

INFORMATION TECHNOLOGY AND PAYMENT SETTLEMENT SYSTEM IN INDIAN BANKING INDUSTRY

NIDHI KHANNA*

ABSTRACT

The Indian banking and financial market have undergone a series of structural transformation and innovations since post independence, beginning from the nationalization of banks to evolution of crypto currency and artificial intelligence. The primary objective behind all innovation in banking sector is financial inclusion of vulnerable section of society so that they can significantly contribute to growth and development of Indian economy. The various instruments like Debit Cards, Credit Cards, kiosk machine, ATM, Adhar enabled PAN, PAYTM, PAYPAL, BHIM APP, and many more plays a role to flourish the economy. The government of India is trying its best to reach marginal sections of society and it would be wrong to deny the fact that innovations in banking sector has set a milestones in India. Due to rapid developments in technology government has fuelled the emergence of integrated payment settlement system with chat bots. The present paper is an attempt to identify recent technological innovations, developments and trends in banking sector to streamline customer protection and win global market.

KEYWORDS- Innovations, Automated Teller Machine, Marginal section.

*** Research Scholar, Faculty of Commerce, Banaras Hindu University, Varanasi, Uttar Pradesh, India**

INTRODUCTION

The banking industry have undergone a structural and technological reforms from the mid of 80's with the process of Branch Automation Process .Technological advancement have played a dominant role in growth of financial market and set a milestones in banking Industry. Internet has emerged as significant tools for delivering banking products at a doorstep at minimum cost. Information technology in the form of Artificial intelligence plays proactive role in satisfaction of customers and avoidance of fraudulent. Cheques clearance, digital locker, chat robots are the few to mention recent technological innovations. In India internet banking and instant money transfer is of recent origin gaining its importance after a major economic reforms since .Some of the major economic reforms in banking industry are Debit card /Credit Cards, ATM, E-cheques, Digital locker, Internet banking, Instant money transfer app, crypto currency, dematerialization, electronic data interchange and many more. With the passage of time, Internet banking has gained its significance for settlement of transactions. Internet banking or e-commerce has been classified into-

- Business –to-consumer (B2C) and
- Business to business (B2B)

B2C are the services offered from business to consumers through e-shops, malls, payment gateways, financial services.

Under B2B domain the parties to deal with belong to different supply chain.

The Vision statement -2018 by Reserve bank of India for payment and settlement system reiterates commitment of regulatory and authority bodies to achieve cash-less society by enabling wider access of digital transactions through integrity of system and security operations.

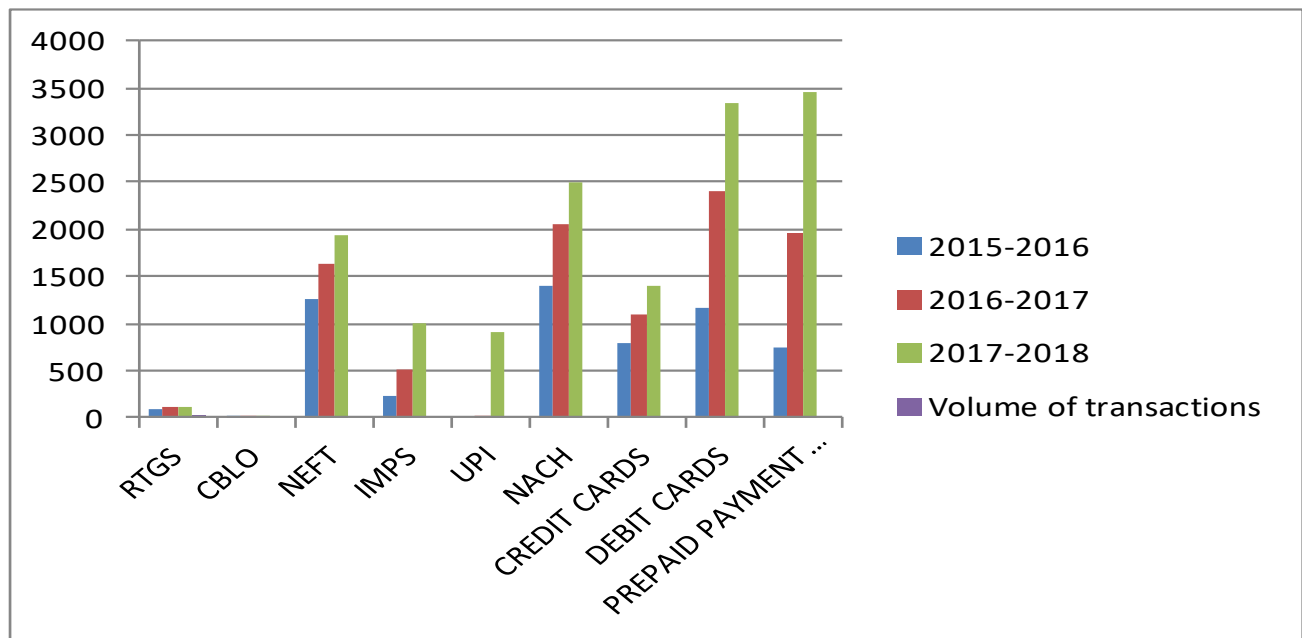
TABLE 1: PAYMENT SYSYTEM INDICATORS –ANNUAL TUROVER

PAYMENT SYSTEM INDICATORS –ANNUAL TURNOVER						
	VOLUME(Million)			VALUE(Billion)		
	2015-2016	2016-2017	2017-2018	2015-2016	2016-2017	2017-2018
RTGS	98.3	107.8	124.4	8,24,578	9,81,904	11,67,125
CBLO	0.2	0.2	0.2	1,78,335	2,29,528	2,83,308

NEFT	1,252.9	1,622.1	1,946.4	83,273	1,20,040	1,72,229
IMPS	220.8	506.7	1,009.8	1,622	4,116	8,925
UNIFIED PAYMENT INTERFACE	-	17.9	915.2	-	69	1,098
NATIONAL AUTOMATED CLEARING HOUSE	1,404.1	2,057.3	2503.3	3,802	7,916	10,736
CREDIT CARDS	785.7	1,087.1	1,405.2	2,407	3,284	4,590
DEBIT CARDS	1,173.6	2,399.3	3,343.4	1,589	3,299	4,601
PREPAID PAYMENT INSTRUMENTS	748.0	1963.7	3,459	488	838	1,416

Source- Reserve Bank of India-August 29 2018, Annual report on Payment System Indicators

TABLE 2: VOLUME OF TRANSACTIONS



Source- Author's computation

Research Methodology

The present paper is conceptual and exploratory, entire data collection is based on secondary sources of information that includes official websites of Reserve bank of India, National

Payment Corporation of India, published journals and articles and proceedings from the conferences too.

OBJECTIVE

Today in the era of communication Information technology enables to deliver banking services to customers instantly at low or minimum cost. The objectives of this paper is to

- Cognize different innovations of Information technology in banking industry
- to chalk out trends and progress of banking services

Literature Review

1. (Aisha badruddin, 2015) in her research paper emphasized significant transformation of Indian banking industry. India has variety of option available for payment settlement system but authorities should emphasize for rural and urban capacity. The payment settlement Systems in India includes interbank mobile payment service enabling ECS, NEFT, electronic fund transfers. Core principles of Payment systems include legal jurisdictions, clearly defined procedures, prompt and multilateral settlement systems. She also emphasized various policy initiatives and trends in payment settlement system.

2. (M.Vasan and B.Senthil , 2018), has mentioned in their research papers different types of banking services offered to customers in forms of ATM, EFT, NEFT, RTGS, debit cards, credit cards, internet banking, mobile banking, telephone banking, electronic clearing services and many more. Researchers in their paper has demonstrated the technological shifts in banking sector from 2007 to 2017 and compare volume of transactions in payment settlement system. Indian banking system has undergone a series of transformation but India still needs to be strong infrastructure to meet future challenges because when compared to foreign banks Indian banks gets only limited online transactions. .

3. (Amar Eron Tigga, 2012), in their paper cognized role of IT in banking industry and use of internet has improved methods of communication. The banking industry has implemented Information technology in every spheres of this their services like customer relationship management ,operation management, risk management , and human resource management. Although a lot of implementations has been done but still a lot progression is still required to avail full benefits of Information technology.

4. (Deepak Tandon ,et.all,), in their research paper consolidated transactions and volume of transactions through RTGS and mobile transactions for the year 2011 to 2013 and observed that with the growth in technology ,it is mandatory for the banking sector to maintain a pace with changing environment. However information technology involves a high level of security issues like cyber crimes, data errors, data inconsistency. A transformed Indian banking –IT vision 2025 is the need of the hour.

5.

PAYMENT SETTLEMENT SYSYTEM IN INDIA

1-Real Time Gross settlement system in India

Real Time Gross settlement system in India is a fund transfer facility on one to one basis at real time as and when transactions occur without delay in process on an individual basis. RTGS carries a remittance limit of minimum 2 lacks without maximum ceiling. The timing of settlement of transactions may vary from bank to bank depending upon the customers timing but usually from 9:0 clock to 4:30 and 9:00 to 2:00 P.M on Saturday. No fees is levied on inward transaction while 30 rupees is charged for an amount between 2 to 5 lakhs.The details that a customer has to furnish while remittance of funds are-Amount to be settled, name of the beneficiary branch, IFSC and customers detail account number.

2-National Electronic fund Transfer

National electronic fund transfer scheme is one to one payment settlement system under which individuals, corporate, firms can easily transfer fund from one bank account to another of any branch of the bank in India. The cash remittance limit in NEFT is restricted up to ₹ 50,000. The benefits offered by NEFT service includes-

- Absence of physical paper instruments like cheques, demand drafts
- Remittance can be easily done through internet banking in a secured manner with proper credit confirmation mail

Table 3: The details regarding processing fees is as follows (not exceeding charges)-

Inward transactions	No charges
Up to ₹ 10,000	₹ 2.50 plus applicable GST
From ₹ 10,000 to ₹ 1,00,000	₹ 5 plus applicable GST

From ₹1,00,000 to ₹ 2,00,000₹	₹ 15 plus applicable GST
For transactions above ₹ 2,00,000	₹ 25 plus applicable GST

3-Automated Teller Machine

Automated teller machine is one the finest innovation of information technology that facilitates customers to perform multiple financial transactions such as deposit, withdraw of money, balance enquiry with authentication and personal identity number. Most of the banks charges fees to withdraw money from non customers of banks. The common functions performed by machines are –

- Payment of bills,
- Money transfer from one account to another
- Updating passbooks

TABLE 4: AS AT THE END MARCH -2017 BRANCHES AND ATM OF SCHEDULED COMMERCIAL BANKS ARE

Name of the bank	Branches					ATM's		
	Rural	Semi-Urban	Urban	Metropolitan	Total	On-site	Off-Site	Total
Public Sector Banks	29,033	25,647	17,890	18,875	91,445	86,545	62,010	1,48,555
Nationalised Banks	21,214	18,491	13,460	14,269	67,434	56,960	32,332	89,292
State Bank Group	7,819	7,156	4,430	4,606	24,011	29,585	29,678	59,263
Private Sector Banks	4,822	7,803	5,158	6,878	24,661	23,045	35,788	58,833

Reserve bank of India report Dec,2017, on Trend and Progress of Banking in India 2016-2017.

4- Mobile banking

Mobile banking is a service that facilitates customers to have all banking transactions such as transfer of money from one account to another, payment of bills, balance enquiry through mobile applications like BHIM, TEZ Pay app. These are one of the finest contributions of IT and highly promoted by government of India as a secured and highly encrypted app.

Mobile banking services includes-

- Monitoring of all the account transactions such as loans a/c,
- Fund transfer from different accounts
- Updation of status

National Payment Corporation of India is an umbrella organization that facilitates mobile banking through Unified Payment Interface. USSD also facilitates customers to avail banking services through codes *99# at free of cost and without internet facility.

Some of the innovations of mobile banking to attract customers are to attract customers and promote digitalization.

TABLE 5: MOBILE APPLICATIONS WITH THEIR BANKS

	APPLICATION	BANKS
1	PAYZAPP App	HDFC Bank
2	LIME App	Axis bank
3	Tap &Pay	ICICI bank
4	Instant Money Transfer	Bank of India
5	EMI on Debit Card	ICICI bank
6	Chillar	HDFC bank
7	State bank of India No Queue	State bank of India
8	UCO pay Wallet	UCO bank

Source- Compiled from different sites

5- Block chain Technology

Blockchain technology is a digital currencies in which transactions in the form of ledger, performed at same point of time. Each transactions has to be verified by network and it has far reaching impact as it prompts more and more financial institutions to invest in this technology. The technology ensures transparency and security but in the meantime involves ethical risk of unidentified validity of users.

One of the recent developments of blockchain technology is bitcoin and typically works on the principle of peer to peer network. The credit of invention of blockchian technology goes to

Satoshi Nakamoto and basically proposed for business purposes. The basic principle is that new blocks are added to old block that leads to extension of new blocks. The peculiar uses of blockchain technology includes-

- Blockchain are of special significant for those contracts that can be significantly executed without human interactions.
- Banks are also exploring new technology as how to increase efficiency of transactions at minimum costs.
- Blockchains are also used as a digital game assets.

Blockchain technology is heavily dependent on cryptographic and data security that inherently dependent upon decentralized ledger of transactions.

Smart Contracts

“A smart contract is an agreement whose execution is both automatable and enforceable. Automatable by computer, although some parts may require human input and control enforceable by either legal enforcement of rights and obligations or tamper proof execution”.
(definition by Barclays)¹

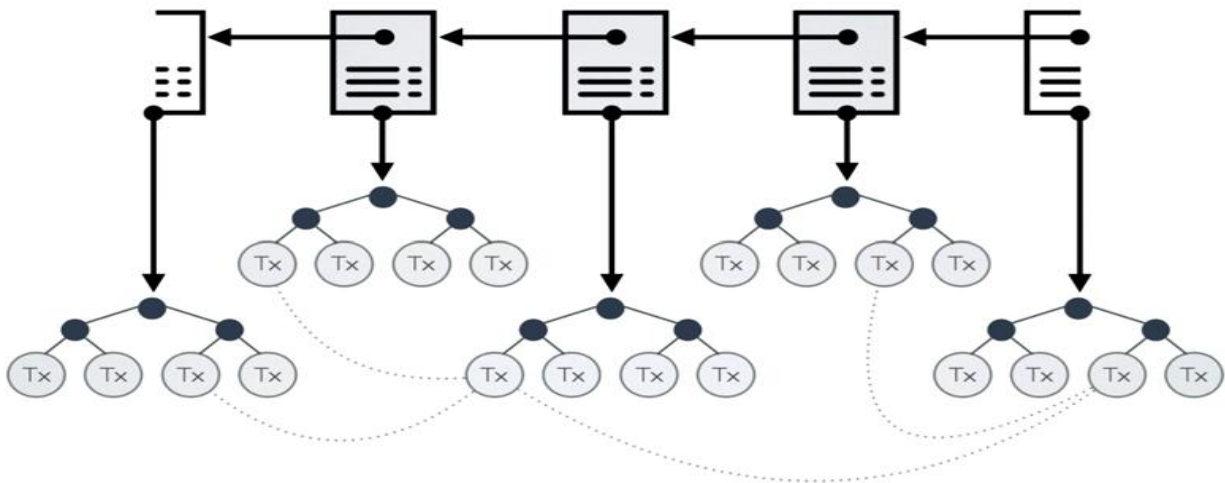


Figure1: Blockchain architecture as a ledger of transaction

¹ White paper on Applications of Blockchain technology to banking and financial sector in India :Institute for development and research in Banking technology by Reserve bank of India,2017

Source-White Paper: Applications of Blockchain technology to banking and financial sectors in India, Institute for development and research in banking technology by Reserve bank of India.

6] Smart Cards

Smart Cards are an integrated circuit that serves as a ATM cards, credit cards, mobile SIMS, in the form of electronic wallets that facilitates users to make payments instantly using cards. Basically cards are classified into

- Debit Cards
- Credit cards
- Prepaid cards

The debit cards are used for several purposes like withdraw of cash from ATM, payment of bills, online purchases while credit cards are used for online purchases through Interactive Voice response. Various methods to use card are either it is Swiped, dipped or tapped. Issuer banks of card decides the maximum permissible limit to withdraw amount. Reserve bank of India is playing an active and vigilant role to prevent any fraudulent activities taking through the usage of cards by sending an alerts through registered phone number or email-ids. Central bank has strictly mandated banks to issue cards for the domestic purposes only unless the international usage has been specified by the users and the cards will essentially have EVM chips and PIN enabled.

Conclusion

The initiatives taken by Reserve bank of India from time to time act as force to strengthen Payment settlement system in India. Since 2013 all the retail electronic payment has shown a robust growth in terms of volume and value of transactions. NEFT has increased almost three fold times and card transactions have also shown significant rise in the usage. The broad contour of Vision 2018 revolves around 5 Cs: Coverage, Convenience, confidence, convergance and cost. Expected growth outcome of Indian payment and settlement system is to depict steep decline in the share of paper based clearing transactions while significant increase. Globally payments infrastructure has been transformed to include new players in the field to launch offerings for retails. However, lack of amendment of cyber security laws in different countries is posing a threat and challenge in global markets.

PAYMENT AND SETTLEMENT SYSTEM IN INDIA : VISION 2018
RESERVE BANK OF INDIA

VISION STATEMENT

Building best of class payment and settlement systems for a less-cash India through responsive regulations, robust infrastructure, effective supervision and customer centricity.

REFERENCES

1. Badruddin, A. (2015). Financial market Infrastructure :A study on Payment and settlement system in Indian banking sector. International Journal of Engineering Technology, Management and Applied Sciences, 179-191.
2. Deepak Tandon, N. T. (n.d.). Wings of Changed technological payment systems in Indian banking-an empirical study. IOSR Journal of Economics and Finance, 22-29.
3. M, V. B. (2018, January). A study on payment and settlement system in Indian banking sector. Research maGma, An International Multidisciplinary Journal.
4. Reserve bank of India. (2018). Payment System Indicators- Annual Turnovers. Reserve bank of India.
5. Tigga, A. E. (2012). Impact of information technology on Indian banking services.
6. RTGS – Reserve bank of India -<http://m.rbi.org.in/Scripts/FAQView>
7. National Electronic Funds Transfer (NEFT)-Reserve bank of India, <http://m.rbi.org.in/Scripts/FAQView>
8. Reserve bank of India report Dec 2017, on Trend and Progress of Banking in India 2016-2017
9. White paper on Applications of Blockchain technology to banking and financial sector in India :Institute for development and research in Banking technology by Reserve bank of India,2017
10. Reserve bank of India:<http://m.rbi.org.in/Scripts/FAQVIEW>, November 02, 2018.
11. Payment and settlement systems in India :Vision 2018, Reserve bank of India :Department of Payment and settlement systems
- 12.