,545	2,08,354	477.30

Source: RBI

Table-1 as shown above indicates the progress made by ATMs of Scheduled Commercial Banks for the period 2009-2017. However, the data has been given with one year gap. On average terms the On-site ATMs are more than Off-site ATMs with the exception of 2015. On-site ATM means ATM installed in close proximity to the bank's branch. Off-site ATM refers to ATM installed away from the concerned bank's branches. The

above Table also reflects the percentage of growth in number ATMs over the last eight years taking 2009 as the base year. The growth statistics indicates an increasing trend in number of ATMs installed by banks.

##### 6.2: Point of Sales (POS)

A POS or Point of Sale generally means any location where a sale or transaction may take place. A typical POS system consists of a desktop computer, laptop, tablet or

Smartphone that runs the actual software through which receipts and payments are usually made online.

**Table-2: Growth of Point of Sales (POS) of Scheduled Commercial Banks in India**

Period Ending	On-line	Off-line	Total	Percentage of increase
March 2013	8,40,983	13,307	8,54,290	-
March 2015	11,26,389	346	11,26,735	131.90
March 2017	2, 52,55,959	2,799	252.58,758	2956.70

Source: RBI

The above table depicts the trends and progress of POS in Scheduled Commercial Banks of India. Table -2 shows that the number of Online POS has been increased in multiple numbers of times over the last five years. The overall percentage of POS in scheduled commercial banks increased by 131.90% in March 2015 in comparison with March 2013. Interestingly in March 2017 it is increased by 2956.70% by taking 2013 as the base year. This is basically due to the demonetization of rupee 500 and 1,000 notes announced by Government of India on 8<sup>th</sup> November, 2016. The value of transactions through POS has been presented in Table-3.

### 6.3: Credit Cards and Debit Cards

Now-a-days most of the banking transactions are made through electronic means like the Debit Cards and Credit Cards. A debit card allows the customers to have the advantages of anytime anywhere banking through the ATMs or through the POS transactions. Commercial banks issues Credit Cards to their customers through which monies can be withdrawn from ATMs or transactions can be made for purchasing over the POS or through online without having balances in their accounts.

**Table-3: Value of transactions made through of Debit Cards and Credit Cards**

Period	CREDIT CARDS		DEBIT CARDS			
	ATM (Rs. in Millions)	POS (Rs. in Millions)	Total	ATM (Rs. in Millions)	POS (Rs. in Millions)	Total
March 2013	1,492.85	1,11,217.42	112,710.27	15,56,405.61	66,873.05	16,23,278.66
March 2015	2,343.98	17,89,987.96	17,92,331.94	19,87,479.84	1,08,283.20	20,95,763.04
March 2017	106223627	2242.6	106,225,869.60	27,11,72,292	22,59,457.4	2734,31,749.4

Source: RBI

The above table highlights the position of values of debit cards and credit card transaction made during the month of March 2013, 2015 and 2017 respectively. Table-3 reveals that the value of transactions effected through debit cards is more than the value of transactions through credit cards. Debit cards have been more popular among the customers of commercial banks in India. During a gap of two years (i.e. in 2015 and 2017) the value of transactions made through debit and credit cards shows an increasing trend over the last five years.

### 6.4: Electronic Clearing Systems (ECS)

Electronic Clearing System is one of the earliest forms of funds transfer system to effect payments like utility bills of like

electricity, telephone, dividends, interest etc. ECS helps corporate, government departments, public sector undertaking, and utility service providers to receive and pay bulk payments. It also helps the individual customers for paying the utility bills by issuing standing instructions to their bankers. The utility company (service provider) based on the ECS mandate given by the client, would advise the client's bank to debit the bill amount to the clients account on the due date and transfer the amount to the company's bank account. ECS is divided into ECS (credit) and ECS (debit).

**Table-4: Volume and Value of Electronic Clearing Systems (ECS) Transactions of Scheduled Commercial Banks**

Period	ECS ( CREDIT)		ECS ( DEBIT)	
	Volume in Millions	Value in Billons	Volume in Millions	Value in Billons
March 2013	9.99	191.59	15.57	94.84
March 2015	4.83	127.10	18.84	145.63
March 2017	0.92	9.69	0.23	1.55

Source: RBI

Table -4 shows the volume and value of ECS transactions of scheduled commercial banks. In average terms the value and volume of ECS (credit) is greater than ECS (debit) in March 2017. The figures of March 2015 shows reverse trend.

From the above table it can be concluded that the popularity of ECS has been declining year after years.

### 6.5: Mobile Banking

Mobile Banking refers to the use of a Smartphone or other cellular device to perform online banking tasks such as monitoring account balances, transferring funds between accounts, bill payments and locating an ATM. It is a service

provided by a bank or other financial institutions that allows its customers to conduct financial transactions remotely using a mobile device. (Wikipedia)

**Table-5: Volume and Value of Mobile Banking Transactions of Scheduled Commercial Banks**

Period	Volume in Millions	Value in Billions
April 2013	6.33	.986
April 2015	19.78	188.69
March 2017	113.63	1730.39

Source: RBI

Table-5 presented above shows the volume and value of mobile banking transactions made during the month of March of 2013, 2015 and 2017 respectively. We have chosen the periods deliberately in order to know the trends and popularity of mobile banking transactions. In terms of the volume in April 2015 it is increased at least three times as compared to the volume that was in 2013. In March 2017 the volume of mobile banking transactions has been increased by five times as compared to April 2015. The value of mobile banking transactions in the recent years is increased substantially due to demonetization and government's initiatives towards a cashless economy.

#### 6.6: National Electronic Funds Transfer (NEFT)

NEFT stands for National Electronic Funds Transfer. For NEFT an account holder is required to avail internet banking facility for his/her account with transaction rights. NEFT is an innovative electronic media for effecting transfer of funds. Funds can be transferred to the beneficiary's account by furnishing full and correct details like beneficiary's correct name, correct account number, the branch and bank of the beneficiary and the IFSC code etc. NEFT operates in hourly batches. Currently there are 12 settlements from 8 a.m. to 7 p.m. on weekdays. Transfer of funds through NEFT is safe, quick and cost effective. An illustration regarding the charges for NEFT transactions is as appended below (exclusive of service tax).

Amount in Rs.	For Branch	For Internet Banking Channel
Up to Rs.10,000/-	Rs.2.50	Rs.2/-
Rs.10,001/- to 1,00,000/-	Rs.5.00	Rs.4/-
Rs.1,00,001/- to 2,00,000/-	Rs.15.00	Rs.12.-
Above Rs.2,00,000/-	Rs.25.00	Rs.20/-

In case of Retail Internet banking the maximum amount of NEFT transaction is Rs.10 lakhs and there is no minimum limit. For Corporate Internet banking the maximum amount of NEFT

transaction is Rs.50 lakhs for Vyapar and Rs.500 crores for Vistar.

**Table-6: Volume and Value of NEFT transactions of Scheduled Commercial Banks**

Period	Volume in Millions	Value in Billions
April 2013	40.66	247.96
April 2015	83.53	6043.75
April 2017	143.17	12156.17

Source: RBI

Table-6 reflects the position of NEFT transactions of scheduled commercial banks both in terms of volume and value during the month of April of 2013, 2015 and 2017. The table reveals an increasing trend of NEFT transactions over the years due to the advantage of safe, simple, quick and cost effective mode of transfer of funds.

#### 6.7: Real Time Gross Settlement (RTGS)

Real Time Gross Settlement (RTGS) is an important and popular electronic fund transfer system which is very faster,

safer, efficient and cost effective mode of transfer of funds. RTGS is an electronic payment system, where payment instructions are processed on a continuous or REAL TIME basis and settled on a GROSS or individual basis without netting the debits against credits. The settlement is done in the books of the Reserve Bank of India. The RTGS allows transfer of funds across banks on a real time basis. An illustration is appended below regarding the charges of RTGS transactions (exclusive of service tax). The minimum amount in a RTGS transaction shall be Rs.2,00,000/-.

Amount in Rs.	For Branch	For Internet Banking Channel
From Rs.2,00,000/- to Rs.5,00,000/-	Rs.25/-	Rs.20/-
Above Rs.5,00,000/-	Rs.50/-	Rs.40/-

Table-7: Volume and Value of RTGS Transactions of Scheduled Commercial Banks

Period	Volume ( in Millions)			Value ( in Billions)		
	Inter-bank	Customer	Total	Inter-bank	Customer	Total
April 2013	424219	6039055	6463274	15699.00	45362.00	61061.00
April 2015	355961	7541791	7897752	10323.29	54876.54	65199.83
April 2017	311728	9231352	9543080	14908.49	73603.70	88512.19

Source: RBI

Table-7 shows the volume and value of RTGS transactions made during the month of April of 2013, 2015 and 2017. An RTGS transaction has been classified as Interbank and through the customer. The volume and value of growth in the last five years has been increased remarkably. This substantiates the popularity of electronic banking in India in case of scheduled commercial banks in India.

### 6.8: Immediate Payment Service (IMPS) and Payment Protection Insurance (PPIs)

Immediate Payment Service (IMPS) is an instant interbank electronic fund transfer service through mobile phones. It is

also being extended through other channels such as ATM, Internet Banking etc. Payment Protection Insurance (PPIs) also known as credit insurance, credit protection insurance or loan repayment insurance, that enables consumers to ensure repayment of credit if the borrower dies, becomes ill or disabled, loses a job or faces other circumstances that may prevent them from earning income to service the debt.

The popularity of use of innovative e-banking services has been substantiated by the data as reflected in the following table:

Table-8: Digital Drive Gathers Momentum

	2017(VOLUME OF TRANSACTIONS IN MILLION)			2016(VOLUME OF TRANSACTIONS IN MILLION)		
	JAN	FEB	MAR	JAN	FEB	MAR
Debit Cards	1,040.97	944.32	981.28	817.51	796.69	844.59
IMPS	62.42	59.75	67.41	22.48	23.86	25.98
PPIs	295.8	280.02	342.09	65.25	65.37	72.00
	VALUE OF TRANSACTIONS (IN ₹ BILLION)			VALUE OF TRANSACTIONS (IN ₹ BILLION)		
Debit Cards	2,006.48	2,286.82	2,616.45	2,327.99	2,259.57	2,342.82
IMPS	491.25	482.21	564.68	165.59	169.67	198.73
PPIs	110.01	96.28	106.77	49.09	49.98	59.72

Source: RBI &amp; economictimes.indiatimes.com

Table-8 presented above leads us to conclude that there has been continuous growth of adoptability of e-banking services over the years particularly in the form of Debit cards, IMPS and PPIs.

### 7. Conclusion

E-banking has become a necessary survival weapon and is fundamentally changing the banking industry worldwide. Technology allows the banks to offer new products, operate more efficiently, raise productivity, expand geographically and

compete globally. After the demonetization and drive for a cashless economy the popularity of e-banking in India has gained momentum. The rapid advances in information technology and telecommunication e-banking has become a strategic weapon for the banks to remain profitable. The inherent benefits that accrues both to the banks and its customers in form of safe, simple, quick and cost effective nature has empowered its customers and banks to make better investment decisions.

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