

Research Paper



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DIGITAL PAYMENT SYSTEM: PROBLEMS AND PROSPECTS

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ABSTRACT

The wind of change in payment system in India is gaining strength by government accelerating financial inclusion, opening new business models and providing impetus to digital payments system. The system offers an unprecedented opportunity to people, most of whom lives in rural India or are migrants in big cities. Traditionally, the field of payments has been bank driven but with the continuous innovation in the technology, payment system is emerging as a distinct industry. Following the demonetization of high denomination paper currency notes, the Government urged small traders to embrace technology by using digital payment systems. It is expected that by embracing technology, we can bring about a big transformation in the form of a cashless society. However, this transformational phase is accompanied by heightened concerns around cyber crime, consumer protection, competition, safety and convenience. The anonymity of cash transaction is a non-trivial barrier to digital payments and is a constant battle between Government and those who evade taxes.

KEYWORDS: Digital Payment, Cashless, Digitalization, Electronic payment

I. INTRODUCTION

The payment landscape in India has witnessed some structural dramatic changes during the last couple of years which is considered a watershed period in the payment industry. In the early 1990s, the Reserve Bank of India spearheaded the development of technological infrastructure that facilitated the creation of a Department of Payment and Settlement System (DPSS). In 2007, the Indian Parliament passed the Payment and Settlement Systems Act. Since the inception, the department continued its focus on migrating to a cashless economy through a process of stakeholder consultation for developing a regulatory framework that is responsive to emerging developments and innovations.

Digital payments can enable greater economic growth, growth in international e-commerce, and aid in

social and financial inclusion. Presently, India represents one of the largest market opportunities for payments. The population is eager to participate in the rapid evolving advancement in technology. The growth of the India cashless payment space is expected to be driven by four trends:

- **Cash being expensive:** Though there are several perceived benefits of transacting in cash (such as instantaneous settlement, relative anonymity, and the notion of security associated with holding physical value), there are several latent and implicit costs associated with cash.
- **Advancement in technology:** Technology has been advancing at a rapid pace to deliver robust, secure and convenient payments solutions. This enables rapid



delivery of payment services to large sections of the population.

- **Economical:** Digital payments allow for services to be delivered at lower costs, afford greater scalability and greater ease of access. This in turn, helps in fostering economic growth and financial inclusion.
- **Government initiatives:** Initiatives taken by the government have created a catalytic environment for the greater proliferation and growth of digital payments.

As and when we transition from nascent cashless economy to a mature one, we would witness a significant drop in cash/paperless based transactions. While the transition in its course would have its own share of pains for different stakeholders owing to overall structural changes that the system would encounter.

II. OBJECTIVE OF THE STUDY

The overall objective of the study is to examine the role of digitization in transforming India into a cashless economy. Following are the objectives of the paper;

1. To assess the infrastructure available in India to support the digital payment system
2. To analyze the different digital modes of payment system available in India
3. To investigate problems and prospects of cashless economy and the challenges in making India a cashless Economy

RESEARCH METHODOLOGY

In pursuance of above objectives the following research methodology was used for this study. The objectives of the study were achieved through collection and analysis of secondary Data.

The secondary data has been mainly drawn from various records and publications of Reserve Bank of India (RBI), Digital India, National Payments Corporation of India (NCPI), Journals and websites of government and non government organization.

III. REVIEW OF LITERATURE

Indian payments industry is undergoing an ecosystem expansion and transformation and at the same time entry of new banks, acquiring and processing companies, is likely to bring unique business model nuance to the fore. With a large number of organizations conducting business this way, it has become evident that the field of e-commerce has a promising future ahead and businesses are going to obtain maximum benefit from it (Abrazhevich, 2004, p.1). Electronic Payments provides greater freedom to individuals in paying their taxes, licenses, fees, fines and purchases at unconventional locations and at whichever time of the day, 365 days of the year [Kaur.k & Dr. Pathak. A, 2015]. However, there are several barriers identified to the adoption of this payment method [Bezhovski. Z]; such as digital literacy, digital usage, fraud, consumers' privacy, application technology, and computer security. So certain measures should be taken to grant this industry a promising future ahead.

IV. FINANCIAL INFRASTRUCTURE IN INDIA

For three decades financial inclusion and financial literacy have been important policy goals on the government's and RBI's agenda. Numerous steps have been taken by the government, RBI along with National Payments Corporation of India (NCPI) such as opening of no frills accounts, relaxation of KYC norms, Pradhan Mantri Jan Dhan Yojna, Aadhaar-enabled payment system, e-wallets and National Financial Switch (NFS) and now, payments banks to leverage technology and introduced newer avenues for banking with the overall objective of improving customer experience, security and ease of transactions.

The evolution of India's financial infrastructure can be divided into three phases:

FIRST PHASE	SECOND PHASE	THIRD PHASE
1984: Introduction of Magnetic Ink Character Recognition (MICR) technology	2001: Internet banking	2010: Immediate Payment Service (IMPS)
1987: First ATM installed in Kolkata	2004: National Financial Switch (NFS)	2012: Adoption of ISO 20022 messaging standard in the Next Generation RTGS (NG-RTGS) system
1988: Computerized settlement operations at clearing houses of RBI	2004-2005: Real Time Gross Settlement (RTGS), National Electronic Funds Transfer (NEFT)	2014: Jan Dhan Yojana, National Unified USSD Platform, RuPay Card, Bharat Bill Payment System (BBPS)
1998-2000: Core banking software	2007 : Mobile banking	2016: Unified Payment Interface (UPI), payment banks, mobile wallets,
	2008: Cheque truncation systems	2017: Bharat Interface for Money (BHIM) app

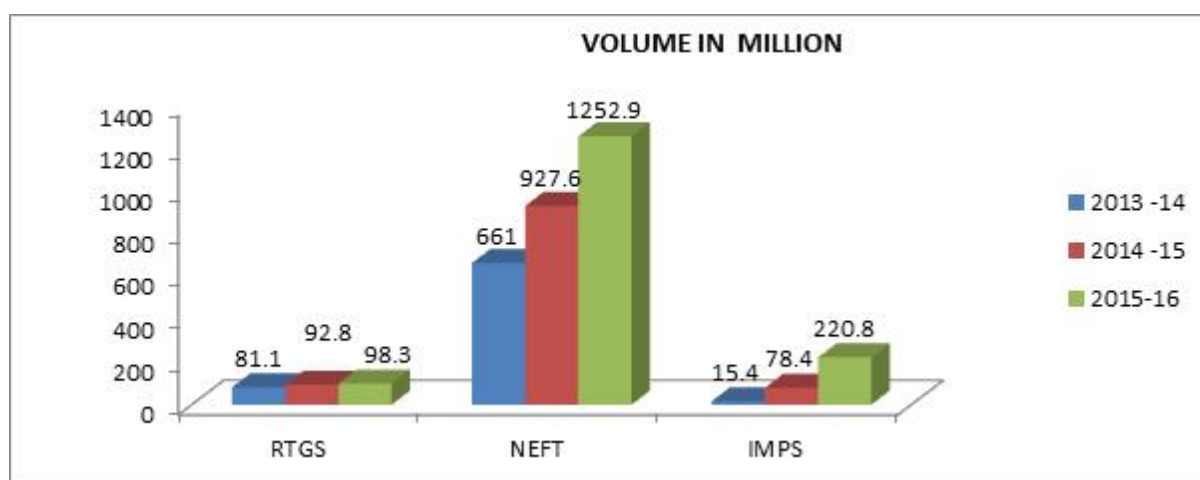
*Source: ASSOCHAM report 2017

Thus, the journey to create a cashless economy remains an ongoing one; there have been several milestones along the way which is to be achieved by Government, RBI, Banks and the other players in the financial infrastructure system to achieve the goal of cashless economy.

V. INDIAN TRASACTION SYSTEM

With the evolution of the financial infrastructure ecosystem, the digital platforms available for payments have transformed. Financial inclusion has gained prominence as the banking system flourished and various platforms were adopted in India. The

combination of regulatory innovation in the form of Payments Bank, institutional innovation in the form of National Payments Corporation of India (NPCI) and establishment of Aadhaar as a digital identity platform, along with the rapid adoption of mobile phones, have laid the foundation for rapid growth in digital payments in India. From the below mentioned graph it is evident that for the period 2014-2016, there has been a significant shift in the volume in the electronic transfer with IMPS mode showing the steepest CAGR of around 279%, followed by NEFT and RTGS showing a healthy double digit growth of 38% and 10%, respectively.



*Source: RBI annual report 2016

The Reserve Bank continued its efforts towards building robust and secure payment and settlement systems for achieving a cashless society. It aims to

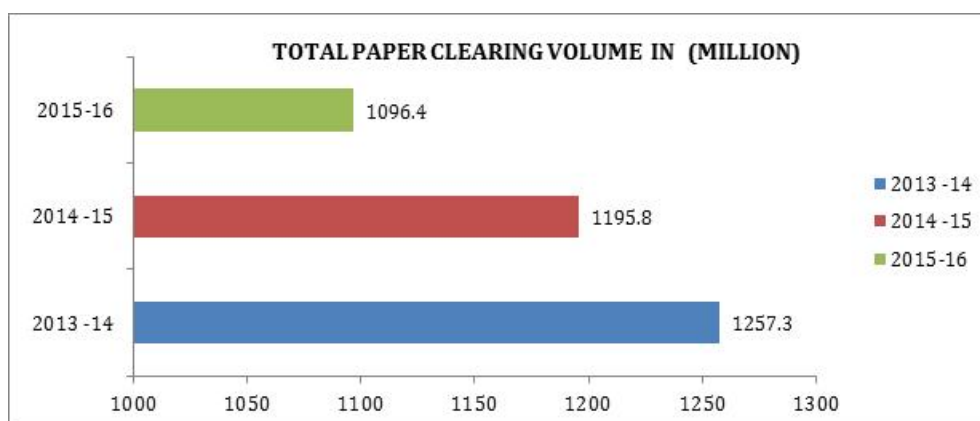
facilitate provision of a payment system for the future that combines the much-valued attributes of safety, security and universal reach with technological

solutions which enable faster processing, enhanced convenience, and the extraction and use of valuable information that accompanies payments. The vision document 2018 of RBI aims at building premier payment and settlement systems for a cashless India which will revolve around central theme of 5C's - coverage, convenience, confidence, convergence and cost, which in turn expected to result in

- Reduction in the share of paper-based clearing instruments,
- Consistent growth in individual segments of retail electronic payment systems viz., NEFT, IMPS, card transactions and mobile banking,
- Increase in the registered customer base for mobile banking,

- Significant growth in acceptance infrastructure and
- Accelerated use of Aadhaar in payment systems.

The payment system initiatives undertaken by the RBI have resulted in deeper acceptance and penetration of modern electronic payment systems in the country. The shares of electronic payments in non-cash payments have shown an upward trend. The main focus is to provide a thrust to modern electronic payments that are safe, simple and low cost for use by all. From the graph below it is evident that there is a gradual decrease in the volume of total paper clearing during the period of 2014 – 2016, a CAGR of 6.62%.



*Source: RBI annual report 2016

Thus, transitioning to digital payments is estimated to bring about a significant reduction in costs incurred on account of inefficiencies associated with cash and other paper based payments. The central government has taken numerous measures to provide incentives to boost digital payment systems across the nation. The incentives can be summed up as follows:

- Digitalization of India
- Conducive Regulatory Environment
- Emergence of Service Provider
- Incentivize Consumers

DIGITALIZATION OF INDIA

The Government aims to transform India into a digitally empowered society and knowledge economy. Digitalization will play a catalyst role in transformation of Indian economy into less cash economy. It will bridge the stark differences between digital “haves” and digital “have-nots” to ensure that government services reach every household in order to create a long-lasting developmental impact. (DeitY, 2015).

- **Smartphone User:** With a mobile subscriber base of nearly 1 billion, India accounted for the second-largest telecom

network in the world. Of this, approximately 240 million consumer uses smartphone and this base is projected to increase to over 520 million by 2020. Hence, it will provide huge opportunity to the technology providers and app developers.

- **Internet Network:** A substantial increase in 3G and 4G connection both in rural and urban areas led to rapid expand of internet connectivity. The National Optical Fiber Network (NOFN) initiated by Digital India is set to provide broadband connectivity to cover 250,000 gram panchayats across rural India. Thus, the growth prospects of the m-commerce industry looks promising considering robust growth in infrastructural touch points such as smartphones and internet penetration.
- **Increase in digital transaction:** Over the years, digital transaction has shown a steady growth which has resulted in decrease in the paper based transaction and will facilitate in transforming the conventional methods of doing trade, business or commerce for goods and services.

CONDUCTIVE REGULATORY ENVIRONMENT

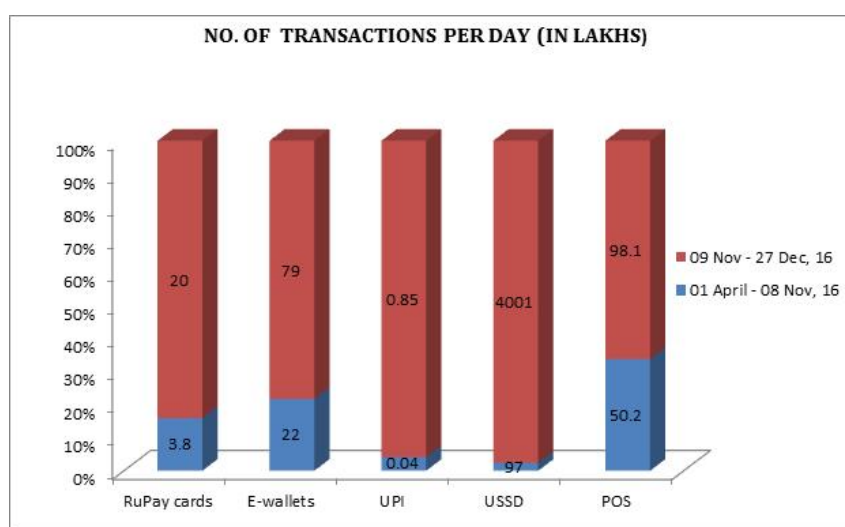
RBI along with government and various agencies works to create and sustain an environment conducive for the development of digital payment systems across the nation which includes accessibility 24 x 7, Large geographical reach, Indirect customer interaction. The key regulatory steps that are currently enabling digital payment in India are as follows:

- **Relaxation of KYC:** As per RBI guidelines, customers are not required to undergo KYC process for transaction of small value i.e Rs 10,000 on prepaid instruments. This guideline will enable the customer to download the wallet of choice and use the same for transaction as against the traditional bank.
- **Exemption from 2FA authentication:** Transaction made using debit card/credit card requires two factor authentication, irrespective of transaction value. Though authentication is necessary for consumer security, it results in transactional drop-offs. Thus, RBI provide exemption to the mobile wallet of two factor authentication when they make transaction, authentication is required only at the time of loading funds from other banks.

The demonetization move has had a huge impact on various sectors of the Indian economy and has significantly impacted the way people transact in daily life. Replacing a large amount of cash over a 50-day period had put humongous pressure on the banking system. This led to the adoption of alternative technology platforms. As a result, both the number and value of transactions through these platforms saw a huge surge.

- **Unified Payment Interface (UPI):** The Unified Payments Interface (UPI) launched by National Payments Corporation of India (NPCI) which offers architecture and a set of standard Application Programming Interface (API) specifications to facilitate online payments. It aims to simplify and provide a single interface across all NPCI systems besides creating interoperability and superior customer experience. Like IMPS, UPI will facilitate round-the-clock funds transfer service.
- **Bharat Bill Payment System (BBPS):** Bill payment is a major component of the retail payment transactions in India where billers provides a variety of payment options to their customers. The Bharat Bill Payment System (BBPS) offers interoperable and accessible bill payment services to customers through a network of agents, allows multiple payment modes and provides instant confirmation of payments.

ANALYSIS OF DIGITAL PAYMENTS DURING THE DEMONETIZATION PHASE

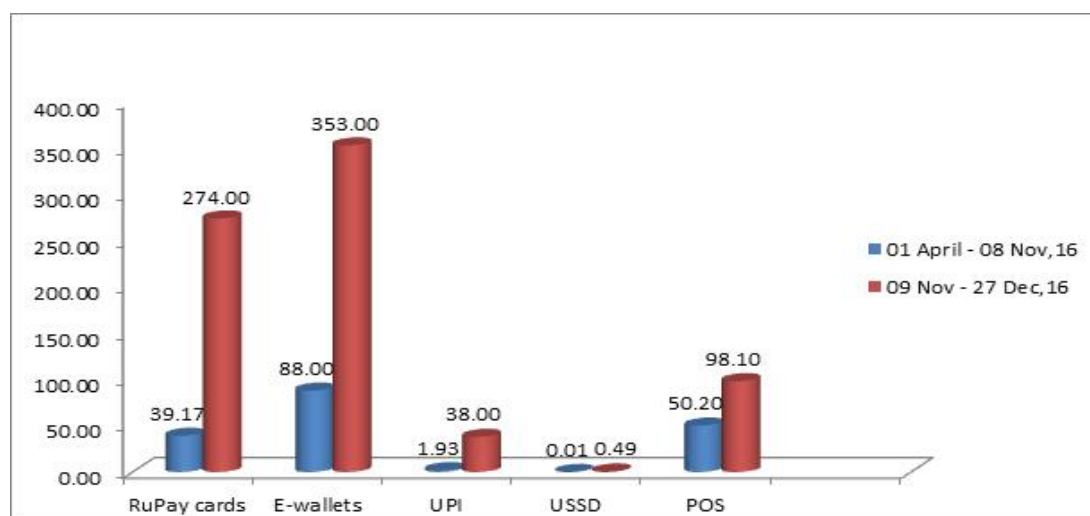


*Source: Ministry of Electronics and Information Technology & ASSOCHAM Report 2016

*Note: Data pertaining to USSD is in hundred and thousand

The number of transactions through RuPay witnessed 425%.2 growths during the period from 8 November to 27 December 2016. The number of transactions through e-wallets saw a massive 301%

increase during the same period. Further, the number of transactions through POS shot up by 95%. Similarly, RuPay, E-wallet, UPI, USSD and POS saw a huge surge in value of transaction per day.



*Source: Ministry of Electronics and Information Technology & ASSOCHAM Report 2016

However, during the 50-days period to boost digital transaction the government announced that no service tax will be charged on digital transactions up to 2,000 INR. Digital payments made for buying petrol and diesel was given a discount of 0.75%. The suburban railway network also announced a discount of up to 0.5% to customers for monthly or seasonal tickets booked through digital transactions. In addition, life and general insurance policies and renewal premiums on public sector undertaking (PSU) insurers' websites provided an 8% and 10% discount, respectively. For payments at toll plazas on national highways using RFID card/Fast Tags, a discount of 10% was made available to users in the year 2016-17.

EMERGENCE OF SERVICE PROVIDER

The payments landscape in India is at a point of inflexion. With intense competition and strategic collaboration among market participants, banks are lowering the costs of banking and underserved and unbanked consumers beginning to find utility in formal financial services, the opportunity will be immense.

- **Banks Wallet:** Banks have now started offering their own mobile wallets in addition to the mobile banking apps which have been proved to seamless and quick, leading to customer preferring wallets for mobile recharge and bill payment. Few includes Payzapp by HDFC Bank, SBI Buddy by SBI, pockets by ICICI, Lime by Axis, Ziggitt by IDFC Bank.

- **Payment Solution by Telco:** To facilitate non-digital savvy customer's in conducting a variety of financial transaction conveniently large companies like Airtel, Vodafone, Idea cellular has launched payment solution like Airtel Money by Airtel, Vodafone M-pesa by Vodafone, Idea money by Idea Cellular, mRUPEE by TATA, Jio Money by Reliance. The primary uses of these solutions were largely mobile recharge and remittance.
- **Prepaid Payment Instrument:** Prepaid Payment Instruments (PPIs) has emerged as a convenient replacement/substitution mode of cash transaction (Muraleedharan. D 2014). PPI issuer do not require 2F Authentication which resulted in emergence of mobile wallet like Paytm, MobiKwik, Freecharge and citrus pay which are for digital savvy customers & prepaid cards like Oxigen, Itz Cash, Suvidhaa and GI Tech which are for non-digital savvy customers. Tech firms acquire the services of some of these PPI's to offer in house in-house wallet solutions.
- **In Principal Approval to Payment Banks:** With the objective of driving financial inclusion, reducing dependence on paper based transaction and increasing digital payment, RBI has given in principal approval to 11 applicants for setting up payment banks in 2015. It aims at providing small savings accounts and

payments/remittance services to migrant labour workforce, low income households, small businesses, other unorganized sector/entities and other users.

Incentivize Consumers

To incentivize consumers and merchants to go for digital payments, the government has launched two schemes that would give cash prizes to consumers and merchants who use digital modes of payments.

The two scheme, Lucky Grahak Yojana and the Digi-Dhan Vyapari Yojana which will be run by the National Payment Corporation of India for 100 days. Under the lucky grahak yojana scheme, 15000 winners will be awarded daily for 100 days, starting from 25 December, 2016 with Rs 1000 each and a weekly cash prize of worth Rs. 50,000, Rs 5,000 and Rs. 2,500 to the merchant's who uses digital mode of payments under Digi-Dhan Vyapari Yojana.

VI. CHALLENGES IN DIGITAL ADOPTION

The banking industry is going through exciting times and technology, digitisation, social media and mobility are changing rapidly altering the way in which we live, work and interact with each other. As the government presses ahead with cash to less cash to cashless economy, the success of the transition will depend on various factors such as:

- **Slow Internet speeds:** India is plagued with very low internet speeds, which continue to inch up but are lower than global benchmarks. As per the Akamai reports Q4 2016 the average internet speed in India is 5.6mbps which is still behind when compared to other countries in Asia Pacific region. India's global rank is 97, a little behind China and Indonesia out of 149 qualifying countries.
- **Risk of Piracy:** The digital media industry has not been able to fully monetize the content due to rampant piracy in India. Weak IP regulations and ineffective enforcement has discouraged players to produce original content and IP.
- **Online Payments:** One of the primary forces impeding the growth of subscription and pay-per-view revenue models are the hassles that the consumer faces while making payments on digital platforms, even when they are willing to pay. This is on account of low credit card penetration, fear of using net banking and credit cards online due to security

threats and the lack of experience of transacting online.

- **Risk of Cyber Fraud:** As the digital channel in financial services continues to evolve, cyber security has become a business risk, rather than simply a technical risk. Security breaches can damage reputations and destroy trust, thereby jeopardizing the investments made in digital solutions. A single hack can ensure millions of accounts being compromised, as it happened in October when 3.2 million card details were stolen in a malware related security breach. These cards from customers of State Bank of India, HDFC Bank, ICICI Bank, Axis Bank and others, were used at ATMs. The stolen debit cards were used in China. The heist is still under investigation, but is almost forgotten in the scramble for a digital payments future.

CONCLUSION

India is at the cusp of transformation as we embark upon the new phase of banking and financial inclusion. New technology in particular has both enabled and in turn been fuelled by a huge influx of new providers and products, all vying to enter the payments space. However, government impetus to digital transaction by demonetization of high value currency notes and providing various initiatives, still majority of transactions are cash based and cash is still king for Indian consumers, hence achieving a 100% cashless society will not be possible in near future, but one can always start from a less cash society and then move towards becoming mostly cashless. Thus, cash continue to play an important role for discrete transactions, especially in the most remote areas and informal sector.

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