

BANKING SECTOR IN INDIA – A STUDY ON EXISTING AND EVOLVING TECHNOLOGIES

A. Karthikadevi¹, Dr. K. Alagar²

¹Assistant Professor in Commerce, E.M.G Yadava Women's College.

²Associate Professor in Commerce, Yadava College.

Abstract: *The Reserve Bank of India has triggered reforms in the banking sector by introducing effective strategies to reduce government monopoly, while improving the working of the banks. Electronic Clearing Service-Credit Clearing facility should be made available to all corporate bodies or Governments institutions for making repetitive low value payment like dividend, interest, refund, salary, pension or commission. In last few years, the Indian banking sector has realized the need of digital technologies and is rapidly moving to embrace digital banking. Globalisation is shrinking the size of the world. Required steps must be taken for sound management of banking technology.*

Key words: *Growth of Existing Technologies in Banking Sector, Electronic Funds Transfer, Electronic clearing service, Card Payments.*

INTRODUCTION:

During the Pre-LPG (Liberalisation, Privatisation and Globalisation) era, banks performed all their functions manually, with little support from computers. As their services were labour-intensive, banks had to bear heavy established costs dawn of economic liberalization in 1991. But the Reserve Bank of India has triggered reforms in the banking sector by introducing effective strategies to reduce government monopoly, while improving the working of the banks. In 1993 – 94, the RBI allowed the entry of private sector and foreign banks into the banking industry, leading to greater competition and enhanced performance with the aid of technology advancements. This has forced the public sector banks to provide prompt and reliable customer services along with a variety of hi-tech banking products or services.

NEED FOR THE STUDY:

The world has entered an era of 'Digital Darwinism', a time where technology and society are evolving faster than many organisations to adapt to the changes. The emergence of the digital five forces – Social, Mobile, analytics, Cloud and Internet of Things (IoT) – is creating new and valuable sources of business information, ways to interpret data and the means to do so cost-effectively. Hence this study attempts to analyse the growth of existing technologies in banking sector and to make aware of evolving technologies in banking sector.

OBJECTIVES OF THE STUDY:

The main objectives of the study are:

- To analyse the growth of existing technologies like ATMs and Electronic Payment System.
- To exhibit the evolving technologies in banking sector.

Growth of Existing Technologies in Banking Sector:

The banks have provided options to the customers to carry out on their own the required transactions through Automated Teller Machines (ATMs), mobile banking and internet banking. This provided the option to the customers to transact in traditional way or through the tech-way. The AAA mantra of Anytime, Anywhere and Anyhow is implemented through ATMs, mobile banking and internet banking.

Table 1: No of ATMs at the end of September 2017

Year	Onsite ATMs	Offsite ATMs	Total
2012	51600	54184	105784
2013	71690	69826	141516
2014	93119	83291	176410
2015	97793	95975	193768
2016	107758	98102	205860
2017 (Upto Sep)	110196	97179	207375

Source: RBI Bulletin, 2017

It is noted that the number of onsite and offsite ATMs are increasing year by year.

Mobile Banking:

Mobile banking is a system of providing services to a customer to carry out banking transactions on the mobile phone through a cellular phone service-provider. Banks have to provide facilities to their customers whenever they are in need and wherever they are. This facility is called as "Anywhere and Any moment Banking".

Internet Banking:

Internet banking enables a customer to perform banking transactions through the bank's website. This is also called virtual banking, net banking or anywhere banking. It is like bringing the bank to one's computer at the place and time of one's choice. This can be very useful, especially for banking outside bank hours through internet access. The number of customers who chose online banking as their preferred method of dealing with their finance is growing rapidly. Online banking usually offers features like electronic bill payment. There is a growing number of banks that operate exclusively online due to cost advantage compared to traditional banks.

Electronic Payment System:

A convenient way of making a purchase or paying for a service without holding cash or having to go through the process of completing a cheque and producing some form of acceptable identification is called an electronic payment system.

Table 2: Electronic Payments in India

Year	Total Electronic Payments	
	Volume (in lakhs)	Amount (Rs. in crores)
2011 – 12	25,586	10,66,46,610
2012 – 13	29,429	13,12,47,090
2013 – 14	37,111	14,99,57,000
2014 – 15	47,166	15,80,61,700
2015 – 16	70,466	17,23,42,500

Source: RBI Bulletin, 2017

It is inferred that there is a tremendous increase in electronic payments in India.

The following are the two new payment systems, which have been introduced by banks to expedite payments electronically.

- Retail Payments
- Large Scale Payments

Retail Payments Methods:

1. Electronic Funds Transfer
2. Electronic clearing service
3. Card Payments

Electronic Funds Transfer (EFT):

EFT is the funds in which one or more of the steps in the process that were previously done by paper-based technique are now done by electronic technique.

Table 3: Electronic Funds Transfer

Year	Electronic Funds Transfer (EFT / NEFT)	
	Volume (in lakhs)	Amount (Rs. in crores)
2011 – 12	2261	17,90,350
2012 – 13	3941	29,02,240
2013 – 14	6610	43,78,600
2014 – 15	9276	59,80,400
2015 – 16	12,529	83,27,300

Source: RBI Bulletin, 2017

It is observed that the volume and value of electronic funds transfer are in increasing trend.

Electronic Clearing Service:

Electronic Clearing Service-Credit Clearing facility should be made available to all corporate bodies or Governments institutions for making repetitive low value payment like dividend, interest, refund, salary, pension or commission. Electronic Clearing Service-Debit Clearing may also be introduced for pre-authorised debits for payments of utility bills, insurance premium and instalments to leasing and finance companies.

Table 4: Electronic Clearing Services

Year	Electronic Clearing Services (ECS)			
	ECS (Credit)		ECS (Debit)	
	Volume (in lakhs)	Amount (Rs. in crores)	Volume (in lakhs)	Amount (Rs. in crores)
2011 – 12	1215	1,83,780	1647	83,360
2012 – 13	1222	1,77,130	1765	1,08,310
2013 – 14	1525	2,49,200	1929	1,26,800
2014 – 15	1153	2,01,900	2260	1,74,000
2015 – 16	390	1,05,900	2248	1,65,200

Source: RBI Bulletin, 2017

From Table 4, it is concluded that the electronic clearance services has increased year by year upto 2014 – 15 but there was a sudden fall in the year 2015 – 16

Card Payments:

The use of electronic/online modes of payments for purchase of goods and services has been gaining significance the world over. The volume and amount of Point Of Sale transactions during the period 2011 – 2016 are shown in table 5.

Table 5: Card Payment in India

Year	Credit card payments		Debit card payments	
	Volume (in lakhs)	Amount (Rs. in crores)	Volume (in lakhs)	Amount (Rs. in crores)
2011 – 12	3,200	96,610	3,275	53,430
2012 – 13	3,966	1,22,950	4,691	74,340
2013 – 14	5,091	1,53,990	6,191	95,410
2014 – 15	6,151	1,89,900	8,081	1,21,300
2015 – 16	7,857	2,40,700	11,350	1,58,900

Source: RBI Bulletin, 2017

It is concluded that the users of both credit and debit cards are increasing.

Large Scale Payment – Real Time Gross Settlement System:

It is an electronic payment environment where payment instructions processed on a 'continuous' or 'Real time' basis and settled on a gross or individual basis without netting the debits and credits. This is basically a high value funds transfer mechanism

Table 6: Real Time Gross Settlements System

Year	Real Time Gross Settlements System	
2011 – 12	550	5,39,30,750
2012 – 13	685	6,76,84,100
2013 – 14	811	7,34,25,240
2014 – 15	928	7,54,03,200
2015 – 16	983	8,24,57,800

It is noted that even the large scale electronic payments are also welcomed by the customers without any hesitation.

Evolving Technologies:

In last few years, the Indian banking sector has realized the need of digital technologies and is rapidly moving to embrace digital banking. They are making considerable investment in creating digital infrastructure in order to offer various solutions like mobile banking, e-wallets and virtual cards, etc. The key innovations in digital banking are Digital-only/virtual Banking, Biometric Technology, Artificial Intelligence, Block chain Technology, Bitcoin and Robotice etc.,

- Digital-only bank provides end-to-end services through digital platforms like mobile, tablets and internet. It is paperless, branchless and signature-less banking offering 24*7 services to its customers. In India, the digital-only banking is based on Aadhaar infrastructure. The digital-only banks offer various services like account opening,

terms deposits, loans as well as financial products like insurance and mutual fund. While digital banking is simple and cost effective, there are still security risks.

- Innovations like Biometric technology allows the person to be identified uniquely by evaluating one or more distinguishing biological traits like face, hand, retina, voice and ear features. The use of biometric authentication can eliminate the requirement of multiple passwords and PIN codes. The Indian banking sector is also gradually adopting biometric authentication to provide simple and secure banking experience to its customers.
- Artificial Intelligence (AI) can provide quick and personalized services by dealing with each customer and focusing on their specific requirements. It can be used to collect information, automatically build models based on that information, inference and communicate in natural way. In India, only large banks are currently seeking to introduce AI in their services. The key components of AI are machine learning, computer vision, natural language progression and natural language generation. Indian banks are likely to use AI like machine learning to re-engineer back office processes.
- Robotics is a technology that mimics the actions of human performing simple rule-based processes. The use of robotics in the Indian banking sector though not yet widespread, is expected to gain ground in the coming years. Robotics is expected to automate processes which are repetitive, rule based and require less human judgement. Also, being scalable and cost effective, it could help automate processes with high transaction volumes. Presently, some Indian banks have started deploying robots to answer customer queries related to banking transactions, demat account, locker facility, fixed deposit, loan, etc. Apart from humanoid robots providing customer service, software robots are also getting deployed in functions such as retail banking operations, agri-business, trade & forex, treasury and human resource management to name a few.
- Globally, banks are seeking to use block chain technology (BCT) for operations such as money transfer, record keeping and others back-end functions. Block chain technology can be used in banking activities like secure document management, reporting, payments, treasury & securities and trade finance. Banking industry can benefit from block chain technology as it helps in fraud prevention, increasing the resilience of the bank's IT infrastructure and also increases transparency of processes. Besides these

advantages BCT is also cost efficient and provides auditability & provenance.

- Bitcoin is the decentralized digital currency as well as the decentralized peer-to-peer payment network that is powered by its users with no central authority. In India, the RBI hasn't yet authorized use of bitcoins and issued a press release on Feb 1, 2017, cautioning the users, holders and traders of bitcoins about the potential financial, operational, legal, customer protection and security related risks. Despite this, bitcoin exchange platforms like BTCX India Coinsecure, Unocoin and Zebpay have been developed in India.
- Banks can use google glass technology to locate the nearest bank branch/ ATM, check account balances and use video conferencing for technical support.
- Augmented Reality (AR) app is integration of digital information with the user's environment in the real world. In India, AR mobile app has been launched by a bank which lists all dining destinations, property lists, and shopping centres, bank ATMs, branches etc with real life pictures along with distance and directions.
- Installing Bluetooth beacons at bank branches could allow banks to integrate physical and mobile channels to provide effective communication. Although the adoption of beacon technology by Indian banks is very less, it is expected to increase going forward with many Indian companies engaging in beacon technology and growing smart phone users.

CONCLUSION:

The technology in banks is the need of the hour and its future is undoubtedly bright because it saves a lot of time. Globalisation is shrinking the size of the world. Required steps must be taken for sound management of banking technology. The most important aspect is to gain the confidence of customers. This can be achieved by the banks when they adopt appropriate design methodologies. It is very important for the banks to keep the customers' point of view as the top priority. Banks must offer a fair blend of services with an ideal combination of traditional banking flavor and new emerging banking technology tools.

Even though the results of recent developments and experiments are yet to come, yet it is assured that the technology will not remain as only a value added tool but it becomes one of the most important key to success into banking industry. Indian banks are yet to experience extensive adoption of many technologies, however, significant investments and developing dedicated teams to test technologies is a positive sign.

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