

Digital Payments in India: A Review

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Abstract - After the tremendous evolution in mobile phone technology, the government of India has decided to launch a program called "Digital India", through which the government of India is trying to give rise to cashless transactions. To make payments digitally are easy and convenient and most importantly you can make this transaction from anywhere and anytime, all you need is just a smartphone. This program will also create job opportunities in the field of Information Technology (IT) and electronics. The objective of this work is to give information about various modes of digital payments in India and to focus on the technical aspects of digital payments in India.

Key Words: cashless transactions, UPI, BHIM, PoS, NPCI, VPA, PB, RBI, PPI, CIIE.CO etc.

1. INTRODUCTION

On November 8, 2016, the prime minister of India announced a decision to withdraw INR 500 and INR 1000 notes from currency. The motives behind demonetisation are to promote the digital India movement, to make India a cashless economy, to destroy black money, and stop terror financing.

"Faceless, Paperless, Cashless is one of the professed roles of Digital India." [1] Through the digital India movement the government of India pushing India towards a cashless economy. The government of India is also taking several initiatives to promote digital payments.

To convert India into a less-cash economy various modes of digital payments are available which are fast, secure and reliable. A cashless economy promotes various modes of the digital payments system. Aadhar enabled payment system (AEPS), UPI, mobile wallets, internet banking, credit/debit cards, bank-specific mobile apps, Google pay are various popular modes of digital payment infrastructure in India.

A cashless transaction means making transactions between two individuals through digital/electronic means (cannot include any cash or cheque payment) to send and receive money.

Digital payment simply means the transfer of money between two individuals having their accounts in the same bank or different banks.

QR Code-based payment system is also a digital payment system in which payment is made by scanning the QR Code from the mobile app.

The Prime Minister of India is also working towards the digitization of India (DIGITAL INDIA). Thus, both moves DEMONETISATION and DIGITIZATION if worked upon effectively will help the Indian Economy to become Cashless Economy [5].

1.1 DIGITAL INDIA: DIGITAL PAYMENTS

1. Nearly 40 times increase in transactions on UPI since November 2016.
2. 2+ crore downloads of BHIM
3. More than 18 lakh transactions on BHIM per day [1].

1.2 MODES OF DIGITAL PAYMENT

Following modes of digital payments are easy, reliable and it offers convenience to the consumers to make payments anywhere, anytime. Digital payments are made to purchase any services and/or goods. After the demonetisation, not only the businesses but small merchants even started adopting various digital payment methods. The most popular digital payment modes adopted by merchants in India are Google pay, PhonePe, paytm, and PoS machines. These modes of payments made life easier and simpler.

PoS Machines: Point of Sale also called Point of Purchase (PoP) are a hardware device that is used to transfer the payments to the merchants for purchased goods or services. PoS machines are used to read the credit/debit card of the customer. A customer swipes his/her card through the PoS machine and needs to enter the pin in order to complete the transaction. This method of digital payment requires a hardware device, merchant's bank account, internet connectivity and/or sim card. These machines can also generate a receipt for the customer. A PoS machine is a portable, handheld device that has gained a lot of popularity in a small-time.

Credit/Debit Card: Almost all banks provide credit/debit cards to its customers. These cards can be used to make a payment for desired goods and/or services, to make payments using cards you need a PoS machine or a payment gateway. Also, these cards provide more security as it uses a 2-factor authentication i.e., a user will enter his/her pin and an OTP will be sent by the bank on a user's mobile number registered with the bank.

A user of these cards can purchase any item/service from the stores, also can make payments for online shopping and bookings. The user also gets exciting offers, cashback, rewards on making payments using these cards.

UPI: Unified Payments Interface (UPI) is a digital payment method developed by National Payments Corporation of India (NPCI). This interface works on a mobile platform. To make payments using these interfaces a user is required to create a Virtual Payment Address (VPA). To activate this interface you need a smartphone with an internet connection, a bank account, a mobile number registered with a bank. User is required to download and install the UPI app, then create his/her profile by filling personal details, creates a VPA and, then link bank account with the VPA.

This interface is available 24/7. This interface is secure as it provides 2-factor authentication, a user is required to enter a pin and an MPIN in order to complete the payment. BHIM, Google Pay (formerly known as Tez), PhonePe these are various UPI payments app. Bank specific apps are also available for UPI payments. BHIM (Bharat Interface for Money) is a UPI app developed by NPCI.

Using UPI apps users need only one mobile app, using this app users can complete transactions with different bank accounts. UPI is the most popular digital payment mode it has achieved a double milestone has crossed 100 million users in October as well as one billion transactions per month.

Internet Banking: Internet banking also known as online banking is a way of accessing various services provided by banks using a bank website. Using online banking one can transfer funds like National Electronic Funds Transfer (NEFT), Immediate Payment Service (IMPS), Realtime Gross Settlement (RTGS), etc. Nearly all banks offer the Internet Banking facility to its customers. Users can also request certain services using online banking. Online banking helps to reduce the overhead of banks and facilitates customers. Using this facility banking is no more a headache to its customers.

Mobile Banking: Internet Banking and Mobile Banking are similar except screens might change. In mobile banking users make transactions using mobile apps.

All traditional banks provide mobile banking facility. Before digitization peoples have to go to banks, stand in the long queues, and wait for their turn to get their job done. But After digitization peoples need not visit a bank to get their job done. They can do their transactions from their homes. Through mobile banking customers can pay their monthly bills, recharge their phones, transfer funds to anyone, download their account statement, request for a chequebook, debit/credit card and many more.

Mobile Wallets: Mobile wallets are a popular digital payment method which is a mobile app in which a user can store his/her card information and make payments to

merchants or transfer money to one another. With mobile wallets, users are free to carry money, cards or physical wallets with them. To make payments all you need is a mobile device. Mobile wallets provide services like transfer money, view transaction history, an enquiry for account balance, accept money, etc.

Paytm, SBI Buddy, Airtel Money, Jio Money, ICICI Pockets, Vodafone M-Pesa, Freecharge, Mobikwik are various popular mobile wallets.

AEPS: AEPS stands for the Aadhar Enabled Payment System developed by the National Payments Corporation of India (NPCI) to promote cashless transactions in India. To perform banking transactions Aadhar-based verification is required through banking correspondents, micro ATMs, and PoS Machines. This payment method allows its customers to perform banking and financial services using Aadhar. Customers need to provide Aadhar's unique identification number and bank details. This system also enables customers to perform Aadhar to Aadhar funds transfer. This payment method is easy, safe, and secure to use.

USSD: Unstructured Supplementary Service Data (USSD) is a payment method that can work on smartphones as well as general feature mobile phones. For accessing this payment mode there is no need for internet connection.

Customers can benefit from this service by dialling *99#, which is a common number across all Telecom Service Providers (TSPs). This benefits customers by providing services like an enquiry of balance, mini statement of account, fund transfer. *99# works with telecom operator's server and customer bank server.

2. BENEFITS OF DIGITAL PAYMENTS

Digital payments provide a range of benefits to its users, developers, government; it also contributes to the growth of the Indian economy. Digital payments are taking India towards a cashless economy. As technology is evolving digital payments are adopted on a large scale in India. Digital payments have also created a pool of jobs in the IT sector. The success of government's digitization movement highly depends on its ability to put cash out of circulation in the economy. People will choose the most comfortable way available to them for making digital transaction. So, digitization can only be successful if government makes it widespread and convenient.

The following list shows benefits offered by digital payments in India:

24/7 Availability: To withdraw, deposit money, or to avail any service provided by bank individuals will stand in a long queue and wait for their turn. This is a time-consuming process also banks will remain closed on holidays. Digital payment methods save time, individuals can make payments from anywhere, anytime. All these digital payment modes are available all the time, including bank holidays.

Safe and Secure: With cash payment, there is always a possibility that cash may be stolen, and in this case, it is impossible to get the cash back. But digital payment methods provide security to its users. Using the 2-factor authentication user is always aware of its transactions. Also, digital payment apps keep track of all transactions. Modes of digital payments like UPI, mobile wallets reduced the risk of cash and card handling.

Reliable and Convenient: All digital payment modes are reliable, in order to complete any transaction users need not be physically present at the bank, or stand in a long queue outside the ATM. Digital payment modes offer enormous flexibility to users.

Reduced Transaction costs: As per RBI guidelines, there are no charges while making payments through mobile wallets. But certain mobile wallet companies apply charges when money is transferred to user's bank account from mobile wallet.

As per government website, there is no charge for making payments through UPI app. But if a bank account which uses services like NEFT, RTGS, IMPS and from that bank account if a UPI payment is made, then bank may charge for such transactions. To transfer funds using NEFT, RTGS, IMPS different banks may apply different charges. On credit/debit card transactions some monthly transactions are free of cost.

Discounts: Many companies offer great discounts on digital payments. Companies' gives attractive cashback and discount offers on digital payments it also motivates individuals to go cashless. On UPI apps and Mobile wallets, customers get amazing discounts.

RBI is taking several initiatives in order to promote Digital Payments: The Reserve Bank of India (RBI) in its recent statement said that they are going to introduce a new prepaid payment interface (PPI) for digital payments of up to rupees 10,000. To pay bills customer needs to load/reload such prepaid payment interface only from a bank account. As per RBI, the PPI plays an important role in promoting digital payments. This prepaid payment instrument is useful for the purchase of goods and services as well as transferring money. (Mobikwik and Paytm are the examples of such PPIs).

The RBIs aim is to create safe, secure, efficient and reliable payment systems. This consistent efforts result in the rapid development of digital transactions in India.

3. SHORTCOMINGS OF DIGITAL PAYMENTS

Digital payments provide enormous benefits to its users but there are some shortcomings of digital payments too. To make payments customer only requires a smartphone and if this smartphone is lost then it will be a threat to his/her personal information.

Difficult for Techno-Unsavvy Person: Peoples who are unaware of how to use technology, it might be difficult for

them to make digital payments. Peoples living in rural areas face problems like low internet penetration, fewer job opportunities, limited services, etc.

Uneducated or elder persons find it difficult how to download an app, how to complete the registration process, how payments can be done, and etc. transferring money digitally might not be an easy job for them. India is the second-largest country by population.

Almost 70% of Indians live in rural areas. There are many problems with peoples living in rural areas such as less power supply, lack of infrastructure, low internet penetration, etc. so the peoples living in rural areas have to face many barriers in the way of making digital payments.

A Threat to Confidential Information: Users depend on the smartphone for making payments, sometimes users may save their user ids and passwords into their phones, and if that phone is lost then there is a threat to their confidential information. Losing a phone means losing money. Also, hackers will always try to hack these digital payment apps, they will try to steal details like passwords or OTP, and they also make fraudulent calls.

Chances of Overspending: All these digital payment methods facilitate shopping of goods, groceries, and services. This may lead to overspending of money and time.

Aditya Birla Idea Payments Bank is headed for Liquidation: Aditya Birla Payments Bank Limited (ABPB) is a payments bank launched on February 22, 2018. It offers services like Banking, Payments & Payments Systems, UPI, NEFT, IMPS, Third Party Loan Referral, Digital wallet, Group Insurances, etc.

Aditya Birla Payments Bank shutting down its banking operations. This is another important disadvantage of digital payments as the government has not provided any relief for continuing banking solutions (excessive taxes and unsupportive regulations are the reasons). Aditya Birla Payments Bank has said earlier that unanticipated developments made its economic model unviable. Until now Tech Mahindra, Cholamandalam Investment and Finance Company, IDFC Bank Ltd and Telenor Financial Services had announced to shut their payments bank.

Vodafone M-Pesa closes their business in India: Vodafone's M-Pesa is a mobile phone-based banking service launched in India in 2013. From Reserve Bank of India, eleven companies including Vodafone and Idea cellular took the PBs(Payments Bank) licenses. M-Pesa provides services like money transfer, financing, it allows users to deposit, withdraw, pay bills for goods and services with a mobile device. Vodafone M-Pesa got a huge success in many countries e.g. in Kenya it is hugely popular. But Vodafone M-Pesa shut their operations in India, they surrendered their PPI license on 1st October 2019.

Out of eleven license players, only four are operational the reasons behind shutting down the operations are regulatory restrictions are tight by RBI, lack of awareness, etc. The PBs will grow and expand only if they get government and regulatory support.

4. FUTURE SCOPE OF DIGITAL PAYMENTS IN INDIA

All UPI-based payment systems require a smartphone to make a digital payment. But what if one cannot own a smartphone, or unable to handle a smartphone, these tech-unsavvy persons can operate only feature phones. In India rural as well as the poor community has not adopted digital payment modes yet. There is a need to develop a digital payment solution for feature phone users. Recently Bill and Melinda Gates foundation along with NPCI and CIIE.CO (IIM Ahmedabad's Centre for Innovation Incubation and Entrepreneurship) will come together to launch a "Grand Challenge" for innovators to develop a digital payment system for feature phone users in India. This initiative is taken to encourage digital payment systems.

As per CIIE.CO India is a home of half-billion users. Any innovator who will develop such a payment system for feature phones will get a reward of \$50,000. The Grand Challenge was launched in Bangalore with a panel discussion titled 'Payments using Feature Phones: Opportunities and Challenges'. Currently, in feature phones, there is no facility for instant money transfer, this challenge aims to develop a payment system that is easy and secure for feature phone users in India.

Recently Google play store also added UPI as a payment option for users in India for purchasing games and Apps. Users need to link their VPA with Google play store billing and thus are free to purchase from the bank account.

5. CONCLUSIONS

Government of India is trying to make India a cashless economy, the government has to take necessary steps in providing facilities to rural areas like regular power supply and internet. Demonetization had a positive effect on Indian economy. After demonetization peoples tried seeking different modes of making payments. The government has to take measures to increase liquidity so that companies can also survive and provide more benefits to its customers. The major concern while making digital payments is the cyber security. Sharing your personal information over the internet is risky, the government has to create a secure cyber-space.

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