# 8. INNOVATIVE MODES OF DIGITAL PAYMENTS OVER A DECADE IN INDIA

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## ABSTRACT

*Technological advancements have brought drastic changes in exchange of money from hand to hand to account to account transfer by a click. In digital payments, money is transferred from one bank account to another bank account. To transfer the money on bank account, innovative modes of digital payments are available such as banking card, internet banking, e-wallet, mobile banking, Aadhar Enabled Payment System (AEPS), prepaid card, Unstructured Supplementary Service Data (USSD), Unified Payment Interface (UPI) and Micro ATM. Therefore, this paper aims to explore the different modes of digital payments and its requirements to carry out the transaction. Results indicates that each method of digital payments has the basic necessity of bank account but still the requirements for making transaction differ with each mode. Flourishing innovative methods of digital payments and the efforts of Indian government, has shown an increasing trend in volume of digital transactions from 2070.95 crores in 2017-18 to 5487.12 crores in 2020-2021. Digital payments methods are expected to grow fast and estimated to double their contribution to 30 per cent in the digital payments industry. To make India, a Cashless nation, each and every method of payments should reach the people and so the people will get an opportunity to select the method to their ease and convenience.*

***Keywords: Innovative, Modes of Digital Payments, Transaction and Requirements***

## INTRODUCTION

The world has been experiencing the technological revolution in the digital payments techniques, which has led to the existence of innovative modes of digital payments. There are certain method which needs just 6 numbers as Personal Identification Number (PIN) and click 'ok', to complete the transaction. Innovative modes of digital payments have accelerated the growth of digital transactions, which has made the people to use digital modes for purchasing essentials. This shows that to enhance digital payments, literacy in technology is the need of the hour rather than literacy in education. "The world Payments Report 2020" highlights, 41 per cent of cash users tried contact less cards, 35 per cent who owned a card added it to digital wallet, 27 per cent of customers experimented with Quick Response (QR) code payments. 62.4

per cent of the survey people use credit card, 52.7 per cent of them use debit card and 48.9 per cent of them use internet banking. Thus it is revealed that, all the methods of payments have come down in race to achieve their targets in digital transactions in volume and in value. The best and user friendly methods will reach the common man.

In India, paper based payments was 61.4 per cent in 2020, which is forecasted as 28.3 per cent in 2025. In 2020, number of digital transactions was 25.5 billion transactions, which is forecasted as 85.7 billion transactions in 2025. The forecasted volumes and values are yet to be achieved with the support of modes of digital payments.

## STATEMENT OF THE PROBLEM

Digital India Programme was initiated in 2015 by Government of India to transform India into a digitally empowered society. 'Governance and Services on Demand' is one of the key vision area of Digital India Programme with a component of 'Making financial transactions electronic and cashless'. After that, in 2016, Prime Minister Shri Narendra Modi announced demonetization, this popularised digital payments system in the country, but it was adopted by a limited number of people. In 2020, due to outbreak of panademic disease COVID 19, there has been drastic changes in the payment systems of the country, where by people slowly adopted the digital payments. To encourage digital transactions, various modes of digital payments are made available. In this context the researcher makes an attempt to study the different modes of digital payments that are sited in the website of http://cashlessindia.gov.in.

## REVIEW OF LITERATURE

There is increase in number of online services and payment applications in urban areas, while rural area is still crawling due to lack of knowledge and internet illiteracy. Among the people using digital payments, 39.3 per cent of them use debit/credit cards for payment, 29.5 per cent of them use paytm. 39 per cent of them respondents use net-banking for high value transactions because all the security measures are ensured by the bank (Upadhyay Joshi et.al., 2019). Paytm (Rank I) is the most preferred E-Wallet in Tirunelveli followed by Pay U Money (Rank II) and Google wallet (Rank III) (Miruna Lyrics 2019). In the preferred mode of payment, Mobile wallet occupies first rank followed by mobile banking (Roy Biju 2018). 100 per cent of respondents are having idea about debit/credit card, 2 per cent of them are having idea about National Electronic Fund Transfer (NEFT) (Thyagarajan and Revathi 2018)

## OBJECTIVES OF THE STUDY

The general objective of the study is to make an analysis about different modes of digital payments.

The following are the specific objectives,

- To explore the different methods of digital payments as categorized by Government of India under Digital India Programme.

- ❖ To analyse the requirements for making transaction through different methods of digital payments.

## METHODOLOGY

The study is based on secondary data. The materials were collected from books, journals and newspapers. Relevant websites and reports have been consulted in order to make the study an effective one.

## DIFFERENT MODES OF DGITAL PAYMENTS

The researcher has taken nine methods of digital payments which are cited in the website of http://cashlessindia.gov.in. The researcher personally went with all the nine methods of digital payments for practicality and out of researcher experience, the requirements of transactions are given.

### 3.7.1. UNIFIED PAYMENT INTERFACE (UPI)

The National Payments Corporation of India (NPCI) introduced UPI in 2016. The Unified Payment Interface is designed in the form of mobile application. The National Payments Corporation of India (NPCI) has made the UPI mobile application –Bharat Interface for Money (BHIM). There are various banking application which work on this system such as SBI Pay (State Bank of India), iMobile (ICICI Bank), HDFC Bank MobileBanking (HDFC) and Axis Pay (Axis Bank). There are also private mobile application with UPI features such as Google Pay, Phonepe, Mobikwik, Freecharge, Chillr, iMobile and Paytm.

**Requirements for carrying out transaction**

- The user must have a saving or current bank account.
- The user should have a registered mobile number.
- Access to internet is required
- Unified Payment Interface (UPI) app is to be installed in the mobile, to use this app, smartphone with Android or iPhone Operating System (iOS) is needed.
- Unified Payment Interface Personal Identification Number (UPI PIN) is required for completion of transaction

### 3.7. 2. UNSTRUCTURED SUPPLEMENTARY SERVICE DATA (USSD)

USSD (Unstructured Supplementary Service Data) uses 'Quick Codes' or 'Feature codes' under Global System for Mobile Communications (GSM) protocol which is used to send text messages. USSD is initiated by Government of India and developed by National Payments Corporation of India (NPCI) in 2014. USSD is similar to Short Message Service (SMS). It can be started by dialing *99#, then a screen appears to select the language and then first four letters of bank Indian Financial System Code (IFSC) or bank name is to be entered. With

USSD, users interact directly from their mobile phones by making selections from various menus.

**Requirements for carrying out transaction**

- Open a bank account by providing Know Your Customer (KYC) information.
- Ensure that the mobile number is linked to the account.
- Unified Payment Interface Personal Identification Number (UPI PIN) is required to complete the transaction, it can be set after dialing *99*#.

### 3.7.3 AADHAAR ENABLED PAYMENT SYSTEM (AEPS)

National Payment Corporation of India developed the Aadhaar Enabled Payment System (AEPS) in 2010. Aadhaar Enabled Payment System is a system that allows to carry basic banking transactions in distant places, this helps people in remote villages. It helps the individuals to carry out financial transactions on a Micro-ATM machine in AEPS service centre through the Business Correspondent (BC)/Bank Mitra (agent of the bank) using the Aadhaar authentication. It supports transaction between aadhar linked bank account only.

**Requirements for carrying out transactions**

- The user must link the aadhaar to a bank account.
- To carry out the transaction aadhaar number or banking card is required
- The user has to impress the fingerprint in bio-metric device for verification in case of using aadhar unumber.
- The user has to press the banking card Personal Identification Number (PIN) in case of swiping banking card.
- Mobile number is required to receive One Time Password (OTP)

### 3.7.4. E-WALLET

Oxigen wallet is the first wallet launched in India in 2004. An e-wallet is a software application, used in mobile phones, tablet and laptop. An e-wallet needs to be linked with the individual's bank account to make payments. It stores the users account details digitally for payments which are done in online. Types of e-wallet includes closed wallet, semi-closed wallet and open wallet.

**Requirements for carrying out transaction**

- The user must have a saving or current bank account.
- To use e-wallet, smartphone with Android or iPhone Operating System (iOS) is needed.
- The Smartphone should have 3G/4G connection to avail its services.
- E- wallet application is to be installed in the smart phone

- The user has to use Unified Payment Interface Personal Identification Number (UPI PIN) for completion of transaction

### 3.7.5. BANKING CARD

The most common types of payment cards are credit cards and debit cards. Payment cards are usually embossed plastic cards, 85.60 × 53.98 mm in size, which comply with the International Standard for Organisation (ISO) 7810 ID-1 standard. They usually have an embossed card number conforming with the International Standard for Organisation (ISO) 7812 numbering standard. Most commonly, a payment card is electronically linked to an account or accounts belonging to the cardholder. These accounts may be deposit accounts or loan or credit accounts, and the card is a means of authenticating the cardholder. Payment cards require two factor authentications. Factors of authentication includes Knowledge factor (PIN), Possession factor (ID card, Smart phone) and Inherence factor (Fingerprint, face or voice).Generally the Payment cards can be distinguished on the basis of its features. They are debit card, credit card, smart card, charge card, fleet card, gift card and store card.

**Requirements for carrying out transaction**

- The user must have a saving or current bank account.
- Debit card number, Card Verification Value (CVV) and expiry date of the card is required to complete the transaction in online.
- Visit an Automatic Teller Machine (ATM) to activate (Personal identification Number) PIN
- Banking card Personal Identification Number (PIN) is required to complete the transaction in offline
- Registered mobile number to receive One Time Password (OTP)

### 3.7.6. MOBILE BANKING

First mobile banking app – iMobile was introduced by Industrial Credit and Investment Corporation of India (ICICI) bank in 2008. Mobile banking is a service provided by the bank that helps the customer to transfer funds, download transaction history, view loan account by using mobile phone or tablet. It uses software, usually called an application, provided by the banks for the purpose. Mobile banking application can be downloaded from playstore. Each Bank provides its own mobile banking application for Android, Windows and iOS mobile platform(s). e.g. –iMobile for ICICI bank, Kotak Bank App for Kotak Mahindra bank and Yono SBI app for State bank of India

**Requirements for carrying out transaction**

- The user must have a saving or current bank account.
- Access to internet is required

- Smart phone with registered mobile number is required to receive OTP
- Mobile banking application is to be installed in the smart phone
- Mobile banking Personal Identification Number (MPIN) is required to carry out the transaction

### 3.7.7. MICRO ATM

Infrastructure Development Finance Company (IDFC) introduced Micro ATM in 2016. Micro ATM is a electronic device used by the Business Correspondents (BC) to deliver basic banking services. Business Correspondents could be a local shop owner and act as 'micro ATM' to conduct instant transactions. When a person is in the need to send money during non-working hours of bank, micro ATM are more useful since business correspondents are available after the working hours of the bank. To do transaction in micro ATM, customer has to get their identity authenticated by aadhar or bank account number. Business Correspondent act as a banker for the customer, when the customer withdraws the funds, it comes from the drawer of business correspondent and when a customer transfers fund, it will be from his bank account.

**Requirements for carrying out transaction**

- The user must link the aadhaar to a bank account.
- To carry out the transaction aadhaar number or banking card is required
- The user has to impress the fingerprint in bio-metric device for verification in case of using aadhar unumber.
- The user has to press the banking card Personal Identification Number (PIN) in case of using banking card.
- While using banking card, Mobile number is required to receive One Time Password (OTP)

### 3.7.8. BANKS PREPAID CARDS

First prepaid card in India was introduced for travelers by Axis bank in 2011. A prepaid card is a payment card with a monetary value stored on the card itself, not in an external account maintained by a financial institution. Prepaid cards can be used where network access is difficult or expensive to implement, such as parking machines, public transport systems, closed payment systems in locations such as ships or within companies. Prepaid cards are very different from credit cards. By using credit card, borrowing of money can be done. Using prepaid card, borrowing of money cannot be done but it can be used to spend money which is already loaded onto the card in advance. The prepaid instruments can be issued as smart cards, magnetic chips, internet accounts, mobile wallets, paper vouchers and any such instruments used to access the prepaid amount. Types of prepaid instrument includes closed system, open system, semi-closed system and semi-open system.

**Requirements for transaction**

- Apply to the bank or non-bank entities for prepaid card directly in person or through online websites
- The user has to activate the prepaid card
- The user has to load money in the pre-paid card at merchants outlets or transfer money from other accounts or through payment apps
- Personal Identification Number (PIN) is required to carry out the transaction in offline
- Card Verification Value (CVV) number and access to internet is required in case of online transaction

### 3.7.9. INTERNET BANKING

Internet banking was first introduced by ICICI bank in 1998. Internet banking is also known as online banking, e-banking or virtual banking, is an electronic payment system which helps the customers of a bank or other financial institution to do the financial transactions through the financial institution's website. Beneficiary registration is to be done, then it will be easy to make transaction. Beneficiary is a person who receives benefit from a particular entity or a person. To register a beneficiary, following information such as beneficiary name, account number and bank address are required. Types of internet banking include National Electronic Fund Transfer (NEFT), Real Time Gross Settlement (RTGS), Immediate Payment Service (IMPS) and Electronic Clearing System (ECS).

**Requirements for transaction**

- To access internet banking facility, a customer need to register with the bank for the internet banking facility.
- The user should have registered mobile number to receive OTP and e-mail id for customer verification.
- Smart phone or laptop is required to carry out the transaction.
- The user should have access to internet
- A browser that supports 128-bit encryption (i.e. Internet Explorer 11, Microsoft Edge, Mozilla Firefox 35 or higher, Google Chrome 31 or higher)
- User name, password and transaction password is required to carry out the transaction
- Adobe Acrobat Reader latest version (for online statement viewing)

## FINDINGS

- Aadhar Enabled Payment System (AEPS) and micro ATM method of payments require Business Correspondents (BC) and Micro ATM machine to carry out the transactions.

- All the methods of digital payments except Unstructured Supplementary Service Data (USSD) method of payment require smart phone and good internet coverage to make digital payments.
- Bank account and a registered mobile number is mandatory to carry out the transactions through all the methods of payments
- Aadhar card must be linked to the bank accounts of the customer to carry out the transaction through Aadhar Enabled Payment System (AEPS) and micro ATM.
- Internet Banking facility can be availed only after giving requisition form to the bank for the services of internet banking, this helps to download the account statements at free of cost.
- E-wallet, Unified Payment Interface (UPI) and mobile banking applications can be downloaded from the play store or apple app store to use those methods of payments.
- Unified Payment Interface (UPI) method of payment has the feature to operate numerous bank accounts of different bank under a single app.
- One Time Password (OTP), Personal Identification Number (PIN), finger print and swiping of cards are used as authentication in digital payments.

## SUGGESTIONS

- Policy makers can give subsidy for manufacture of smart phone so it will be available at reasonable rate. This in turn supports the common man to buy smart phone and use it for digital payments.
- Service providers of digital payments can stick on to two factor authentication, since the security issues are questioned in the methods of payments with one factor authentication. Two factor authentication will reduce the cyber crime in digital payments and thus enhances the usage of digital payments.
- Digital payment service providers can launch more towers with high speed internet connectivity which in turn facilitates the people to use various methods of digital payments.
- User of digital payments should ensure the availability of registered mobile number, since OTP is sent to the registered mobile number only which is to entered within the stipulated time, this in turn avoids the unnecessary tension in making digital transactions.
- The users of digital payments should keep their mobile, Permanent Account Number (PAN), aadhar number, user name, password, account details and the banking card safe and secure. It helps them to avoid any mishandling or misuse of money in their accounts.

## CONCLUSION

Each and every day the methods of digital payments, infrastructural facilities for doing digital payments and service providers on digital payments are increasing. Most of the private and public sector banks are encouraging their customers to do digital payments. Government initiates various schemes to create awareness and to increase the usage in different methods of

digital payments. With simple steps and just a click the digital payments are made easily and quickly during this panademic period and so there has been a growth in digital transactions this is a welcoming sign for cashless society.

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