

# E-Payment—A Study of Banking System in India

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**Abstract**—In this paper researcher has been tried to examine the developments of payment system in Indian banking system and analyzes. ICT based payments and settlement service. In recent years Indian banking system have been undergoing from modernization phase and implementing many innovation ideas in the system. This article focused on only payment and settlement system and it is based on secondary data sources. Data consist in it has been analyzed by the simple statistical tools. This article consist ICT based payment system and services provided by RBI and banking institutions in India as well level of transaction International Journal of Enterprise Computing and Business Systems volume, value as well as includes threats of electronic payment system as suggest applicable measures to enhance payment system.

## 1. INTRODUCTION

Every country has a financial system of its own that serves as backbone of its entire development. A financial system is a set of institutional arrangements through which financial surplus in the economy is mobilized from surplus units and transferred to deficit spenders. The financial system of any country consists of banking and non-banking financial institutes, these institutes are providing various types of financial services to the customers. In the financial services, financial clearing and fund transfer service is most important service than other services. Payment systems improve financial intelligibility, stimulating business growth and consumption. The success of the banking system has depends upon the efficient and quality of clearing system of the industry. If we overlook the worldwide, this system has changing drastically with technological advancements. Last few years evident that, Information and Communication Technology (ICT) have become a mean for improvement of financial system worldwide. In India, most of banks and financial institutions are offering ICT based financial products and services to improve their business efficiency and speed of services e.g. called e-banking, internet banking, electronic fund transfer, electronic clearing, mobile banking etc.

## 2. REVIEW OF INDIAN FINANCIAL SYSTEM

In Indian financial system 19 nationalized commercial banks, SBI group of 06 banks including State Bank of India, 14 old and 07 new private sector banks and 32 foreign banks are dealing banking business as on March, 2012. The mechanization and computerization of banking were started

from 1985 by the first phased plan of bank automation in India. Now in India, 97 percent of public sector bank branches, cent percent private and foreign banks are computerized. These banks are offering lots of ICT based banking service to bank customers and using modern technology to internal business operations. After financial reform period 1991, various foreign and new private sector banks are entering in Indian banking industry with their high-tech banking services. It leads to competition of ICT based banking services in Indian banking system and creates efficiency. For the further developments the Reserve Bank of India (RBI), Institute for Banking Research and Development of Technology has continuously trying to enhance the system by required facilities to banking and financial institutes in India.

## 3. PAYMENT SYSTEM

Payments are an indispensable part of our daily transactions, be it a consumer to a business, a business to a consumer or a business to a business. Payments raise the GDP of a country thus it is mandatory that the payment systems of the country are “safe, secure, sound, efficient, accessible and authorize,” as states the mission statement of the Reserve Bank of India’s publication on

Payment Systems in India (2009–12). The Reserve Bank of India continually strives towards ensuring the smooth progress of the payments system. Payment systems in any country are the most essential part of the economic system of that country. Efficiency in these is required to guarantee the timely completion of all transactions. As the payment system is one of the most important components of the financial system, innovative ways of making payments, which are less hassle, some are being focused upon. The BPSS is trying to effect a change in the mode of payments in India, from paper to electronic. Since electronic means are both safer and more efficient, efforts are continuously being made to change the mindset of people and make them shift to electronic-payments. An efficient payment system forms the backbone of economic wellbeing of a nation.

#### 4. PAYMENT SYSTEM IN INDIA

Payment instruments and mechanisms have a very long history in India. The earliest payment instruments known to have been used in India were coins, which were in gold, silver, and copper. In the Mughal period, Indian has starting use of bills of exchange in the commercial centres. In the Muslim period traders' were use Pay orders it was issued from the Royal Treasury on one of the District or Provincial treasuries. They were called Barrettes and were akin to present-day drafts or cheques. In the in the twelfth century one of the most important financial instrument were evolved that is Hundi it has continued till today. Till 1835 there were variety of currency systems and coinage in India, but in 1835, the East India Company introduced the Company's Rupee to bring about uniformity of coinage over British India. A paper currency system were implemented in 18th century, earliest issues of paper currency were issued by the Bank of Hindustan, then after issued by the General Bank in Bengal and Bihar, the Bengal Bank and three Presidency Banks. The Paper Currency Act of 1861 conferred the monopoly of the Government of India and presidency banks working in India. After the establishment of the RBI all rights of currency system has given to the RBI in India.

#### 5. MODERN PAYMENT SYSTEM IN INDIA

The Reserve Bank of India (RBI) has played a significant role in developing the payment and settlement systems in the nation from its establishment. The emergence of e-commerce has created new financial requirements that in many cases cannot be effectively fulfilled by the traditional payment systems. To recognizing these needs the RBI has implemented bank computerization project in India and providing ICT based networking facilities to the banks and financial institutions in India. Since 1991 the RBI has started 'BANKNET' it is network for banking institutes other than Banknet The 'INFINET' - Indian Financial Network is a satellite based wide area network using VSAT (Very Small Aperture Terminal) technology set up in June 1999. The Centralized Funds Management System (CFMS) facilitates centralized balance viewing of and funds transfer between own accounts of a member bank maintained with the Bank at different locations. In Indian banking system ATM also providing better alternative to traditional payment system it can be used for payment of utility bills, funds transfer between accounts, deposit of cheques and cash into accounts, balance enquiry and several other banking transactions. Apart from these facilities RBI has enhancing the payment system by introducing MICR technology, ECS, EFT, NEFT, Card Based Clearing and RTGS etc. Vision 2005-08 is implemented to enhance payment system in India, the four broad tenets of the mission relate to the Safety, Security, Soundness, and Efficiency. It is called the 'Triple-S + E' principle in short, each of the principles support to customer satisfaction and enhancement of payment system. In the Vision document

2009-2012, two more principles are added as accessibility and authorization in payment system.

Through its multifaceted roles as a regulator, supervisor, and harbinger of innovation, the Reserve Bank oversees the orderly development of a secure and efficient domestic payment and settlement system. As part of this function, the reserve bank has furthered its social responsibility by enabling payment system services at low costs by promoting institutions such as IDRBT and systems such as INFINET and RTGS. The total turnover under various payment and settlement system, in terms of both value as well as volume, exhibited a steady growth during the year 2011-12. In terms of volume, a growth of 9.1 percent and in value terms 7.6 percent was registered.

#### 6. ROLE OF THE RBI IN ENCOURAGING E-PAYMENTS

i. As the apex financial and regulatory institution in the country it is compulsory for the RBI to ensure that the payments system in the country is as technologically advanced as possible and in view of this aim, the RBI has taken several initiatives to strengthen the e-payments system in India and encourage people to adopt it.

ii. The Payment and Settlement Systems Act, 2007 was a major step in this direction. It enables the RBI to "regulate, supervise, and lay down policies involving payment and settlement space in India." Apart from some basic instructions to banks as to the personal and confidential nature of customer payments, supervising the timely payment and settlement of all transactions, the RBI has actively encouraged all banks and consumers to embrace e-payments.

iii. In pursuit of the above-mentioned goal the RBI has granted NBFC's (Non-Banking Financial Companies) the permission to issue co-branded credit cards forming partnerships with commercial banks.

iv. The Kisan Credit Card Scheme was launched by NABARD in order to meet the credit needs of farmers, so that they can be free of paper money hassles and use only plastic money.

v. A domestic card scheme known as Rupay has recently been started by the National Payments Corporation of India (NPCI), promoted by RBI and Indian Banks Association (IBA), inspired by Union pay in China, which will be promoting the use of cards i.e. "plastic money". Initially functioning as an NPO, Rupay will focus on potential customers from rural and semi-urban areas of India. Rupay will have a much wider coverage than Visa, MasterCard or American Express cards which have always been used for card-based settlements.

vi. However, the Indian banking system suffers from some defects due to certain sociocultural factors which hampers the spread of the e-payments culture even though there are many effective electronic payment channels and systems in place.

Despite the infrastructure being there nearly 63% of all payments are still made in cash. A relatively small percentage of the population pays their bills electronically and most of that population is from urban India-the metropolitans. Also in some cases the transaction is done partially online and partially "offline." The main reason for this apathy switch to e-payments comes from lack of awareness of the customer despite various efforts by the Government.

## 7. MICR CLEARING

Traditional cheque clearing process is time consuming and lengthy it affects value of transaction of settlement. To enhance speed of cheque clearing the RBI has started MICR cheque and MICR clearing system. Magnetic Ink Character Recognition (MICR) is character recognition technology adopted mainly by the banking industry to facilitate the faster processing of cheque. It is called MICR clearing system. There are 64 MICR clearing centers are operated in India in 15 divisions in India. MICR technology transformed cheque-processing systems by enabling the introduction of automated clearinghouses. The system is well stabilized in India with the overall reject rates of around 1% while international reject rates are around 2%. Cheque clearing accounts for over 95% of the retail payment and more than 70% of cheque clearing is based on MICR technology. According to the available data volume of MICR based clearing has been declining rate of 0.33 percent and value is decreased 0.059 percent in 2009-10 to 2011-12. Amount of MICR based clearing decline from Rs. 85.3 trillion to 80.2 trillion whereas as volume of Non-MICR based clearing has been declining rate of 0.02 percent and value has not been changed.

## 8. ELECTRONIC CLEARING SYSTEM

Electronic Clearing System (ECS) is a retail payment system, which facilitates bulk payments, that facilitate payments from one-to-many and receipts that are from many-to-one. ECS Scheme operated by the RBI since 1996-97, helps to make payment from a single account at a bank branch to any number of accounts maintained with the branches of the same or other banks. ECS (Credit) also known as Credit Push facility facilitates the bulk payments whereby the account of the institution remitting the payment is debited and the payments remitted to beneficiaries' accounts. This facility is now available at 67 major centres in the country. ECS (Debit) also known as Debit Pull facility facilitates the collection of payments by utility companies. In this system the account of the customers of the utility company, in different banks are debited and the amounts are transferred to the account of the company. Amount of ECS based credit is increased from Rs.98 million to Rs.121.5 million in 2009-10 to 2011-12 and ECS based Debit transaction has been increased from Rs. 149.3 million to Rs.164.7 million in 2009-10 to 2011-12

## 9. ELECTRONIC FUND TRANSFER (EFT & NEFT)

EFT System hosted and operated by the RBI, permits transfer of funds, upto Rs. 5 lakh from any account at any branch of any member bank in any city to any other account at any branch of any member bank in any other city. This system utilizes the Service Branches of the member banks and the nodal offices of RBI. The Reserve Bank of India acts as the service provider as well as regulator. The NEFT was introduced in 2005. Since its inception the coverage of NEFT has increased. It is called Special Electronic Fund Transfer (SEFT) also. It is covering about 30,000 branches in 500 cities. This has facilitated same day transfer of funds across accounts of constituents at all these branches. Overall EFT and NEFT based clearing grow from Rs. 66.3 million to Rs. 226.1 million in the year 2009-10 to 2011-12.

## 10. CARD BASED CLEARING (CBC)

Credit and Debit cards have been in use in the country for many years now. In India card fashion increasing day by day due to its convenience and utility. Many banks have providing customized credit and debit cards to increase their business in India. However the card base as well as the usage has picked up during the last five years drastically. In the year 2009 to 2012 credit card based transaction are increased from Rs. 234.2 million to Rs. 320 million and debit card based transactions are increased from Rs. 170.2 million to Rs. 327.5 million.

## 11. REAL TIME GROSS SETTLEMENT SYSTEM (RTGS)

RTGS is system for large value clearing operated since 2003; the minimum amount to be remitted through RTGS is Rs. 1 lakh. There is no upper ceiling for RTGS transactions. It provides facilitates to settlement of transactions on a gross basis. This system ensures settlement of payments with no credit risk involved. It is therefore, essentially a system for settlement of large value and time critical payments. The system facilitates Inter-bank as well as customer payments. In India all bank branches are not RTGS enabled because only core banking (CBS) enabled bank branches can extend this facility. As on January 31st, 2009, more than 57000 bank branches were enabled for RTGS system. In year 2009-10 to 2011-12 transactions related customers remittances have raised from Rs. 33.2 million to Rs. 55 million. It shows that increasing popularity of RTGS in Indian banking system.

## 12. ON LINE TAX ACCOUNTING SYSTEM (OLTAS)

A measure aimed at providing better facilities for the government tax collection and for tax payers was the introduction of the On line Tax Accounting System (OLTAS) with a network of various banks authorized for collection of tax receipts. The Reserve Bank and the Tax

Information Repository at the National Securities Depository Ltd. (NSDL) are also part of the OLTAS. Data is captured from the channels submitted by tax payers tendered at the designated bank branches and transmitted electronically to the repository. The collection and transmission of data on tax collection have thus been made efficient on a T+1 cycle basis. The OLTAS works in a fully secured environment, with data being transmitted using encryption facilities and digital signatures for enhanced security. The system, in live operations from July 1, 2004 is performing well. Under the OLTAS 15 offices of the Reserve Bank, and 11699 authorised branches of 31 agency banks transmitted daily data on income/corporate tax collected by them to the tax information network (TIN) hosted by NSDL. The income tax challan form has also been simplified and made into a single copy challan.

### 13. FINDING OF STUDIES

i. In Indian banking system we have evident that, the payment and settlement system has changing according to market need. ICT revolution has availed new means to financial transaction and settlement process than traditional payment system. Some of the major findings are:

ii. MICR technology has providing faster cheque collection and clearing facilities to customers in India, but there are only 64 MICR clearing centres working in India than 1103 Non-MICR clearing centres. Till now transaction of Rs. 80.2 million has been managed by Non-MICR clearing Centre, these centres are clearing cheques only once in per week. Hence, there is essence need to increase MICR clearing houses and modify the Non-MICR clearing centres in MICR clearing centres to enhance payment system.

iii. ECS has available only mostly in city and semi urban area in India it is not available in rural branches. Therefore, the RBI should provide such facilities in rural branches to provide facilities to rural peoples.

iv. EFT and NEFT is network based service now it covers only urban areas so; there is an urgent need to ramp up technology based delivery channels particularly in the rural areas. It should extend the benefit of the financial system even to remote areas. All NEFT centres are working in Indian office hours but they should provide 24 hours services to provide more facility the bankers and customers'.

v. Credit and Debit cards are being extensively used in the nation as they provide a convenient form of making payments for goods and services without the use of cheques and cash. Issue of credit cards is exhibiting a phenomenal growth in recent years. Card based transactions are increasing continuously in India but is not to assured service according to Indian customers experiences. Because there are, so many complaints are registered in RBI's banking ombudsman offices. It clears that, it is not so good and secure facility in India. Hence, RBI should enhance the quality and security of card based transactions.

vi. In Indian banking system, there are competition of provide modern banking facilities to their customers, but some banks are ignoring security in transaction and convenience of the customers.

vii. In India all branches of commercial banks has not under core banking solution hence they have not extending RTGS facilities, therefore remaining banks should adopt core banking to use the RTGS and other efficient services. RBI has installed capacity of 150000 transactions per day but their server has only processes 38000 transactions per day, the speed should enhance to more transactions will take place.

viii. The electronic clearing and settlement system is useful to bankers and customers but there is need of controlling non-secure transaction, EFT fraud, mistakes in settlement etc.

ix. Other than 6 principles (Safety, Security, Soundness, Efficiency, Authorization, and Accessibility) used to develop payment system of the vision document 2009-2012 there is need of international standard, transference, user-friendly techniques, assurance and convenience also.

x. In the financial transaction, having transactional risk it affects assurance about the services. For this reason, there is need to minimize the transactional risks in the electronic payment system.

### 14. CONCLUSION

Now Indian banking system has undergone a significant transformation over time in terms of diversity and innovation. The developments in information and communication technology resulted in numerous innovations in the payment system of India. There are a variety of electronic clearing options are available in banking system. But these options are to limited than demand of bank customers in India. In the sense of rural India, these facilities are not provided sufficient level by the banking institutions due to lack of ICT connectivity and other infrastructural facilities.

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