



Central Board of Secondary Education

# FINANCIAL LITERACY

MODULE III

**NPCI**  
भारतीय राष्ट्रीय भुगतान निगम  
NATIONAL PAYMENTS CORPORATION OF INDIA

# Preface

The world of academia has an important responsibility to meet the requirements of the practical world and prepare students with the knowledge and skills that they require to adapt to the new world order. In this direction, it is prudent to expose them to such concepts early on their educational journey.

This handbook on 'Financial Literacy' is a step in this direction. Based on a comprehensive curriculum developed by the National Payments Corporation of India (NPCI), the handbook covers the most relevant financial concepts that any individual requires irrespective of the chosen area of profession.

The underlying thought behind creating this workbook is to instil a sense of financial literacy among students at an early age. This will enable them to cultivate the required financial quotient as they grow up to be responsible adults.

Due care has been taken to keep the book content simple and easy to understand. The progression of topics too is carefully designed as it transitions from the most fundamental concepts of money to contemporary topics such as digital banking and mobile wallets.

We sincerely hope that the handbook is well received by the students and they are able to leverage the learnings provided therein. Any suggestions for the improvement of the book are welcome.

**Chairperson, CBSE**

# Acknowledgements

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# Unit 1:

## Teamwork

### Learning Objective:

The objective of this unit is to enable students to appreciate various roles adopted by members in a team

This unit focuses on:

- Recalling the concept and benefits of teamwork
- Explaining the roles adopted by team members

### Learning Outcomes:

| Location  | Learning Outcome                                    | Knowledge Evaluation   | Performance Evaluation                                   | Teaching and Training Method   |
|-----------|---|--|--|--|
| Classroom | Understand the meaning of Team                      | Describe the meaning of a team                                   | Describe the concept of team enumerate its benefits      | Interactive Lecture : Meaning of Team  |
|           | Identify the unique roles performed by team members | Explain the different ways in which members contribute to a team | State the various types of roles adopted by team members | Interactive Lecture : Team Roles<br><br>Activity: Enlist the roles demonstrated by members in a team that you are part of. For example: sports/ house team |

# 1. Teamwork

## 1.1 Definition of Team

As you have already learnt, a team is a group of people who come together to perform individual tasks to achieve a common goal or objective.



## 1.2 Benefits of Teamwork

Do you recall the key benefits of working as a team? These include:

- Higher Productivity
- Better Cooperation
- Creativity and Problem Solving
- Sharing of Work
- Learning and Motivation

## 1.3 Team Roles

Did you know that each member in a team performs a unique role on the basis of his/her competencies? Let's learn about these roles:

**Shaper:** An individual who has a clear sense of direction and drives things forward

**Implementer:** One who is able to turn words into action and is able to get things done

**Coordinator:** Demonstrates leadership abilities and is able to manage group dynamics

**Resource Generator:** Gathers and provides the necessary information for smooth working of team

**Plant:** Generates random set of ideas and creative solutions, though some of them may not be practical

**Specialist:** Demonstrates specialist knowledge and expertise, which may or may not be useful for the team

## Summary

- A team is a group of individuals formed with the objective of achieving a common goal.
- Working as a team provides specific benefits such as enhanced performance and creativity.
- Each member in a team performs a certain role and accordingly contributes towards team performance.

## Useful Link

<https://www.skillsyouneed.com/ips/team-working.html>

## Unit 1: Self-Test Questions

### Choose the correct option(s)

1. Working in a team leads to:
  - a) Increased Creativity
  - b) Increased work burden
  - c) Increase time spent on work
2. An individual who demonstrates leadership skills in a team is known as:
  - a) Plant
  - b) Shaper
  - c) Coordinator

### Answer in brief

1. List down any two benefits of teamwork:

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2. What is the difference between a Specialist and Resource Generator?

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# Unit 2:

## Introduction to Financial Literacy

### Learning Objective:

The objective of this unit is to make students aware of basic financial concepts

This unit focuses on:

- Basic financial terms
- Trade and Money
- Bills/Cash Memos

### Learning Outcomes:

| Location  | Learning Outcome                           | Knowledge Evaluation  | Performance Evaluation   | Teaching and Training Method   |
|-----------|--|---|--|--|
| Classroom | Understand basic financial concepts        | Explain the meaning of basic financial concepts   | Demonstrate the understanding of basic financial concepts  | Interactive Lecture : Basic financial terms<br><br>Activity: Search on the Internet to identify which organisations provide loans apart from banks |
|           | Summarise the evolution of trade and money | Chart the evolution of trade and how it is connected with the development of money system | Articulate concepts such as barter system and how they played a role in the evolution of trade and money | Interactive Lecture : Evolution of trade and money   |
|           | Describe the concept of Bill/Cash Memos    | Understand how bill/cash memos work   | Appreciate the importance of bill/cash memos in business   | Interactive Lecture : Bill/Cash Memos<br><br>Activity: Discuss with your Social Science teacher to obtain more information about bill/cash memos   |



## 2. Introduction to Financial Literacy

Have you ever wondered why financial literacy is important? You may have had discussions with your parents or elders in the family about the importance of money.



As you must have realised while using your pocket money how it provides you the flexibility to buy the things you **need** or **want**.

### 2.1 Needs and Wants



You may also recall the differences you have learnt between a 'need' and 'want'. A 'need' is something that is necessary for your survival and living standard such as wholesome food and comfortable clothing.

On the other hand, a 'want' is a thing that your heart desires to derive more satisfaction or enjoyment from life. Wants include things such as fancy car, lavish house and eating out in restaurants.

## 2.2 Understanding Basic Financial Concepts

Money and finance being important aspects of life, it is important that all of us possess some basic knowledge about various terms associate with the same.



|                |  |
|----------------|--|
| <b>Bank</b>    | A bank is a financial institution which is authorised by the Government to receive deposits from account holders and issue loans. Banks also offer other services such as currency exchange, wealth management and safe deposit boxes. |
| <b>Account</b> | An Account is an accurate record of all transactions including debit and credit relating to an account holder  |
| <b>Income</b>  | Income is money that an individual or business earns by providing a good, service or the use of assets   |
| <b>Loan</b>    | A loan is a sum of money that is offered as debt or advance usually by a bank, to an individual, a corporation, financial institution, or government on specific set of terms and charges in the form of interest                      |

## 2.3 Barter System



As you have learnt that before the development of money system in the world, people used to trade using the Barter System.

To explain simply, it is a system of exchange in which any two individuals mutually exchange a product that they individually require. There are some pre-conditions for such an exchange to happen:

- Person A should have a product that person B requires and vice versa
- They should be ready for the exchange at the same time
- The products being exchanged should be of similar value

## 2.3 Money and Trade

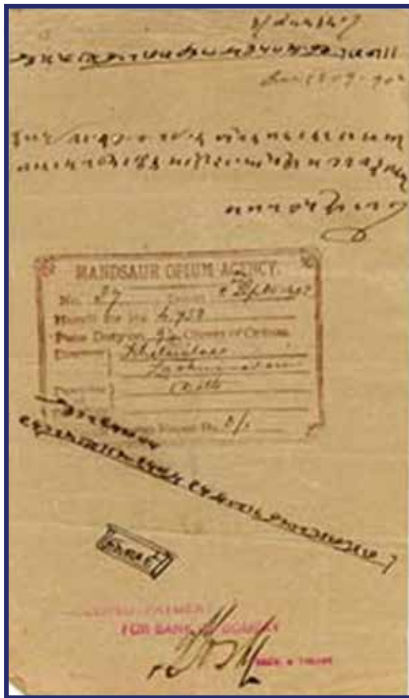


Money and trade are highly inter-connected. Historically speaking, the evolution of money has impacted the growth of trade across the world.

Historical records show that even in prehistoric times, much before the development of money, civilisations such as Harappa and Mohenjo-Daro had established trade connections with Mesopotamia and traded in gold, silver, copper, coloured gemstones, beads, pearls, sea shells, terracotta pots, etc.

The Han Dynasty, which ruled China from 206 BC to 220 AD, opened up the 'Silk Road' trading route between China and Central Asia. Various kinds of merchandise travelled along the Silk Road, making it one of the oldest routes of international trade in the world.

## 2.4 Bill/Cash Memos



Courtesy: RBI.org

Before the formal system of banking came into existence in our country, documents such as Hundi and Chitti were in use for carrying out business transactions and enabling money transfer. Hundi as an instrument of exchange, which was prominent in the subcontinent, involved a contract which — (i) warrants the payment of money, the promise or order which is unconditional (ii) capable of change through transfer by valid negotiation.

Indigenous banking system also played an important role in lending money and financing domestic and foreign trade with currency and letter of credit. Subsequently, with the development of banking, people began to deposit precious metals with lending individuals functioning as bankers or Seths, and money became an instrument for supplying the businesses with funds.

## Summary

- A bank is a financial institution which is authorised by the Government to receive deposits from account holders and issue loans
- An account is an accurate record of all transactions relating to an account holder
- Income is money that an individual or business earns by providing a good, service or the use of assets
- A loan is a sum of money that is offered as debt or advance usually by a bank, to an individual, a corporation, financial institution, or government
- Barter is a system of exchange in which any two individuals mutually exchange a product that they individually require
- Before the formal system of banking came into existence in our country, documents such as Hundi and Chitti were in use for carrying out business transactions and enabling money transfer

## Abbreviations

|     |  |
|-----|--|
| RBI | Reserve Bank of India  |
| BC  | Before Christ (or the labelling of dates before the birth of Jesus Christ in Julian or Gregorian calendars)  |
| AD  | <i>Anno Domini</i> (literally meaning 'the year of our lord'; the labelling of dates after the birth of Jesus Christ in Julian or Gregorian calendars; also known as CE or 'common era') |

## Unit 2: Self-Test Questions

### Choose the correct option(s)

1. Which of the following has provided the key impetus to the development of trade across the world?  
a) Gold                                      b) Money                                      c) Oil
2. Identify the correct term that stands for "an accurate record of all transactions including debit and credit relating to an account holder"  
a) Account                                      b) Bank                                      c) Currency
3. A product that is necessary for your survival is known as:  
a) Want                                      b) Need                                      c) Aspiration

**Answer in brief:**

1. Describe the meaning of 'Loan' in your own words:

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2. What is the importance of cash memos in business?

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**True/False:**

1. Barter System has various limitations that led to the development of money ( )  
2. There is no evidence of trade having occurred in ancient India ( )



# Unit 3:

## Banking

### Learning Objective:

The objective of this unit is to make students aware of the purpose and function of Banks

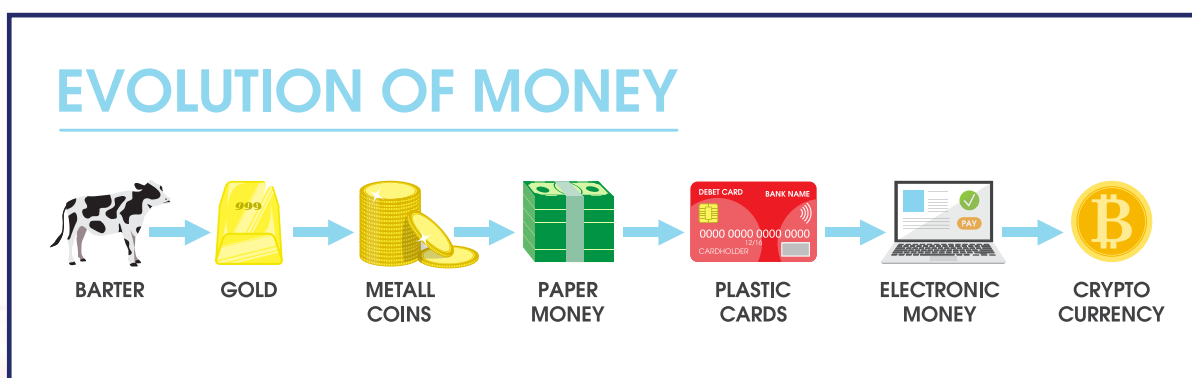
This unit focuses on:

- Importance and purpose of Banks
- The various functions performed by Banks

### Learning Outcomes:

| Location       | Learning Outcome                              | Knowledge Evaluation   | Performance Evaluation                             | Teaching and Training Method   |
|----------------|---|--|--|--|
| Classroom/Bank | Understand the purpose and functions of Banks | Describe the importance of banks and their purpose as financial institutions | Appreciate the role played by banks in the economy | Interactive Lecture : Role and importance of banks<br><br>Activity: Make a list of public sector commercial banks near your home or school |

### 3.1 Evolution of Money



The evolution of money has been closely interlinked with the growth of human civilisation, trade and commerce across the world. With the increase in volume of business and transactions, merchants felt the need for a stable platform enabling business transactions.

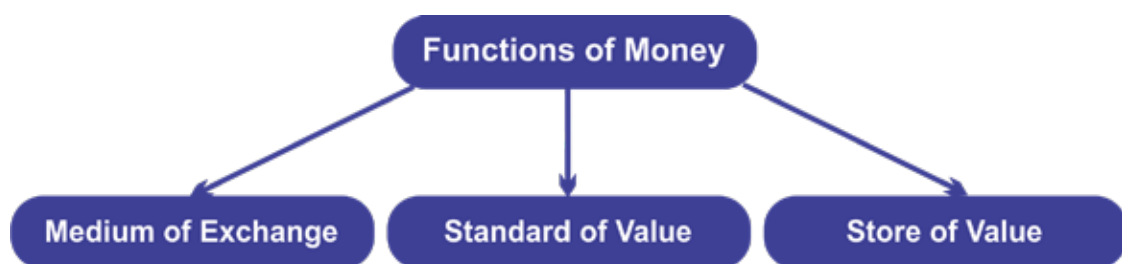
Let us look at this evolution in the form of a sequence:

- **Barter System** involving the use of commodities such as beans, butter and tobacco leaves
- Use of **Gold** as a medium of exchange
- Ancient **Metal Coins** used by various ancient civilisations including India
- Use of **Paper money** as a convenient form of exchange
- **Plastic Cards**, a modern day invention that makes transactions quick and efficient
- **Electronic Money** in the form of digital banking facilities

### 3.2 Importance of Money



In this context, it is also important to know why money holds so much importance to human life and business. Primarily, money serves three key functions as explained in the diagram below:



**Medium of Exchange:** This is the most common use of money as it is an accepted form of exchange in the market. It helps us buy various goods and services that we require in our daily lives. The phenomenal feature of money is that it enables us to purchase the most basic thing such as a bathing soap to a high value product such as a car.



**Standard of Value:** Another important function of money is that it acts as a Standard of Value or Unit of Account. Money helps us define the 'value' of a product and categorise them as high-priced or low-priced. For example, you may have a perception about certain things such as cars and computers having a high monetary value based on their price in terms of money.



**Store of Value:** As you must have learnt and seen in movies that in olden times, people used to keep gold coins and other such metals as money. You can imagine how inconvenient that would have been. In today's time, money is available in a highly convenient form so it can be kept as notes in your wallet or as a safe deposit in banks. A well-off person is indeed known by how much money he or she has available in cash or other forms. More money means higher ability to buy things of choice. In this perspective, money plays an important role as Store of Value.

### 3.3 Role of Banks



As you have learnt in the previous section, money acts as a store of value and banks are institutions that significantly enable this function of money by allowing its storage and transaction in the form of accounts. On the same lines, banks are also enablers for the business and economy by acting as a platform for secure transactions.

Banking in India started in a major way in the form of the Imperial Bank of India in 1921. This was later renamed as the State Bank of India (SBI) in 1955.

Banks provide a distinct set of services to the customers and are categorised on that basis. Let us learn about the various kinds of banks in our country.

### 3.4 Types of Banks

Banks are of different types and can be categorised on the basis of their ownership and services they offer:

**Central Bank:** In our country, the Reserve Bank of India (RBI) plays the role of the central bank. RBI is an extremely important institution and has strong influence over the state of economy. It acts as the banker to the Government and performs many important functions such as:

- Acts as the key issuer of currency notes
- Managing the foreign currency reserves of the country
- Controlling money supply in the economy
- Acts as a custodian for the reserve money
- Checks and monitors all the activities of the commercial banks of a country.

**Commercial Banks:** These banks are of two types. Public sector commercial banks are owned by the Government, and are also known as nationalised banks. Examples include State Bank of India, Canara Bank, Central Bank of India etc.



On the other hand, Private commercial banks are owned by private organisations. Examples include ICICI Bank, HDFC Bank, etc.



Commercial banks provide a first level banking interface to their customers allowing them a host of services such as:

- Management of accounts
- Acceptance of deposits
- Lending of funds
- Cheque facilities for payments across accounts
- Facilities such as online banking and phone banking

**Cooperative Bank:** The cooperative banking system aims to promote saving and investment habits among people, especially in rural parts of the country. Cooperative Banks play a significant role in funding of areas under agriculture, livestock, milk, personal finance and self-employment.

**Specialised Bank:** These are banks that are created with the objective to provide financial support to specific industry segments such as foreign trade, industrial development etc. Important examples of specialised banks include Export Import Bank of India (EXIM Bank), Small Industries Development Bank of India (SIDBI) and National Bank for Agricultural and Rural Development.

### 3.5 Types of Bank Accounts

There are different types of accounts that a customer can open in commercial banks. These depend on the requirement and profile of the customer. Let us learn about the different types of bank accounts in our country.

| Savings Account   | Current Account  | Fixed Deposits  | Recurring Account  |
|---|--|---|--|
| <ul style="list-style-type: none"> <li>• Key purpose is to encourage savings among people</li> <li>• Commonly used by students, salaried individuals and senior citizens</li> <li>• Savings account earns a nominal interest</li> </ul> | <ul style="list-style-type: none"> <li>• Key objective is to facilitate business</li> <li>• Targeted towards business users</li> <li>• Bank does not pay interest on current account and levies certain charges on the basis of services used</li> </ul> | <ul style="list-style-type: none"> <li>• Used for the purpose of savings and investment</li> <li>• Long term commitment to park funds</li> <li>• Interest earned is substantially higher compared to savings account</li> </ul> | <ul style="list-style-type: none"> <li>• An account type that encourages systematic habit of saving</li> <li>• A specific amount is deposited each month for a pre-determined tenure</li> <li>• Earns interest more than savings account depending on the chosen tenure</li> </ul> |

## Summary

- Money has evolved over a long period of time from Barter System to the sophisticated banking system we see today
- Money serves three key functions: Medium of Exchange, Standard of Value & Store of Value
- Apart from the Central Bank (RBI), banks can be commercial, cooperative and specialised
- There are four key types of bank accounts: Savings, Current, Fixed and Recurring

## Abbreviations

|                  |  |
|------------------|--|
| <b>RBI</b>       | Reserve Bank of India                      |
| <b>SBI</b>       | State Bank of India                        |
| <b>EXIM Bank</b> | Export Import Bank of India                |
| <b>SIDBI</b>     | Small Industries Development Bank of India |

### Unit 3: Self-Test Questions

#### Choose the correct option(s)

1. Which of the following is the oldest system of making business transactions?  
a) Banking                                      b) Barter System                                      c) Gold Coins
2. "Money helps us define the 'value' of a product and categorise them as high-priced or low-priced." This relates to which function of money.  
a) Medium of Exchange                      b) Standard of Value                      c) Store of Value
3. This is a type of account specifically targeted towards business owners  
a) Fixed Deposits                                      b) Savings Account                                      c) Current Account

#### True/False

1. Managing foreign currency reserves is among the key functions of RBI ( )
2. Public sector commercial banks are owned by private entities ( )
3. One of the key functions of money is to act as 'Store of Value' ( )

#### Answer in Brief

1. What were the primary limitations of the Barter System?

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2. What are Specialised Banks?

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# Unit 4:

## Security

### Learning Objective:

The objective of this unit is to make students aware of the role played by RBI and the concept of digital banking

This unit focuses on:

- Role and importance of Reserve Bank of India (RBI)
- Introduction to digital banking and the Digital India Initiative

### Learning Outcomes:

| Location  | Learning Outcome                           | Knowledge Evaluation   | Performance Evaluation                                     | Teaching and Training Method  |
|-----------|--|--|--|---|
| Classroom | Understand role and importance of RBI      | Describe the importance of RBI as a core banking institution | Enlist the functions performed by RBI                      | Interactive Lecture : Role and importance of RBI  |
|           | Appreciate the benefits of digital banking | Describe the concept and benefits of digital banking         | State the various benefits of digital banking to consumers | Interactive Lecture : Concept and benefits of digital banking<br><br>Activity: Visit <a href="https://digitalindia.gov.in/">https://digitalindia.gov.in/</a> and make a list of new initiatives launched as part of Digital India |



## 4.1 Reserve Bank of India — Role and Importance



As discussed in the previous section, the Reserve Bank of India plays a prominent role as the central bank of the country. Let us discuss about RBI further in detail.

At the top of Reserve Bank's organisational structure is the Central Board of Directors, which has the primary authority and responsibility for the oversight of the Reserve Bank. It delegates specific functions to the Local Boards and various committees. The Governor plays the role of Reserve Bank's chief executive. The Governor supervises and directs the affairs and business of the RBI. The management team also includes Deputy Governors and Executive Directors.

### 4.1.1 Reserve Bank of India — Core Functions

The core functions performed by RBI include:

- Monetary policy
- Regulation of banking and non-banking financial institutions
- Regulation of money, forex, and government securities
- Management of foreign currency reserves
- Banker to Banks
- Banker to the central and state governments
- Currency management

## 4.2 About NPCI

National Payments Corporation of India (NPCI) is a not-for-profit organisation building a robust, scalable and affordable payments infrastructure for India.

NPCI is an umbrella organisation for operating retail payments and settlement systems in India. It is an initiative of Reserve Bank of India (RBI) and Indian Banks' Association (IBA). The Company is focused on bringing innovations in the retail payment systems through the use of technology for achieving greater efficiency in operations and widening the reach of payment systems. The various shareholders of NPCI include Public Sector Banks, Private Sector Banks, Foreign Banks, Regional Rural Banks, Multi State Cooperative Banks, Payments Banks, Payments System Operators and Small Finance Banks.

### 4.3 Digital India Initiative

Digital India is a flagship programme that works with the vision to transform India into a digitally empowered society and knowledge economy. It is a part of the larger 'Atmanirbhar Bharat' initiative of the Government of India that aims to strengthen and empower the economy of India with the belief to promote the products that are made in India.



Digital India has various digital initiatives under its fold such as:

- **Aadhaar Enabled Payment System (AePS):** It is a bank led model which allows online financial transaction at PoS (MicroATM) through the business correspondent of any bank using Aadhaar authentication.
- **Bharat Interface for Money (BHIM):** An app that makes payment transactions simple, easy and quick using Unified Payments Interface (UPI).
- **DigiLocker:** It is a digital wallet that empowers citizens digitally via a secure cloud based platform for issuance, sharing and verification of critical lifelong documents or certificates
- **eBiz:** The focus of eBiz is to improve the business environment in the country by enabling fast and efficient access to Government-to-Business (G2B) services through an online portal.
- **EPFO Web Portal:** The web portal allows employees to check their EPF balance through an ePassbook which is an online version of their physical passbook.



## 4.4 Digital Payments

You may have heard from your parents or grandparents over how they used to stand in queues to avail even the most basic banking services. However, with passing time and with the advancement in high speed internet and mobile technologies, most of these services can today be obtained through digital banking enabled on smartphones and computers.

Digital payments is a key feature available through digital banking. It enables banking customers to make instant payments without the hassles of issuing cheques. That too at any time of their convenience.

Let us learn about key advantages of using digital payments:

### 4.4.1 Advantages of Digital Payments



The development of digital payments technology has ushered in a new era of ease and convenience for people. Let us discuss the many advantages of digital payments.

- **Convenient:** Without worrying about specific banking hours, customers can avail the option of digital payments at a time of their choosing.
- **Easy and Quick:** With no cash or cheque handling requirement, digital payments can be made quickly and easily through smartphones or computers.
- **One stop solution:** Digital payments provide the facility to not just transfer funds but to purchase goods and services online and also to pay bills.
- **Accurate Record:** Each online/digital transaction is backed by a unique transaction ID. This makes digital payments fully secure transactions, and there is minimal risk involved. The transaction ID allows the user to track the payment in case of any delay or error.
- **Transparent Transactions:** Digital transactions are transparent and eliminate the security risks that come with handling cash money while discouraging the use of black money.

## Summary

- As the central bank of India, RBI performs various key functions such as setting the monetary policy, regulating banks and other financial institutions, issuing currency and managing foreign currency reserves.
- Digital India is a flagship programme that works with the vision to transform India into a digitally empowered society and knowledge economy.
- Digital payments offer a number of advantages such as being fast and convenient, and allowing various types of payments.
- National Payments Corporation of India (NPCI) is a not-for-profit organisation building a robust, scalable and affordable payments infrastructure for India.

## Abbreviations

|      |  |
|------|--|
| AePS | Aadhaar Enabled Payment System         |
| BHIM | Bharat Interface for Money             |
| EPF  | Employee Provident Fund                |
| NPCI | National Payments Corporation of India |

## Useful Links

<https://rbidocs.rbi.org.in/rdocs/Content/PDFs/FUNCWWE080910.pdf>

<https://digitalindia.gov.in>

## Unit 4: Self-Test Questions

### Choose the correct option(s)

1. Which of the following is NOT a function of RBI?  
a) Managing currency    b) Banker to the Government    c) Issuing cheques
2. Select the option that correctly indicates the objective of Digital India initiative?  
a) Enhancing India's digital economy    b) Improving the mobile network  
c) Increasing education levels

### Fill in the Blanks

1. RBI plays the role of being the banker to \_\_\_\_\_ and \_\_\_\_\_
2. Digital payments are backed with unique record as each transaction generates a unique \_\_\_\_\_
3. Being transparent in their functioning, digital payments discourage the use of \_\_\_\_\_ money

# Unit 5:

## Modes of Digital Payments- Card Based

### Learning Objective:

The objective of this unit is to enable students to know the concept and purpose of banking cards, various channels for acceptance of card based payments such as Point of Sale (PoS) and ATM machines

This unit focuses on:

- Description of various types of banking cards
- Definition and benefits of PoS
- Purpose and benefits of ATM machines

### Learning Outcomes:

| Location                  | Learning Outcome   | Knowledge Evaluation   | Performance Evaluation                           | Teaching and Training Method  |
|---------------------------|--|--|--|---|
| Classroom/<br>Bank/Market | Identify the various kinds of banking cards: Debit, Credit and Prepaid | State and describe the benefits of using Debit, Credit and Prepaid Cards | Appreciate the benefits of using banking cards   | Interactive Lecture :<br>Purposes and benefits of using banking cards<br><br>Activity: Observe a banking card with the help of your parents and list down its visual elements |
|                           | Define PoS and its benefits  | Explain the definition of PoS and its benefits                           | Enumerate the benefits offered by PoS            | Interactive Lecture :<br>Purposes and benefits PoS<br><br>Activity: Visit a nearby supermarket and observe the working of PoS system. List down your observations             |
|                           | Describe ATM and the benefits it offers                                | Explain the function of ATM and its benefits                             | Identify the role played by ATM in today's world | Interactive Lecture :<br>Function and benefits ATM<br><br>Activity: Visit an ATM along with your parents, and list down the facilities it provides apart from cash withdrawal |

## 5.1 Payments Acceptance Ecosystem

**5.1.1. Acquirer:** An acquirer is a bank that is in contract with merchants to accept card-based payments for goods and services. The acquirer installs the payments acceptance machine such as PoS to accept the cardholder payments at the merchant locations.

**5.1.2 Issuer:** An issuer is a bank that issues banking cards such as debit cards to its customers.

**5.1.3 Payment Gateway:** A payment gateway facilitates the transfer of information between a payment portal (such as a website, mobile phone or Interactive Voice Response) and the Front End Processor or acquiring bank. Payment gateways protect sensitive information and ensure that information is passed securely between the customer and the merchant and also between merchant and the payment gateway.

**5.1.4 Payment Aggregator:** A payment aggregator is a service provider that registers and enables e-commerce merchants to accept various payment modes and process e-commerce and mobile payment transactions, without the need of merchant setting up a separate bank account. An example of a payment aggregator in India is Razorpay. Other famous examples of payment aggregators are PayPal, PayTM, etc.

## 5.2 Use of Banking Cards

As you may have observed your parents during shopping, the use of banking cards has indeed revolutionised the way people shop and pay for goods and services.

In this section, you will learn the various types of banking cards in use and other aspects relating to banking cards.

### 5.2.1 Types of Banking Cards

**Debit Cards:** Debit cards serve a dual purpose. They allow the account holders to perform banking transactions through the ATM machine such as deposits, withdrawals and account information. They also act as debit cards allowing the card holder to make cashless transactions at merchant establishments. The value of the purchase is deducted from the associated bank account.



**Credit Cards:** As the name suggests, credit cards are instruments that provide instant credit to the card holders. When a credit card is used for making a transaction, the amount is not deducted from the bank account but is provided as credit by the issuing bank. The card holder is provided with a time period, which is generally 30-45 days, to pay back the amount to the bank. Banks charge interest on the amount that is not returned within the stipulated time.



**Prepaid Cards:** These are 'stored value' cards that are charged with a specific amount. The prepaid cardholder is allowed to transact for the value stored in the card. For example, if the card has a value of Rs.5000, once that value is used up for purchases, more value needs to be added to the card. Examples of prepaid cards include Meal Card, Salary Card, Lending card etc.



**Virtual Cards:** Virtual credit cards are usually one-time non-physical cards issued by a bank or card provider to perform an online transaction. Note that virtual cards exist in only digital form. They are used primarily by customers who wish to minimise their risk while making an online transaction, post which they expire automatically.

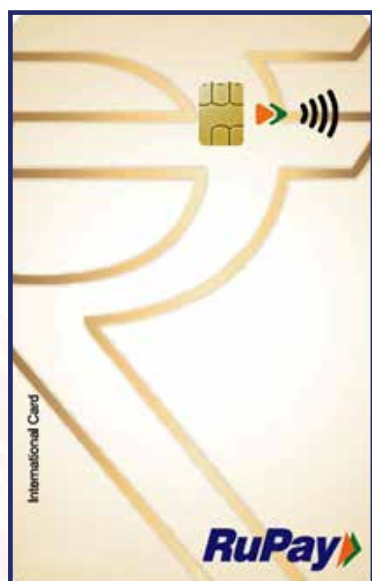




**Co-branded Cards:** Sometimes, banks collaborate with retailers or service providers to issue credit cards with specific benefits to cardholders. These cards carry the logos and branding of both the bank and the retailer. Thus, they are known as co-branded cards. These cards provide reward points to customers while shopping with them. For example, a petrol credit card. Every time a user uses it to purchase fuel, they receive redeemable reward points or cashback, a small percentage of the total bill.



**Contactless Cards:** Contactless cards are a revolution in card technology as they allow for safer and more convenient transactions with just a contactless tab on the card machine. Contactless payments are the future of payment industry in India, as part of the transition to a less cash society.



RuPay Contactless card is in line with the specifications laid down in the National Common Mobility Card (NCMC) Program. This card will work across all the public transport systems in the country such as metros, buses, cabs etc. leading the way to the establishment of an Interoperable Fare Management System (IFMS).

### 5.2.2 Guidelines for Use of Banking Cards

Instruments like debit and credit cards indeed offer a high level of convenience while making transactions, however at the same time it is also important to follow guidelines during their use.

- One must be observant while using an ATM card to withdraw cash. Ensure that there is no other person who may be watching while you enter the PIN
- Credit cards should be used only for convenience and the card holder must ensure to pay back the card dues in time to avoid heavy interest
- Banking cards must be kept very safe and not allowed to go into wrong hands to avoid misuse
- Card PIN and CVV numbers must not be shared with anyone

### 5.2.3 Activation of Banking Cards

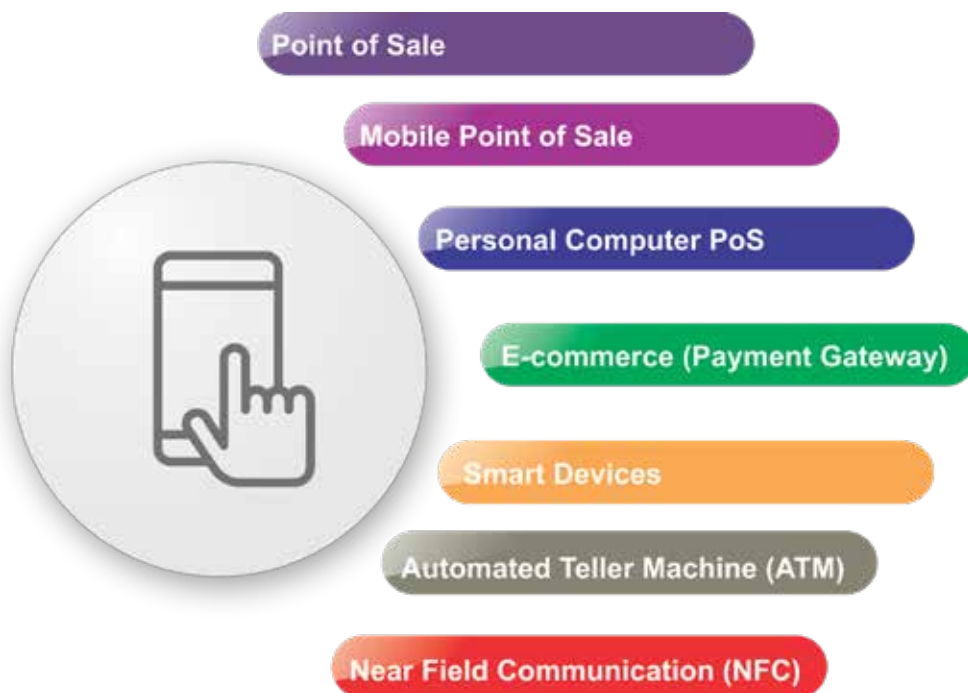
There are some important points to note regarding activation of banking cards

- The functioning of banking cards is controlled by the central computer systems of the issuing bank
- A card would work only when it is set in 'active' state by the bank's system on confirmation from the user
- Newly issued cards are activated once the bank receives confirmation that the card is in possession of the authorised person
- Card holders can activate their cards either by using Internet Banking, Mobile Banking, Phone Banking or by using the ATM machine of the issuing bank
- Each card comes with 'valid till' date beyond which it automatically gets deactivated

### 5.2.4 Do's and Don'ts while using Banking Cards

| Do's  | Don'ts   |
|---|--|
| Keep the banking cards in a safe and secure place                             | Do not delay informing the bank immediately in case of a lost or stolen card                       |
| Keep the card secure with a PIN number which is not easy to guess             | Do not share the PIN number, CVV number and details like card number and validity date with anyone |
| Clear your credit card dues in time to avoid interest and penalty by the bank | Do not use credit card for extravagance, use it for convenience                                    |

## 5.3 Various channels for acceptance of card based digital payments



### 5.3.1 Point of Sale (PoS)



Let us learn about a very interesting technology known as Point of Sales (PoS). This is one such technology that has the ability to convert a simple shop to a modern retail store.

Unlike traditional shops, where all invoicing and record keeping is done on paper, PoS provides automatic machine-based invoicing and inventory record management.

This makes life far more convenient for the shop owner, while also providing accurate data at the press of a button. That's the power of a PoS system.



## PoS – Benefits to Merchants

PoS offers a number of benefits to merchants and store owners, such as:

**Faster Process:** PoS makes the sales process much faster and this helps improve the customer service levels while also saving time.

**Inventory Management:** The PoS system allows for more professional and automatic inventory record management. This enables more efficient stock keeping and improved opportunities for sales.

**Sales Report:** PoS makes it easy and convenient to generate the sales report at any time. This enables the store owner to keep regular track of his income and profits.

**Improved Customer Satisfaction:** When customers experience a faster and more efficient way of shopping through PoS, it leads to an increase in the customer experience levels of the store.

## PoS – Benefits to Customers

Let us now discuss the benefits offered by PoS to customers:

- **Faster Billing:** PoS system makes the billing process automated and faster leading to a more comfortable experience for the customers.
- **Better Accuracy:** With the use of PoS system, there is minimal risk of incorrect billing and higher accuracy is ensured.
- **Improved Shopping Experience:** PoS system enables a fast, convenient and hassle-free shopping experience leading to an enhanced and superior shopping experience for customers.

## Types of POS systems for different retailers

- Counter-based point of sale systems
- Mobile point of sale systems
- Online point of sale – e-commerce
- Omni-channel point of sale

### 5.3.2 mPoS – Mobile Point of Sale



Unlike traditional PoS, mPoS provides great technological advantages. The Mobile Phone based application is a Java/IOS application that is designed for simple use by the merchant/retailer. It is an extremely intuitive system containing menus and functions that are easy to use.

Once the card is swiped, the application encrypts the data and sends the encrypted data to the server for authentication. A typical series of actions are as follows:

1. Login to the application using the user ID and password
2. Select a transaction type in mPOS application e.g. Card Sale
3. Select the amount and enter 4 digits of the card number (as in traditional POS device)
4. Swipe/Dip the card – at this time the application powers the card reader through Bluetooth/Audio jack and accepts the encrypted data from the device. PIN will be captured appropriately
5. Transaction is sent for authorization
6. If authorization is accepted, then email receipt is sent to the customer

### **5.3.3 Soft PoS**

Soft PoS is an innovative payment acceptance segment, which uses 'Tap-on-Phone' technology. This technology allows merchants to accept payment from contactless cards directly on their Near Field Communication (NFC)-enabled android mobile devices via software based payment application, without the requirement for any additional connected hardware.

This Tap-on-Phone technology has the same functionality as the regular PoS/mPOS for contactless payment acceptance. However, as the functionality can be directly enabled on the merchant mobile handset, this makes the product affordable and enables larger market penetration.

### **5.3.4 E-commerce payment**

The Online point of sale – e-commerce, as listed above, is a kind of PoS system specially used for e-commerce transactions. These are transactions conducted over the internet through the use of online banking or banking cards.

As you may be aware, the e-commerce industry in India today is a multi-billion dollar industry with a huge customer base.

### **5.3.5 Automated Teller Machine (ATM)**

Automated Teller Machines (ATM) solve a big challenge for banks as well as their customers. While they reduce the rush of customers at bank branches, they provide a one-stop solution to customer for services such as cash withdrawal, generating account mini-statements etc. without the hassle of visiting the bank branch.

## ATM – Benefits to Banks

ATMs offer various benefits to banks. These include:

- Increases customer satisfaction as they are able to access bank's services 24x7
- Reduces crowding at bank branches as many cash and account related services are handled at ATMs
- Helps in enhancing customer loyalty as ATMs act as additional channel to service customers
- With ATMs being interoperable, Bank with less number of ATMs can also have their customers use other banks' ATMs for various services

## ATM – Benefits to Customers

On the same lines, ATMs offer a host of benefits to the customers/account holders. These include

- Reduced visits to bank branch
- Shorter travel time as ATMs are usually situated nearby
- Convenient access to cash 24x7
- Additional services such as balance Inquiry, mini statement, PIN change, etc.
- With ATM being interoperable, customers can visit any bank ATM to withdraw cash, do balance Inquiry, perform PIN change, etc.

## Types of ATM Deployments

Apart from the Bank owned and managed ATMs seen commonly, two other types of ATM deployments are common in our country viz. White Label ATMs and Brown Label ATMs.

Let us understand the differences:

| White Label ATMs (WLA)   | Brown Label ATMs (BLA)   |
|--|--|
| <ul style="list-style-type: none"><li>• These machines are owned and operated by Non-banking financial Institutions authorised by RBI for operating WLA</li><li>• They do not have any specific bank's branding. However, some operators do have tie ups with banks and display their logos along with WLA logo</li><li>• Sponsor bank provides the cash and facilitates settlement for transactions on WLAs</li><li>• Such ATMs are more common in smaller and remote towns</li></ul> | <ul style="list-style-type: none"><li>• Brown Label ATMs work on cost/revenue sharing concept</li><li>• Hardware is owned by service provider, while the cash management and network connectivity are provided by sponsor bank</li><li>• These ATMs carry the logo of the sponsor bank, so there is no difference for customers</li><li>• The services offered are same as a normal bank ATM</li></ul> |

Apart from the above, ATMs that are deployed at Bank branches are called Onsite ATMs and the ones located away from the bank branches are called Offsite ATMs.

### **Cash Deposit Machines (CDM) and Cash Recyclers:**

Many banks have also deployed Cash Deposit Machines at their branches for the convenience of their customers. This makes it easy and convenient to deposit cash without filling deposit slip, waiting in queue and depositing cash at the counter/Cash Teller. Banks and White Label ATM Operators (WLAOs) have also begun deploying Cash Recyclers. These machines act same as ATM i.e. used for cash withdrawal and other banking services offered by banks. In addition to this, they also facilitate cash deposits, thus increasing the convenience to the customers and optimizing the cost of operations /cash handling for banks/WLAOs. Some banks have also started offering Interoperable Cash Deposit (ICD) services.

## **5.4 RuPay Network and RuPay Card**

A product of National Payments Corporation of India (NPCI), RuPay is a first-of-its-kind domestic card payment network exclusively created for the Indian market. Its name is derived from the words 'Rupee and 'Payment'. RuPay is a highly secure network that protects against threats such as phishing.

By encouraging every Indian bank and financial institution to become tech-savvy and enabled in offering electronic payments, RuPay fulfils RBI's vision of creating a 'less cash' economy.

Some of the card variants offered by the RuPay network include:

- RuPay Classic
- RuPay Platinum
- RuPay Select
- RuPay Corporate

## Summary

- Banking cards offer high convenience to customers and they include debit cards, credit cards, prepaid cards, virtual cards and co-branded cards.
- PoS makes life far more convenient for the shop owner, while also providing accurate data at the press of a button.
- Unlike traditional PoS, mPoS provides great technological advantages.
- Soft PoS is an innovative payment acceptance segment, which uses 'Tap-on-Phone' technology.
- Automated Teller Machines (ATMs) provide a host of benefits to customers as well as banks.
- Apart from Bank owned ATMs, there are also White Label and Brown Label ATMs.
- Some banks are also deploying Cash Deposit Machines and Cash Recyclers at their premises.
- A product of National Payments Corporation of India (NPCI), RuPay is a first-of-its-kind domestic card payment network exclusively created for the Indian market.

## Abbreviations

|            |                            |
|------------|----------------------------|
| <b>ATM</b> | Automated Teller Machine   |
| <b>WLA</b> | White Label ATM            |
| <b>BLA</b> | Brown Label ATM            |
| <b>ICD</b> | Interoperable Cash Deposit |
| <b>CDM</b> | Cash Deposit Machine       |

## Unit 5: Self-Test Questions

### Choose the correct option(s)

1. Which kind of banking card works on the basis of a pre-filled amount?  
a) Credit Card                      b) Debit Card                      c) Prepaid Card
2. The interest paid on a credit card depends on?  
a) Issuing bank                      b) Customer profile                      c) Credit period
3. Which of the following is a valid benefit of PoS to customers?  
a) Inventory control      b) Accuracy and convenience      c) Sales report generation
4. The kind of ATM that works on cost/revenue sharing basis:  
a) Offsite ATM                      b) White Label ATM                      c) Brown Label ATM
5. Which of the following machines allows the facility to deposit cash?  
a) CDM                      b) ICD                      c) BLA

### True or False

1. Debit cards are usually issued at the time of bank account opening ( )
2. For purchases made on credit card, the amount is directly deducted from the account ( )
3. ATMs are always located within the bank branch ( )

### Fill in the Blanks

1. \_\_\_\_\_ system provides automatic machine-based invoicing and inventory record management
2. \_\_\_\_\_ ATMs are owned and operated by Non-banking financial Institutions authorized by RBI
3. \_\_\_\_\_ system is based on Java/IOS application
4. \_\_\_\_\_ is a service provider that registers and enables e-commerce merchants to accept various payment modes

# Unit 6:

## Modes of Digital Payments- Biometric Based

### Learning Objective:

The objective of this unit is to enable students to understand the significance of UIDAI and Aadhaar while also learning about Micro ATMs

This unit focuses on:

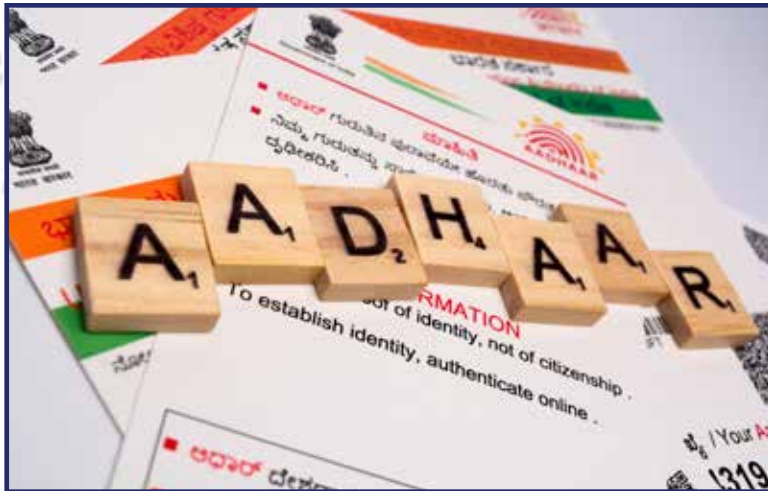
- Role and definition of UIDAI, Aadhaar and AePS
- Purpose and benefits of Micro ATM machines

### Learning Outcomes:

| Location  | Learning Outcome  | Knowledge Evaluation                                       | Performance Evaluation  | Teaching and Training Method   |
|-----------|---|--|---|--|
| Classroom | Understand the role and importance of UIDAI, Aadhaar and AePS | Explain the significance of UIDAI, Aadhaar and AePS        | Appreciate the important role played by UIDAI, Aadhaar and AePS | Interactive Lecture : Role and importance of UIDAI, Aadhaar and AePS<br><br>Activity: Visit the uidai.gov.in website and compile key aspects about UIDAI       |
|           | Define the purpose and benefits of Micro ATM machines         | Describe the importance and benefits of Micro ATM machines | Enlist the benefits of Micro ATM machines                       | Interactive Lecture : Purpose and benefits of Micro ATM machines<br><br>Activity: Research on the internet and list down differences between ATM and Micro ATM |



## 6.1 Unique Identification Authority of India (UIDAI)



The Government of India has taken a strong step towards securing and authenticating the identities of citizens. This initiative led to establishment of Unique Identification Authority of India (UIDAI) which goes a long way towards making digital financial transactions transparent.

UIDAI was created with the objective to issue unique identity document named as “Aadhaar” (also known as UID), to all residents of India. The key objective of UID is to eliminate duplicate and fake identities; it can be authenticated and verified in easy and cost-effective way.

The UID is designed to be

- (a) Robust enough to eliminate duplicate and fake identities, and
- (b) Verifiable and authenticable in an easy, cost-effective way

The Unique Identification Authority of India (UIDAI) is a statutory authority established under the provisions of the “Aadhaar Act 2016” on 12 July 2016 by the Government of India. The first UID number was issued on 29 September 2010 to a resident of Nandurbar, Maharashtra.

## 6.2 Aadhaar Enabled Payment System (AePS)

The biometric authentication of Aadhaar numbers enables a payment system named as Aadhaar Enabled Payment System (AePS) operated by NPCI. It is a payment servicethat has been introduced to subserve the goal of Government of India and RBI’s Financial Inclusion to provide basic banking and payment services in the remotest part of India.





AePS empowers a bank customer to access his/her Aadhaar enabled bank account to perform basic banking transactions like balance enquiry, cash deposit, cash withdrawal, mini statement and Aadhaar to Aadhaar fund transfers through a Business Correspondent. To perform AePS transactions, customer needs to punch in Aadhaar number, select bank name from the drop down on Micro ATM, select type of service customer wants to avail and then provide biometric to perform a transaction.

### 6.2.1 AePS Features

AePS provisions various services to consumers. These include:

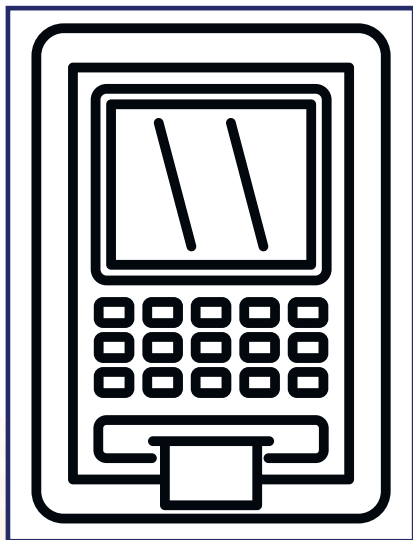
#### Financial Transactions

- Balance Enquiry
- Cash Withdrawal
- Cash Deposit
- Fund Transfer
- Mini Statement
- BHIM Aadhaar

#### Financial Transactions

- Best Finger Detection
- Electronic Know Your Customer (eKYC)
- Demographic Authentication

### 6.3 Micro ATMs – A perfect solution for rural and hinterlands



The ATM machines that we commonly see in cities and towns are not available in the far-flung areas of our country. In fact, these are locations where even the bank branch may not be available.

For such areas, Micro ATMs are the perfect solution. These are handheld devices available with authorised banking correspondents (also known as bank mitras) allowing Aadhaar holders to perform basic banking transactions. Fingerprint and/ or Retina/Iris of the customer is used to authenticate a customer. AePS is a key in driving financial inclusion in rural areas. Prior to AePS and UIDAI, people in the rural area were not having bank accounts at all or needed to travel long distances to access bank accounts. Today with the help of AePS, business correspondents are providing banking services at doorsteps.

Micro ATMs are portable and can be carried anywhere in just one hand, making them ideal for remote locations. Compared to a conventional ATM machine, a micro ATM can be purchased and activated at a fraction of the cost. Micro ATMs can also be made compatible with regional languages.

### 6.3.1 Micro ATMs – Benefits

Micro ATMs bring forth a host of benefits to far flung areas and connect them to the national mainstream. Let us learn some of the benefits that Micro ATMs offer

- Low cost and portable
- Easy to carry, easy to setup anywhere in the remote area
- Biometric enabled secured transactions
- Interoperable device and can work for any bank

### 6.4 BHIM Aadhaar Pay - The Merchant Solution

BHIM Aadhaar Pay enables merchants to receive digital payments from customers over the counter on the basis of Aadhaar biometrics authentication.

For BHIM Aadhaar Pay to work, the merchant needs to have an Android mobile with BHIM Aadhaar app and certified biometric scanner attached on the USB port of a PoS/ mPoS/Micro-ATM system. Customer should have their Aadhaar linked to their bank account.

The image displays two side-by-side screenshots of the BHIM Aadhaar Pay application interface. Both screens have a dark blue header with the text 'BHIM Aadhaar' and a menu icon. The left screen is titled 'Cashless Payment' and shows a form with the following fields: 'Consumer Bank' (HDFC), 'Consumer Aadhaar Number' (1111 2222 3333), and 'Amount (₹)' (5.01). At the bottom of the left screen is an orange button labeled 'BHIM Aadhaar Pay'. The right screen is also titled 'Cashless Payment' and shows the transaction details: 'Transaction Amount : ₹ 5.01', 'Bank Name : HDFC', and 'Aadhaar Number : \*\*\*\*\*9491'. Below this is a circular fingerprint scanner icon. A message below the scanner says 'Please place your finger when beep sound is heard.' At the bottom of the right screen is a checkbox with the text 'I Agree that Bank/UIDAI may share my details with each other for the purpose of authenticating my Aadhaar number.' Both screens have a footer that says 'Powered by NPCI'.

### 6.4.1 Steps for First Time BHIM Aadhaar Pay User

Before accepting payments through BHIM Aadhaar Pay, a merchant needs to follow these steps:

1. The merchant needs to download the application from the Google Play store
2. Register himself using his Aadhaar number and biometric credentials
3. During the registration process, the merchant selects his/her bank account where he wants the payments to be credited
4. The merchant is asked to agree to the terms and conditions for using the app

#### Summary

- Government of India's initiative known as Unique Identification Authority of India (UIDAI) goes a long way towards making digital financial transactions transparent.
- The biometric authentication of Aadhaar numbers enables a payment system named as Aadhaar Enabled Payment System (AePS).
- Micro ATMs are portable and can be carried anywhere in just one hand, making them ideal for remote locations.
- BHIM Aadhaar Pay enables merchants to receive digital payments from customers over the counter on the basis of Aadhaar biometrics authentication.

#### Abbreviations

|              |  |
|--------------|--|
| <b>UIDAI</b> | Unique Identification Authority of India |
| <b>NPCI</b>  | National Payments Corporation of India   |
| <b>AePS</b>  | Aadhaar Enabled Payment System           |
| <b>eKYC</b>  | Electronic Know Your Customer            |
| <b>BHIM</b>  | Bharat Interface for Money               |

#### Useful Links

|   |
|---|
| <a href="https://uidai.gov.in/">https://uidai.gov.in/</a>   |
| <a href="https://www.npci.org.in/what-we-do/bhim/product-overview">https://www.npci.org.in/what-we-do/bhim/product-overview</a> |
| <a href="https://www.npci.org.in/what-we-do/aeps/product-overview">https://www.npci.org.in/what-we-do/aeps/product-overview</a> |

## Unit 6: Self-Test Questions

### Choose the correct option(s)

1. Name the institution that was created with the objective to issue unique identity document to all citizens:  
a) BHIM                                      b) AePS                                      c) UIDAI
2. For BHIM Aadhaar Pay to work, it is important that Aadhaar is linked to bank account for:  
a) Only Customer                      b) Customer and Merchant both                      c) Only Merchant
3. Which feature of Micro ATMs more suitable for remote locations?  
a) Cash-less                                      b) Biometrics enabled                                      c) Portable

### True or False

1. UIDAI is a Government institution that aims to make digital financial transactions transparent ( )
2. BHIM app is not available on Google play store ( )
3. Micro ATMs are portable and hand-held devices ( )

# Unit 7:

## Modes of Digital Payments – Mobile Based Banking and Others

### Learning Objective

The objective of this unit is to enable students to learn about the various forms of digital payments including internet banking, mobile banking and mobile wallets

This unit focuses on:

1. Various forms of digital payments including internet banking and mobile banking
2. Digital Platforms: UPI and mobile wallets
3. USSD and its application

### Learning Outcomes:

| Location   | Learning Outcome                                 | Knowledge Evaluation   | Performance Evaluation   | Teaching and Training Method  |
|------------|--|--|--|---|
| Class-room | Describe the various options of internet banking | Explain internet banking and differentiate between its various types such as NEFT, RTGS, IMPS and NACH | Develop understanding about various forms of internet banking services | Interactive Lecture : Internet banking services such as NEFT, RTGS, IMPS and NACH<br>Activity: Request your parent to demonstrate an IMPS funds transfer transaction and record your observations |
|            | Describe mobile banking                          | Explain the concept of mobile banking  | Appreciate the role of mobile banking in making transactions simpler   | Interactive Lecture : Mobile banking<br>Activity: Discuss with your parent about the benefits they experience with any mobile banking app that they are using                                     |
|            | Define UPI and mobile wallets                    | Enlist the various types of mobile wallets   | Appraise the importance of UPI and mobile wallets                      | Interactive Lecture : UPI and mobile wallets<br>Activity: Explore the use of a mobile wallet under guidance from your parent  |
|            | Define and understand the application of USSD    | Describe the concept and scope of USSD   | State the purpose and application of USSD                              | Interactive Lecture: Purpose and application of USSD  |

## 7.1 Internet Banking



As you have learnt previously, internet banking allows you to make financial transactions via the Internet through your smartphone, tablet or laptop. Among the important banking services that you can access are online amount transfers.

The key advantage of making an amount transfer using internet banking is that an account holder does not require to use cheques and can transfer the amount to a beneficiary at a time of his/her convenience. However, such transactions are bound by the terms and conditions laid down by the Reserve Bank of India (RBI).

When you transfer an amount using Internet Banking, it can be done through different methods including:

- National Electronic Fund Transfer (NEFT)
- Real-Time Gross Settlement (RTGS)
- Immediate Payment Service (IMPS)

Let us learn more about these services one by one.

### 7.1.1 National Electronic Fund Transfer (NEFT)

National Electronic Funds Transfer (NEFT) is a nation-wide centralised payment system owned and operated by the Reserve Bank of India (RBI). The payment mode enables companies, firms, corporates and individuals to transfer funds electronically to other companies, firms, corporates and individuals within the country.

Before making an NEFT transfer, the account holder needs to register the beneficiary account details including account holder name, account type (savings etc.), account number and IFSC code\*. NEFT transactions are subject to specific time frames as laid down by the RBI, and presently operates in batches of half-hourly intervals throughout the day.

\*Indian Financial System Code (IFSC) is a code that helps to identify individual bank branches that participate in the various online money transfer options



NEFT offers the following key advantages:

- Available round the clock on all days of the year
- Near-real-time funds transfer to the beneficiary account
- Secure settlement process
- Pan-India coverage via a large network of bank branches
- Positive confirmation to the remitter by SMS /e-mail on credit to beneficiary account

### 7.1.2 Real-Time Gross Settlement (RTGS)

RTGS is a real time settlement system which allows for fast processing of money transfer between any two accounts. 'Real Time' means the processing of instructions at the time they are received; 'Gross Settlement' means that the settlement of funds transfer instructions occurs individually. The payments made via RTGS are final and irrevocable.

The RTGS system is primarily meant for large value transactions. The minimum amount to be remitted through RTGS is ₹ 2,00,000/- with no upper limit.

RTGS offers the following key advantages:

- Safe and secure system for funds transfer
- No cap on maximum amount being transferred
- Available on all days on a 24x7x365 basis
- Real time transfer of funds to the beneficiary account

### 7.1.3 Immediate Payment Service (IMPS)

IMPS is a product made available by the Reserve Bank of India (RBI) and National Payments Corporation of India (NPCI). It allows for 24x7 instant funds transfer service that can be accessed on multiple channels like Mobile, Internet, ATM and SMS. The key feature of IMPS is that it is available at all times. The transaction fee for IMPS is nominal and it allows a transfer limit of Rupees 2 lakhs per transaction.



IMPS offers the following key advantages:

- Fast, safe and secure way to send and receive funds
- Works on both net-banking and mobile platforms and its services are available at all times including holidays
- Funds can be transferred simply by providing the mobile no. and Mobile Money Identifier (MMID). Bank account numbers are not necessary
- Transfer confirmation is sent by the bank to both the payer and the payee when the transfer is complete
- Fund transfer limit currently is Rupees 2 lakh per transaction. The minimum allowed transaction value in IMPS is Rupee 1.

## 7.2 Mobile Banking – Bank in your Pocket



The latest technology in the form of powerful mobile and high speed internet has made things easy and convenient for banking customers. Mobile banking refers to simply making financial transactions on a mobile device be it smartphone, tablet etc.

Many services for which customers needed to visit the branch can now be availed through the convenience of one's mobile.

Most popular banks today offer the facility of Mobile Banking. It is offered in the form of a dedicated and secure application that provides the following key services:

- Checking of account balance
- Making funds transfer
- Bill payments and card payments
- Service requests such as ordering cheque books
- Locate branches and nearby ATMs
- Open an account or close an account
- Checking transaction history

### 7.2.1 Advantages of Mobile Banking

Mobile Banking offers various advantages in the form of:

- 24x7x365 access to banking services
- Saves time as well as money by avoiding physical visits
- Better control over account and finances
- Reduces paperwork by virtue of digital technology

### 7.2.2 Do's and Don'ts while using Mobile Banking

| Do's  | Don'ts   |
|---|--|
| Use only the bank authorised mobile banking app | Do not fall prey to fake apps that may steal user identity |
| Keep a strong password/PIN number               | Do not share the PIN number or OTP with anyone             |
| Keep your mobile free from malware              | Do not install apps from non secure sources                |

### 7.3 Unified Payments Interface (UPI)



A system developed by the National Payments Corporation of India (NPCI), UPI helps combine the power of multiple bank accounts into one single mobile app. It acts as a one-stop solution allowing for a host of digital banking options and merchant payments.

UPI merges several banking features, seamless fund routing and merchant payments into one integrated solution. In addition, it also caters to the “Peer to Peer” collect request which can be scheduled and paid as per requirement and convenience.

In simple words, UPI ID is simply a payment address, using which you can send or receive money using any UPI App. A UPI ID is unique to a user just like your email address. Example abcd@upi

### 7.3.1 Key features of UPI include:

Some key features of the Unified Payments Interface are listed below:

- Make easy, safe and instant transactions
- Access multiple bank accounts from a single mobile application
- Send and receive money seamlessly across UPI apps regardless of the UPI app you have
- Make direct bank payments using UPI ID or UPI QR
- Use your UPI ID to send or receive money across 200 banks, 21 third-party apps and BHIM App
- Single click authentication using UPI PIN
- Make payments for daily expenses, e-commerce, bill payments and more

### 7.3.2 UPI Benefits

UPI offers many benefits to all stakeholders in the system. Let's learn about them:

| Benefits for Banks  | Benefits to Customers   | Benefits to Merchants   |
|---|---|---|
| <ul style="list-style-type: none"><li>• Single click Two Factor authentication</li><li>• Universal Application for transaction</li><li>• Leveraging existing infrastructure</li><li>• Safer, Secured and Innovative</li><li>• Payment basis Single/ Unique Identifier</li><li>• Enable seamless merchant transactions</li></ul> | <ul style="list-style-type: none"><li>• Available round the clock</li><li>• Single Application to access different bank accounts</li><li>• Use of Virtual ID is more secure, no credential sharing</li><li>• Single click authentication</li><li>• Raise Complaint from Mobile App directly</li></ul> | <ul style="list-style-type: none"><li>• Seamless fund collection from customers - single identifiers</li><li>• No risk of storing customer's virtual address like in Cards</li><li>• Tap customers not having credit/debit cards</li><li>• Suitable for e-Com and m-Com transaction</li><li>• In-App Payments (IAP)</li></ul> |

### 7.4 Bharat Interface for Money (BHIM)



Bharat Interface for Money (BHIM) is an app, created by NPCI, which lets you send and receive money in a simple, safe and seamless manner using Unified Payments Interface (UPI). You can make instant bank-to-bank payments and Pay and collect money using just the mobile number or UPI ID.

**Some key features of BHIM include:**

**Send Money:** User can send money by entering the UPI ID, Account number/IFSC or QR Scan.

**Request Money:** Funds can be collected by entering UPI ID. Additionally through BHIM App. One can also transfer money using Mobile No. (Mobile No should be registered with BHIM or \*99# and account should be linked to a bank account.) or Account/IFSC.

**Scan & Pay:** User can make payment by scanning the QR code through Scan & Pay. Users can use BHIM app to scan and pay at any merchant where the BHIM UPI or Bharat QR logo is present.

**Transactions:** It is also possible to check the transaction history as well as pending UPI collect requests (if any). The transactions page also allows users to filter and get mini statements for transactions done using BHIM.

**Language:** Currently BHIM is available in 20 languages, i.e., Hindi, English, Tamil, Telugu, Malayalam, Bengali, Odia, Kannada, Gujarati, Marathi, Assamese, Bengali, Bhojpuri, Haryanvi, Marwari, Konkani, Manipuri, Khasi, Mizo and Urdu.

### 7.4.1 Steps for First Time BHIM User

1. Download and install BHIM app from the Google Play Store/Apple App Store depending on the device you are using
2. Select your preferred language from the list
3. Read the message for access which the app would require and click on Proceed
4. Allow access for necessary services to the app
5. Select the SIM card which has the mobile number registered with your respective bank you wish to link with BHIM
6. Set the application passcode required to use the app
7. Link your bank account using the bank account option
8. Set your UPI PIN by providing the last six digits of your debit card and the expiry date of the debit card
9. Click on Send option from the home screen of the app and enter the UPI ID. Select from your contact list or by entering the Account/IFSC code. You can also scan the QR of the person to whom you want to send money
10. Enter the details for Amount, Account to Debit and click on Send
11. Enter the UPI Pin you set earlier to authenticate the transaction

Note: Do not share your OTP, Debit card details or UPI pin number with anyone



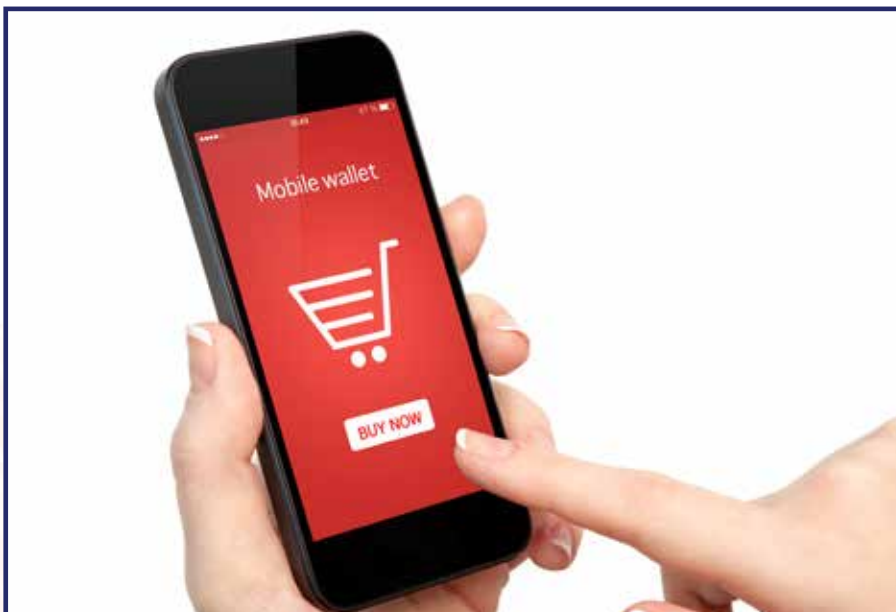
## 7.5 QR Codes - An easy way to pay



The UPI interface makes it extremely easy and convenient to make payments using the Quick Response codes or QR codes. When you accompany your parents to the market, you may have observed them making payments through QR codes. Let us see how that works:

1. Customer scans the QR placed at the merchant locations/generated on POS
2. Customer checks the transaction details like amount, merchant name etc. and confirms
3. The UPI PIN needs to be entered
4. Success confirmation is received on app along with SMS on mobile

## 7.6 Mobile Wallets – the smart way to make payments





In today's time, if a person walks out to the market without his cash and banking cards, yet he/she is able to purchase things of choice, how is that made possible?

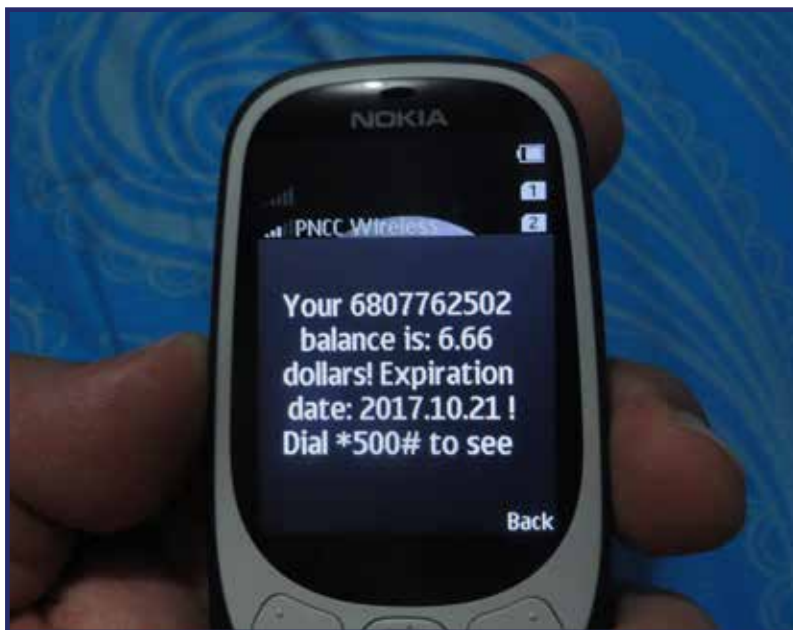
As the name suggests, a mobile wallet is a virtual wallet in the form of a mobile app that allows you to make purchases simply by scanning the QR code at the merchant establishment. A popular example of mobile wallet extensively in use today is PayTM.

Mobile wallet is the one in which you can add money through your credit or debit cards and make transactions. The mobile wallet makes the payment process easy and hassle free as it already has your credit or debit card information.

### 7.6.1 Key benefits of using mobile wallets

- Make payments using your mobile, without carrying cash or cards
- Make utility bill payments conveniently
- Transactions are fast and you receive confirmation instantly
- Secure platforms based on authenticated users
- Benefits like cashbacks, reward points etc.

### 7.7 Unstructured Supplementary Service Data (USSD)



There are many such areas and sections of people in our country that do not have access to technologies such as smartphones and high speed internet. Unstructured Supplementary Service Data (USSD) is a technology that comes as a saviour in such situations as it can be used in feature phone.

USSD allows users without a smartphone or data/internet connection to use facilities such as mobile banking by using the \*99# code. The key objective of this innovative technology is to allow financial inclusion of the less privileged sections of the society, and integrate them into mainstream banking.

In an effort to make this service accessible to maximum sections of the population, the USSD service is available in 12 languages, including English and other Indian languages such as Hindi, Tamil, Bengali, and Kannada.

### **7.7.1 USSD - Key Services**

- Checking account balance
- Generating account statements
- Making fund transfers

### **7.7.2 USSD Benefits**

- It works on all phones – feature or smartphone
- No internet connection or data is needed and works on signalling channel
- Round the clock availability

## **7.8 Other Modes of Payment**

### **7.8.1 National Automated Clearing House (NACH)**

The National Payments Corporation of India (NPCI) offers to banks, financial institutions, Corporates and Government/s a service termed as “National Automated Clearing House (NACH)” which includes both Debit and Credit.

NACH (Debit) and NACH (Credit) aims at facilitating interbank high volume, debit/credit transactions, which are repetitive in nature, electronically using the NPCI service. NACH is an electronic funds transfer system that is used for transactions of a regular nature. In the case of NACH, an account holder is able to set up instructions of a specific amount transfer to occur on regular intervals, say every month.

It is used for making bulk transactions towards the distribution of subsidies, dividends, interest, salary, pension etc. and also for bulk transactions towards the collection of payments pertaining to telephone, electricity, water, loans, investments in mutual funds, insurance premium etc.

#### **NACH is of three types:**

**NACH Debit:** A specific amount is deducted and transferred to the beneficiary's account each month according to instructions. Examples include loan payments, mutual fund investments etc.

**NACH Credit:** A specific amount is received and credited on a regular basis. Example: Monthly salary paid to an employee.

**Aadhaar Payments Bridge System (APBS):** APBS caters to making payments on the basis of Aadhaar number of the customers. The Aadhaar number becomes the financial address of the customer and facilitates the movement of the customers from one bank to another if they desire so. The APBS also subserves the goal of Financial Inclusion and facilitates the Government to transfer subsidies directly to the people through their bank accounts.

NACH offers the following key advantages:

- Helps improve customer relationships by creating a regular framework of payments
- Reduces paper use and encourages online transactions
- Reduces risk of delayed payments due to fixed schedule
- Helpful in the payment of insurance premium, loan instalments, credit card payments, mutual funds etc.
- Distribution of government subsidies to beneficiary account

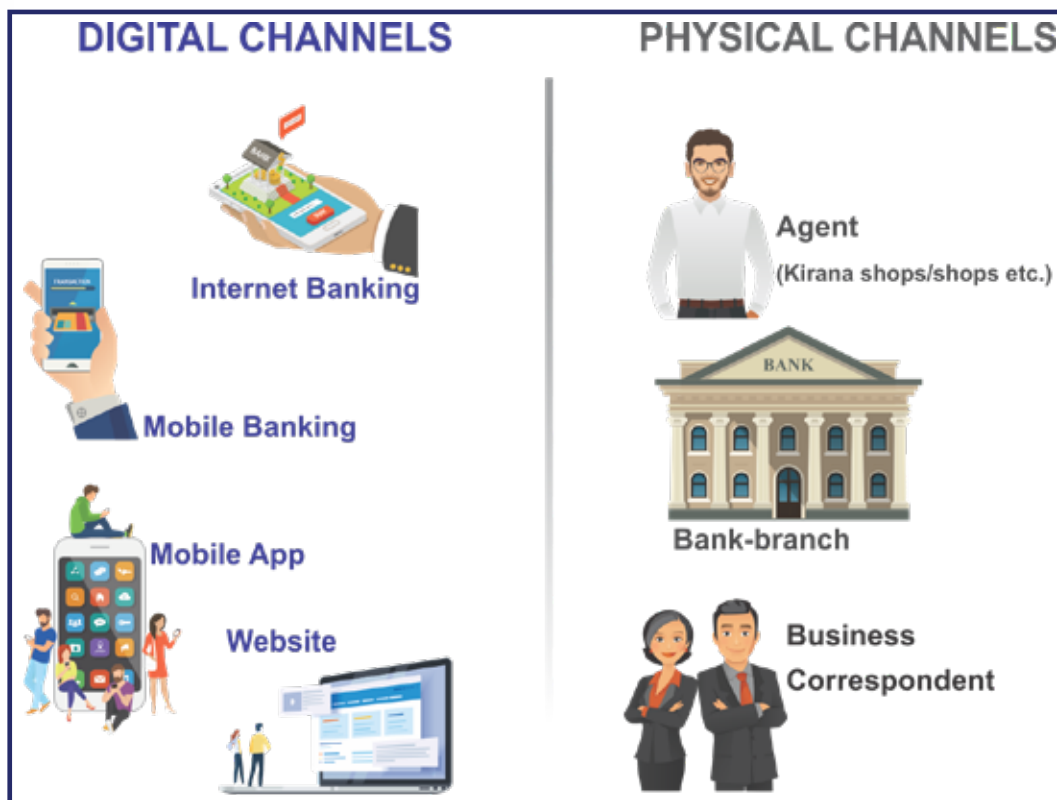
### 7.8.2 Bharat Bill Payment System (BBPS)



Bharat Bill Payment System has been conceptualised by the Reserve Bank of India (RBI) and implemented by National Payments Corporation of India (NPCI). It serves as a one-stop ecosystem for payment of all bills, accessible 24x7 to customers across the country offering certainty, reliability and safety of transactions.

Bharat BillPay supports multiple payment modes/methods and channels and provides instant confirmation to customer via SMS or receipt with Be-assured symbol.

Customer can pay all recurring payments at one destination via any of the Bharat Bill-Pay enabled channels. The customer can visit a digital channel or retails assisted channel of his bank or any payment app to make a bill payment.



### Customer Workflow:

Step-1 Customer visits any of the preferred banking app/website or payment app or any kirana shop enabled with Bharat BillPay (Bharat BillPay logo is present on all channels).

Step-2 Customer selects the category he/she wishes to pay for.

Step-3 Customer enters basic details like mobile no, customer Id, etc. for fetching his/her bill. The bill fetch is basically where customer is able to see his bill details i.e. bill amount due date etc.

Step-4 Customer enters his payment details or selects the preferred payment mode i.e. UPI, net-banking, card, wallet etc.

Step-5 Once the details have been entered by the customer successfully, the consumers account gets debited and gets successful receipt with a Be-Assured mark.

An effective mechanism for handling consumer complaints has also been put in place to support customer regarding any bill related problems in Bharat BillPay.

### 7.8.3 National Electronic Toll Collection (NETC)

National Electronic Toll Collection (NETC) is a program which uses NETC FASTag device that employs Radio Frequency Identification (RFID) technology, for making toll payments directly from the Customer account linked to their FASTag.



National Electronic Toll Collection (NETC) program has been launched by Government of India along with National Payments Corporation of India (NPCI) to automate toll collection to ease out traffic woes and create an efficient and interoperable system on a national scale covering all toll plazas.

The main objective of NETC Program is implementing unified and interoperable electronic toll collection in India and to serve the sub-goal of Government of India of:

- Electronification of retail payments
- Lowering of air pollution levels by reducing the congestion around toll plaza
- Reduction of fuel consumption

#### Key Feature of FASTag

**Interoperability:** The NETC ecosystem supports multiple FASTag issuers and acquirers, i.e. tag issued by any member in the program is accepted at all toll plazas (covered under NETC Program) in a safe and secure manner.

**Flexibility to link account:** Customers can link their NETC FASTag to their existing savings/current/prepaid account basis the offering from the issuer member banks. For opening a prepaid account, it is not mandatory to have an existing relationship with the authorized issuer banks.

**Cashless payment:** FASTag facilitates electronic payments at the toll plaza while the vehicle is in motion.

**Save time and fuel:** Customer can travel without stopping at the toll plaza by using the FASTag thus reduce congestion at plazas, saving fuel as well as travel time.



## Summary

- Internet Banking transactions are primarily of three types: NEFT, RTGS & IMPS.
- Mobile banking is the process of making financial transactions on a mobile device be it smartphone, tablet etc.
- UPI combines the power of multiple bank accounts into a single mobile app.
- Bharat Interface for Money (BHIM) is an app, created by NPCI, which lets you make simple, easy and quick payment transactions using Unified Payments Interface (UPI).
- A mobile wallet is a virtual wallet in the form of a mobile app that allows you to make purchases simply by scanning the QR code at the merchant establishment.
- USSD allows users without a smartphone or data/internet connection to use facilities such as mobile banking by using the \*99# code.
- NACH (Debit) and NACH (Credit) aims at facilitating interbank high volume debit/credit transactions, which are repetitive in nature, electronically using the NPCI service.
- Bharat BillPay supports multiple payment modes/methods and channels and provides instant confirmation to customer via SMS or receipt with Be-assured symbol.
- National Electronic Toll Collection (NETC) is a program which uses NETC FASTag device that employs Radio Frequency Identification (RFID) technology, for making toll payments directly from the Customer account linked to their FASTag.

## Abbreviations

|             |  |
|-------------|--|
| <b>RBI</b>  | Reserve Bank of India                  |
| <b>NEFT</b> | National Electronic Fund Transfer      |
| <b>IFSC</b> | Indian Financial System Code           |
| <b>RTGS</b> | Real-Time Gross Settlement             |
| <b>IMPS</b> | Immediate Payment Service              |
| <b>NACH</b> | National Automated Clearing House      |
| <b>NPCI</b> | National Payments Corporation of India |
| <b>MMID</b> | Mobile Money Identifier                |
| <b>UPI</b>  | Unified Payments Interface             |
| <b>BHIM</b> | Bharat Interface for Money             |



|                 |   |
|-----------------|---|
| <b>QR Codes</b> | Quick Response Codes                    |
| <b>PoS</b>      | Point of Sale                           |
| <b>PIN</b>      | Personal Identification Number          |
| <b>SMS</b>      | Short Message Service                   |
| <b>USSD</b>     | Unstructured Supplementary Service Data |
| <b>SIM</b>      | Subscriber Identification Module        |
| <b>BBPS</b>     | Bharat Bill Payment System              |
| <b>NETC</b>     | National Electronic Toll Collection     |
| <b>RFID</b>     | Radio Frequency Identification          |

### Useful Link

<https://www.npci.org.in/what-we-do/upi/product-overview>

<https://www.npci.org.in/what-we-do/nach/product-overview>

<https://www.npci.org.in/what-we-do/imps/product-overview>

## Unit 7: Self-Test Questions

### Choose the correct option(s)

- Which of the following internet banking options allows for 24x7 instant funds transfer service that can be accessed on multiple channels like Mobile, Internet, ATM and SMS?  
a) NEFT                      b) RTGS                      c) IMPS
- This makes it extremely easy and convenient to make UPI based payments  
a) QR codes                b) Aadhaar                      c) 4G
- Which of the following is an example of a mobile wallet?  
a) PayTM                      b) GPay                      c) BHIM

**Mention the full forms of following**

1. RTGS - \_\_\_\_\_
2. IMPS - \_\_\_\_\_
3. IFSC - \_\_\_\_\_
4. NACH - \_\_\_\_\_
5. USSD- \_\_\_\_\_

**Answer the following**

1. What are the advantages of NEFT?

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2. What are the vital services provided by Mobile Banking?

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3. What is UPI? Explain in three or four lines

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4. NACH is of how many types? Describe in brief about them.

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5. What are the key benefits of mobile wallets?

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# Answer Key

|               |                           |   |
|---------------|---------------------------|---|
| <b>Unit 1</b> | Choose the correct option | 1. Increased Creativity 2. Coordinator  |
| <b>Unit 2</b> | Choose the correct option | 1. Money 2. Account 3. Need   |
|               | True or False             | 1. True 2. False  |
| <b>Unit 3</b> | Choose the correct option | 1. Barter System 2. Standard of Value<br>3. Current Account   |
|               | True or False             | 1. True 2. False 3. True  |
| <b>Unit 4</b> | Choose the correct option | 1. Issuing cheques<br>2. Enhancing India's digital economy  |
|               | Fill in the blanks        | 1. Government, Banks 2. Transaction ID<br>3. Black  |
| <b>Unit 5</b> | Choose the correct option | 1. Prepaid Card 2. Credit period<br>3. Accuracy and convenience<br>4. Brown Label ATM 5. CDM  |
|               | True/False                | 1. True 2. False 3. False   |
|               | Fill in the Blanks        | 1. PoS 2. White Label 3. mPoS<br>4. Payment aggregator  |
| <b>Unit 6</b> | Choose the correct option | 1. UIDAI 2. Only Customer 3. Portable   |
|               | True/False                | 1. False 2. False 3. True   |
| <b>Unit 7</b> | Choose the correct option | 1. IMPS 2. QR Codes 3. PayTM  |
|               | Mention full forms        | RTGS – Real-Time Gross Settlement<br>IMPS - Immediate Payment Service<br>IFSC - Indian Financial System Code<br>NACH – National Automated Clearing House<br>USSD - Unstructured Supplementary Service<br>Data |



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