



THE NEW EVOLVING SYSTEM OF E-PAYMENTS IN INDIA

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Abstract

In the last few decades, rapid advancement in technology and economic activities have led to new wave of innovations in the space of e-payment system in India. From the beginning, the Reserve Bank of India has taken several initiatives for ensuring safe, secure, sound, efficient, accessible and authorized payments systems in the country. The initiatives taken by RBI in the mid-eighties and early-nineties focused on technology-based solutions for the improvement of the payment and settlement system infrastructure, coupled with the introduction of new payment products.

With the formation of National Payment Corporation of India in 2009, a retail payment system has got a new kick in India. Since its inception, the NCPL has achieved several milestones such as Immediate Payment Service, Automatic Clearing House, Electronic Benefit Transfer and Domestic Card Payment network named RuPay.

In India, e retail transactions are more of "Volume based", rather than "Value based". In this regard, payment gateways provide quick mechanism to manage such transactions. Quite a few banks and service providers are offering payment gateway services in India. Further, Pay Gov India is launched in 2014 by Government of India under e-governance plan. Pay Gov India offers online payment options using net banking, credit cards, debit cards, IMPS, Cash cards, Wallets, NEFT/RTGS to citizens to avail government services.

Another new innovation recently introduced in the payment system landscape is the arrival of payment banks. The payment banks are expected to provide low cost platforms to the beneficiaries and move India more towards a cashless economy. The way payments are made in India is clearly changing fast with paper clearing taking a back seat. Electronic payments methods are continuously evolving at a fast pace to meet the needs of the current period.

Keywords: *E-Payments, Reserve Bank of India, National Payment Corporation of India, Payment Gateways, Payment Banks*



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1. Introduction

The way payments are made has constantly changed and evolved globally, over the years. From, coins to currency notes, to cheques, to credit cards and to electronic payments, the payment system moved to quick, cheap and convenient forms of exchange of money. In the last few decades, rapid advancement in technology and economic activities have led to new wave of innovations and wide spread adoption in e-payment activities system in India. The

new digital technologies have magnificently increased the accessibility, convenience, efficiency and speed of payment systems and service in the country.

In India, the Reserve Bank of India (Central Bank) has taken several initiatives for ensuring safe, secure, sound, efficient, accessible and authorized payments systems in the country. It has constantly strived towards introducing and upgrading safe and efficient modes of payments in India. It has constantly introduced technology based solutions and products for payments such as electronic clearing services, Electronic Fund Transfer, National Electronic Fund Transfer System, Real Time Gross Settlement (RTGS) system, establishment of Clearing Corporation of India Ltd., and so on.

With the formation of National Payment Corporation of India in 2009, a retail payment system has got a new kick in India. It has introduced RuPay Card which enables the cardholders to transact online. The launch of Immediate Payment Service (IMPS) in November 2010, has provided anytime, anywhere instant money transfer service to users which can be easily accessed through mobile phones too.

Next important development in the ex-payment arena is the entry of private players as e-payment gateways. These new non-bank retail payment market entrants are providing one single interface to one or more online payment methods like accept credit cards, bank transfers, direct debits, digital wallets, to e-commerce merchants and businesses. Further, they are also facilitating easy and quick payments by the buyers. As a result, they are fast gaining ground and are becoming increasingly popular.

Another significant initiative for facilitating payments has been taken by Government of India. As an e-governance initiative, Government of India has provided a centralized platform to all Government Departments and Services to collect online payments from citizens for government services.

For creating a new payment space within the country in November 2014, Reserve Bank of India has given 'in principle' approval to 11 entities for setting up payment banks. These banks are expected to not only offer more interest on savings deposits but also seamless payment options through mobile. In the following pages, an attempt has been made to study the above referred aspects of new evolving e-payments system in India.

2. Objectives

The main objectives of the present paper are:-

- i) The crucial role of Reserve Bank of India in creating the new, innovative payment space.

- ii) To study and analyze the growth trends and payment indicators to know the popular modes of payments in India.
- iii) To study the emergence of E-payment gateways in India.
- iv) To study the New Payment Service Platform - Pay Govt. India launched by Government of India.
- v) To study how India is aiming at financial inclusion through payment banks.

3. Data and Methodology

Data for the study has been collected from the secondary sources such as reports and bulletin and websites of Reserve Bank of India, National Payment Corporation of India, Government of India, published articles. Simple statistical tools and graphs have been used to make the analysis. All the referred sources have been acknowledged at the end of the article in reference.

4. The Crucial Role of Reserve Bank of India

India has a variety of payment systems ranging from paper based systems to the most sophisticated electronic fund transfer systems. All these systems are regulated by the Reserve Bank of India (Central Bank). As a part of its objective of providing a safe, secure, sound and efficient payment system, the Reserve Bank of India has undertaken numerous initiatives to develop and promote electronic payment infrastructure. RBI constituted a Board for Regulation and Supervision of Payment and Settlement Systems in 2005 to prescribe policies and set standards for all types of payment and settlement systems. The payment and settlement systems in India thereafter are regulated to the Payment and Settlement Systems Act 2007, which came into force with effect from 12th August, 2008. The certificate of authorization are issued by Reserve Bank of India to Payment System Operators. The Act covers matters like application and grant of authorization for commencing a payment system, payment instructions and determination of standards of payments systems etc. As on January 14th, 2016, 70 payment system operators exist which have been authorized by RBI to set up and operate in India. Prominent among them are The Clearing Corporation of India Ltd., National Payments Corporation of India, American Express Banking Corp., Master Card Asia, Visa World Wide, PNB, SBI, Aircel, Airtel, Vodafone m pesa.

5. Innovations by National Payment Corporation of India

National Payments Corporation of India (NPCI) was set up with the guidance and support of RBI in 2009. It is an umbrella organization for all the retail payment system in India with an objective to provide nationwide uniform and standard business process for all retail payment systems. Since its inception, the organization grown multi-fold from a single service of switching of inter-bank ATM transactions to cheque clearing, Immediate Payment Service, Automatic Clearing House, Electronic Benefit Transfer and Domestic Card Payment network named Rupay.

RBI’s vision is to proactively encourage electronic payment systems for ushering in a less-cash society in India. Its continuous Endeavour is “to ensure safe payment and settlement system in the country which are efficient, interoperable, authorized, accessible, inclusive and compliant with international standards.

The pro-activeness of the RBI has resulted in deeper acceptance and penetration of electronic payment systems in the country. This is depicted by the growth trends and payment indicators analyzed and graphed below.

6. Growth Trends and Payment Indicators

Table 1 shows last 10 years data (2005-06 to 2014-15) both in terms of volume and value or cheque (paper) clearing data, large electronic payments (RTGS) and retail electronic payments. The growth trends are shown in Figure 1 & 2 separately for volume and value of payments.

Table 1 : Growth trends in Payments

Year	RTGS Large Electronic Payment		Retail Electronic Payment		Cheque Clearing Data	
	Volume(in million)	Value(in billion)	Volume(in million)	Value(in billion)	Volume(in million)	Value(in billion)
2005-06	1.77	115408.36	285.01	1463.83	1286.76	113291.34
2006-07	3.88	246191.8	378.71	2356.93	1367.28	120424.26
2007-08	5.85	482945.59	535.31	10419.92	1460.56	133960.66
2008-09	13.38	611399.12	667.82	5003.22	1397.39	124691.35
2009-10	33.25	1011699.31	718.16	6848.86	1380.27	104099.42
2010-11	49.27	941039.34	908.59	13086.87	1387.4	101341.28
2011-12	55.04	1079790.59	1159.93	22076.08	1341.87	99012.14
2012-13	68.52	1026350.05	1559.73	33854.01	1313.48	99982.25
2013-14	81.11	904968.04	2236.48	50350.65	1257.31	93316.04
2014-15	92.78	926332.89	3110.65	68478.16	1196.51	85434.14
Overall Growth in 10 Years	52.4 times	8 times	10.9 times	468 times	0.93 times	0.75 times

Source of Data: RBI Bulletins: http://rbi.org.in/scripts/BS_ViewBulletin.aspx

Figure 1: Growth trends in Volume of Payments

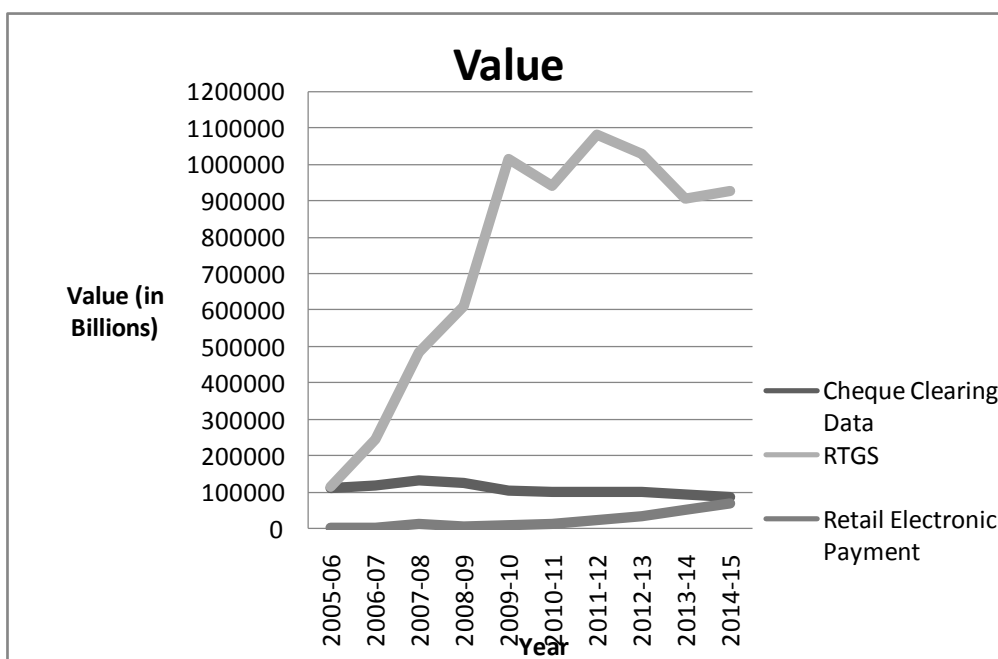
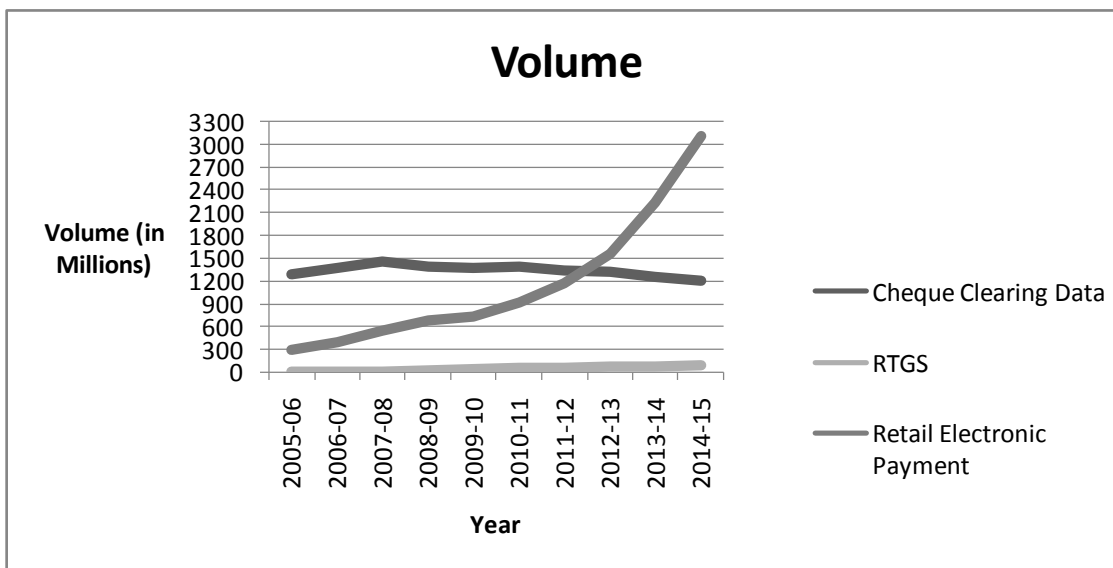


Figure 2: Growth trends in Value of Payments

Very interesting results are visible when we analyze Table 1, figure 1 & 2.

- i) The maximum growth in the value has occurred in RTGS i.e. 52.4 times, followed by Electronic Retail Payments which have grown 46.8 times in value over 10 year period.
- ii) The volume of Retail Electronic Payments and RTGS have also grown 10 & 8 times respectively.
- iii) There is a visible decline in volume and value of cheque clearing data.

iv) However, when we look volume and value data in absolute terms, cheque clearing line is much above RTGS line in volume graph and is above Retail Electronic Payments in value graph.

v) RTGS represents large electronic payments and have significantly grown over 10 year period which is visible in figure 2.

vi) In terms of volume of transactions, increasing popularity of Retail Electronic Payments is clearly visible in Graph 1.

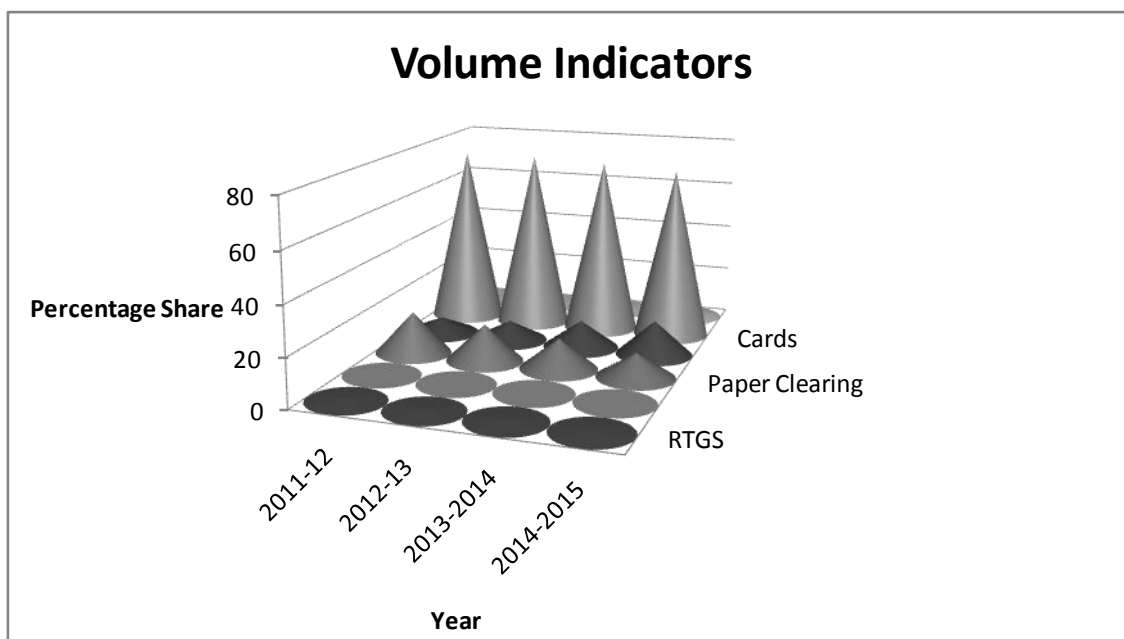
Clearly, electronic payments are surpassing paper based payment methods. This is also visible when we look into payment indicators as shown by Table 2 and Figures 2 & 3.

A more detailed analysis of payment system indicators are produced in Table 2 and figures 3 & 4.

Table 2: Payment System Indicators

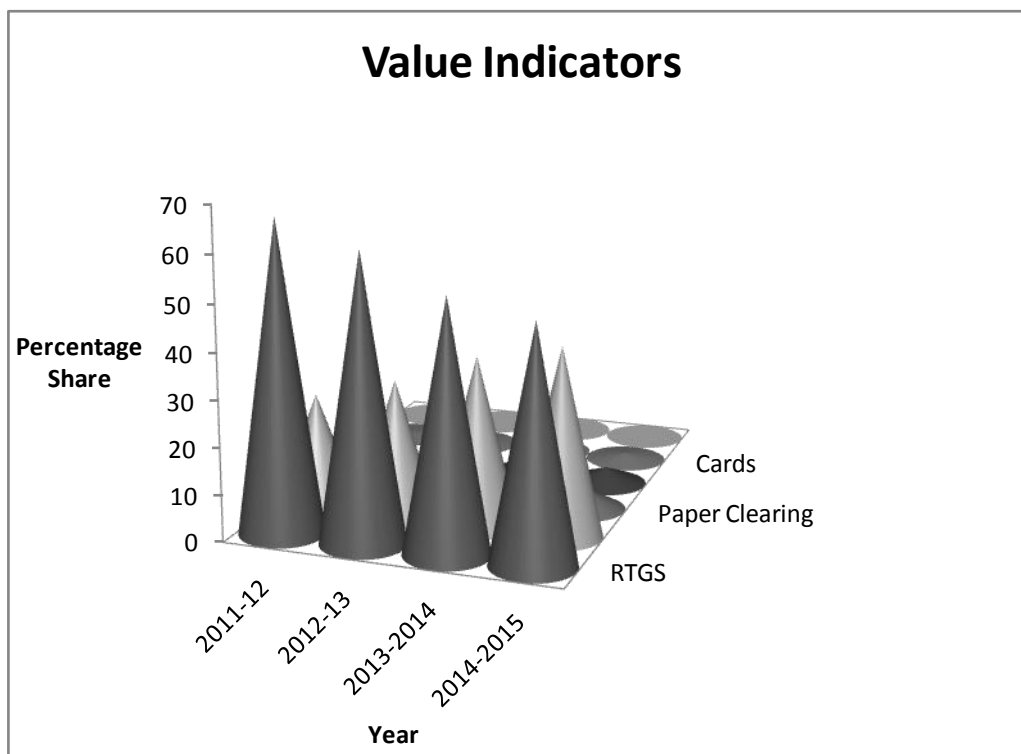
Particulars	2011-12		2012-13		2013-14		2014-15	
	Volume (in million)	Value (in billion)	Volume (in million)	Value(in billion)	Volume (in million)	Value (in billion)	Volume (in million)	Value (in billion)
1. RTGS	55.05	1,079,790.59	68.52	1,026,350.05	81.11	904,968.04	92.78	929,332.89
2. CCIL operated systems	1.88	406,071.18	2.26	501,598.49	2.56	621,569.93	3.03	752000.42
3. Paper clearing	1341.88	99012.15	1313.48	99982.25	1257.31	93316.04	1196.51	85434.14
4. Retail electronic clearing	512.45	20575.61	694.07	31881.14	1108.32	47856.29	1687.44	65365.51
5. Cards	5731.59	15510.78	6398.35	16637.36	7219.13	22159.58	8423.99	25415.27
6. Pre-payment instruments (PPIs)	30.6	62.01	66.94	79.22	133.63	81.05	314.46	213.42
Grand Total	7673.45	1,621,022.32	8543.62	1,676,528.51	9802.06	1,689,950.93	11718.21	1,857,761.65

Source: RBI Bulletins: http://rbi.org.in/scripts/BS_ViewBulletin.aspx



Year	RTGS %	CCIL %	Paper Clearing %	Retail Electronic Clearing %	Cards %	Pre-Payments Instruments %
2011-12	0.72	0.02	17.49	6.68	74.69	0.4
2012-13	0.8	0.02	15.37	8.12	74.9	0.79
2013-2014	0.83	0.02	12.83	11.3	73.65	1.37
2014-2015	0.8	0.02	10.21	14.4	71.89	2.68

Figure 3: Percentage composition of payments in terms of volumes.



Year	RTGS %	CCIL %	Paper Clearing %	Retail Electronic Clearing %	Cards %	Pre- Payments Instruments %
2011-12	66.61	25.05	6.11	1.27	0.96	0.00
2012-13	61.22	29.92	5.96	1.90	0.99	0.00
2013- 2014	53.55	36.78	5.52	2.83	1.31	0.00
2014- 2015	50.02	40.48	4.60	3.52	1.37	0.01

Figure 4: Percentage composition of payments in terms of value.

Table 2 provides us information about today's prevalent modes of payments and their share both in volume and value of payments transactions. The following relevant observations are seen

- i) When we look for the share of 6 modes of payments, the share of cards i.e credit cards and debit cards used at ATMs and point of sale transactions is the maximum. More than 70% of all payments (in terms of volume) today are made by cards.
 - ii) At the end of the year 2014-15, Electronic cards and Retail Electronic clearing accounts for more than 86% of the volume of payment transactions.
 - iii) The share of Retail Electronic Clearing (inclusive of ECS Dr., ECS Cr., EFT/NEFT, IMPS and NACH) has increased from 6.68% IN 2011-12 TO 14.4% in 2014-15.
 - iv) Next comes the paper clearing with its share of above 10%. Paper clearing includes cheque transaction system (CTS), MICR clearing and non-MICR clearing. However, again it is pertinent to note that in a four year period, the share of paper clearing has dropped by 7% from 17.49% IN 2011-12 TO 10.21% IN 2014-15.
 - v) However, when we see the composition of value of transactions, RTGS has the major share. The share of RTGS in the value of payments is 50% at the end of 2014-15, though it has fallen from 66.6% in 2011-12.
 - vi) The share of CCIL operated systems has increased from 25% in 2011-12 to 40% in 2014-15.
 - vii) More than 90% of the value of payments is taken care by RTGS and CCIL.
 - viii) The share of value of Retail Electronic clearing has increased from 1% to 3.5% during the last four years. However, the share of value of paper clearing has fallen from 6% to 4.5% in the same period.
 - ix) Card payments which rule the volume of transactions have only 1.3% share in value of payment transactions at the end of 2014-15.
 - x) The new launched pre payments instruments such as m-wallet, PPI cards, paper vouchers, have started to make their presence felt in the system. In terms of volume, 8.68% of payments have been made through them in the year 2014-15
- It is clearly evident that the way payments are made in India is clearly changing fast with paper clearing taking a back seat. Electronic payments methods are continuously evolving at a fast pace to meet the needs of the current period.

7. The emergence of E-Payment Gateways

The advent of e-commerce has given rise to the requirement of a safe, quick, diverse and reliable source for facilitating payments online. These facilitators are called payment gateways, who work as an important link between buyers, sellers and their banks. Payment gateways are major tools in the hands of customers and merchants for bringing e-transactions with ease. They allow customers to buy products from all over the world using their credit cards, debit cards, electronic wallets, e-cheques etc. For merchants, handling of transactions becomes easy. The business can be done fast and efficiently as number of procedures to complete a transaction are directly taken care of by payment gateways.

In India, e retail transactions are more of “Volume based”, rather than “Value based” as seen in the previous section. So payment gateways provide quick mechanism to manage such transactions. Quite a few banks and service providers are offering payment gateway services in India. Some of the popular names among them are Pay U India, Insta Mojo, Citrus Pay, CC Avenues, Pay Zippy, Atom, Direct Pay, Emvantage, Zoakpay, EPS, Kyash and Paytm. In India, the mushrooming of e-payment gateways is a recent development which is presenting increased competition to the banks. These institutions have created a new payment space which provides access to funds transfer, banking and financial services to millions of people.

Currently, there are two types of payment gateways in India.

1. Merchant account through a bank: Banks like ICICI and HDFC open merchant accounts through which payments are received. Due to high installation charges, these accounts are suitable for big business.
2. Third party vendors: In this, an intermediary organization opens merchant accounts with various banks and allows payments using credit cards, debit cards and cash cards. Companies like CC Avenue, Pay U India, Direct Pay, EPS etc. fall in this category.

These payment intermediaries and aggregators of transactions ‘disrupt cash’ which is where the opportunity lies. The payment gateways not only help in substituting billions of transactions currently taking place using cash but also provide useful data regarding customer’s taste and preferences so as to improve the delivery system and provide financial services at affordable costs anytime anywhere.

As per a recent study of Digital Payment Gateways done in 2013 by Internet and Mobile Association of India (IAMAI), National Payment Council of India (NDCI) and Indian Market Research Bureau (IMRB). 97% of all online transactions were made using cards (debit cards and credit cards) and internet banking in 2013. Balance 3% of the online transactions were made using prepayment card instruments. The study also revealed that digital payments are made for variety of purposes such as travel, E-tailing, financial services, digital downloads (such as e-books, music and movies) and other services like matrimony, jobs, real-estate offers and so on. It clearly indicates that the scope of new-age payment gateways is going to increase with time.

8. National Payment Service Platform: Pay Gov India

With a view to make all government services accessible and available to the common man in local area, through common service delivery, Pay Gov India is launched in 2014 by Government of India under e-governance plan. Pay Gov India offers online payment options using net banking, credit cards, debit cards, IMPS, Cash cards, Wallets, NEFT/RTGS to citizens to avail government services. These services could be provided by central /state government departments, govt. agencies, municipalities, public utilities, tax payments etc. The payment process runs 24 X 7 for the citizen to make payments and the settlement process runs post end of day with all the government departments for its settlement. The reconciliation process runs with the banks daily to ensure no transaction is missed and all the transactions are settled or refunded back to the customers' account. It provides an interface for the refunds too.

Pay Gov. India works as an aggregator of all payment channels that a citizen can pay from. It covers 65+ banks for net banking, debit cards (Visa/Master/Maestro/Rupay/ATM cards), credit cards. (Visa/Amex/Masters/Dinners), IMPS, NEFT, RTGS, Cash Cards and Wallets. Currently the service is in implementation stage with various central and state government departments.

9. Financial Inclusion through Payment Banks

Another new innovation recently introduced in the payment system landscape is the arrival of payment banks. The goal behind creating these banks is to bring about financial inclusion by providing

- i) Small savings accounts and
- ii) Payments of remittances services to migrant labour work force, low income households, small businesses and other unorganized sector users.

The RBI has released the guidelines for licensing of payment banks in the private sector and has given in-principle approval to 11 applicants valid for 18 months to fulfill the guidelines and other conditions as may be stipulated by the Reserve Bank of India. The following main features of these banks are important to note:

- a) These payment banks can raise deposits upto Rs. 1 lakh but cannot offer loans.
- b) The payment banks can invest the deposits received only in to government securities.
- c) They can issue ATM and debit cards which will work on all banks' machines.
- d) They can enable transfers and remittances through mobile phones so as to facilitate an automatic payments of bills and purchases through cashless, cheque less transactions.
- e) Payment banks cannot accept NRI deposits but can provide forex cards to travelers.

Payment banks are an attempt to widen the payment space by bringing migrant labours, low income households, small businesses, village people and poor citizens into the digital payment system network. Payment banks will enable them to send money home easily while working in cities, avail direct transfer of government benefits and subsidies schemes and transact for the small amounts electronically instead of making only cash payments. It is expected that the payment banks will provide low cost platforms to the beneficiaries and move India more towards a cashless economy.

10. Concluding Observations

In India, there are several payment system initiatives led by Reserve Bank of India to increase the usage and penetration of electronic payment modes among Indian masses. As a consequence, the share of paper based clearing have dropped both in terms of value and volume over the years. The cards and retail electronic clearing rule the world of e-payments in terms of volume. However, RTGS and CCIL operating system take load of more than 90% of e-payments in terms of value. The new innovations such as payment gateways, pre payment instruments, payment banks, payment aggregators such as Pay Gov India are disrupting cash. A whole new payment system is constantly evolving in India. Efforts are being made by the players

to have a larger connect by tapping new users, understanding their tastes, providing digital e payment services at affordable costs using new mediums such as mobile phones. The message is loud and clear. The dynamism of policy makers (especially RBI), supply side participants,(such as banks, payment gateways, technology providers) and demand side participants (younger population, social media active population, digitally connected labour work force, villagers) is definitely accelerating the pace of electronic payments in India.

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