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**NAAC ACCREDITED 'A' GRADE**



**Topic: Digital Payments**

**Course Title: B. Com**

**Paper: E-Commerce and Business Ethics**

**Unit: 3**

**Semester: II**

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## DIGITAL PAYMENTS

Digital payment is a way of payment which is made through digital modes. In digital payments, payer and payee both use digital modes to send and receive money. It is also called electronic payment.

(source: [upipayments.co.in](http://upipayments.co.in))

### DIGITAL PAYMENT METHODS [SOURCE: <http://cashlessindia.gov.in/>]

The Digital India programme is a flagship programme of the Government of India with a vision to transform India into a digitally empowered society and knowledge economy. "Faceless, Paperless, Cashless" is one of the professed roles of Digital India.

As part of promoting cashless transactions and converting India into a less-cash society, various modes of digital payments are available.

#### These modes are:

##### 1. BANKING CARDS (DEBIT / CREDIT / CASH / TRAVEL / OTHERS)

Banking cards offer consumers more security, convenience, and control than any other payment method. The wide variety of cards available – including credit, debit and prepaid – offers enormous flexibility, as well. These cards provide 2 factor authentication for secure payments e.g. secure PIN and OTP. RuPay, Visa, MasterCard are some of the examples of card payment systems. Payment cards give people the power to purchase items in stores, on the Internet, through mail-order catalogues and over the telephone. They save both customers and merchants' time and money, and thus enable them for ease of transaction.

#### How to get it:

- Provide KYC (Know Your Customer) information to open a new account
- Apply for Card with option of Debit / Credit Card
- Get a PIN

#### Service Activation:

- Visit an ATM to activate PIN
- May take about 3-7 days

#### What is required for Transaction:

- PoS terminal or online payment gateway
- Present Card physically or card details for online transaction
- Provide PIN
- Provide OTP (One Time Password) received on registered mobile to complete online transaction for merchant website.
- Self-service and/or Assisted mode

#### Transaction Cost:

- NIL to customer for merchant transactions.
- Annual fee and limits on ATM transaction by banks discretion.
- 0.50% to 2.25% paid by merchant
- Cash-out charged to customer in case of credit cards @ 1% to 3.5% of transaction value.

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

The innovative payment service \*99# works on Unstructured Supplementary Service Data (USSD) channel. This service allows mobile banking transactions using basic feature mobile phone, there is no need to have mobile internet data facility for using USSD based mobile banking. It is envisioned to provide financial deepening and inclusion of underbanked society in the mainstream banking services.

\*99# service has been launched to take the banking services to every common man across the country. Banking customers can avail this service by dialling \*99#, a "Common number across all Telecom Service Providers (TSPs)" on their mobile phone and transact through an interactive menu displayed on the mobile screen. Key services offered under \*99# service include, interbank account to account fund transfer, balance enquiry, mini statement besides host of other services. \*99# service is currently offered by 51 leading banks & all GSM service providers and can be accessed in 12 different languages including Hindi & English as on 30.11.2016 (Source: NPCI). \*99# service is a unique interoperable direct to consumer service that brings together the diverse ecosystem partners such as Banks & TSPs (Telecom Service Providers).

**How to get it:**

- Provide KYC (Know Your Customer) information to open a new account
- Mobile no. should be linked with bank a/c
- Register for USSD/Mobile Banking
- Get MMID (Mobile Money Identifier)
- Get MPIN (Mobile PIN)

**Service Activation:**

- None
- 1-2 minutes

**What is required for Transaction:**

- Remember MMID
- Remember MPIN
- Dial \*99#
- Registered mobile number with any phone (feature or smart)
- Self Service mode

**Transaction Cost:**

- NIL by system
- Rs. 0.50 charged to customer

(Disclaimer: The transaction costs are based on available information and may vary based on banks.)

**Services Offered:**

- Balance enquiry
- Mini Statement
- Funds transfer
  - MMID
  - A/c no.
  - Aadhaar
- Know MMID
- Change M-PIN
- Generate OTP

**Funds Transfer limit:**

- Rs 5,000/day
- Rs 50,000/annum

### 3. AADHAAR ENABLED PAYMENT SYSTEM (AEPS)

AEPS is a bank led model which allows online interoperable financial transaction at PoS (Point of Sale / Micro ATM) through the Business Correspondent (BC)/Bank Mitra of any bank using the Aadhaar authentication.

**How to get it:**

- Provide KYC (Know Your Customer) information to open a new account
- Aadhaar Number should be linked with bank a/c

**Service Activation:**

- None
- 1-2 minutes post Aadhaar seeding

**What is required for Transaction:**

- MicroATM
- Remember Aadhaar
- Give Bank name
- Present self (Aadhaar holder) with Bio-metrics (Finger and/or IRIS)
- Assisted mode

**Transaction Cost:**

- NIL to customer
- Merchant or BC may get charged or paid based on bank's discretion

Disclaimer: The transaction costs are based on available information and may vary based on banks.

**Services Offered:**

- Balance Enquiry
- Cash Withdrawal
- Cash Deposit
- Aadhaar to Aadhaar funds transfer
- Payment Transactions (C2B, C2G Transactions)

**Funds Transfer limit:**

- Banks define limit. No limit for RBI.

(Disclaimer: The funds transfer limits are based on available information and may vary based on banks.)

#### **4. UNIFIED PAYMENTS INTERFACE (UPI)**

Unified Payments Interface (UPI) is a system that powers multiple bank accounts into a single mobile application (of any participating bank), merging several banking features, seamless fund routing & merchant payments into one hood. It also caters to the "Peer to Peer" collect request which can be scheduled and paid as per requirement and convenience. Each Bank provides its own UPI App for Android, Windows and iOS mobile platform(s).

**How to get it:**

- Bank a/c
- Mobile number should be linked with bank a/c
- Smart Phone with internet facility
- Debit Card for re-setting MPIN.

**Service Activation:**

- Download the App for UPI
- Do registration online on the App with a/c details
- Create a virtual ID
- Set MPIN
- 5-7 minutes

**What is required for Transaction:**

- Smartphone with internet facility
- Registered device only
- Use registered MPIN
- Self Service Mode

**Transaction Cost:**

- NIL to customer by most Banks
- Customer pays for data charges

Disclaimer: The transaction costs are based on available information and may vary based on banks.

**Services Offered:**

- Balance Enquiry
- Transaction History
- Send / Pay Money
  - //Virtual Address
  - A/c no. & IFSC code
  - Mobile no. and MMID
  - Aadhaar (to be made functional)
- Collect Money
  - Virtual Address
- Add bank account
- Change / Set MPIN
- Notifications
- A/c Management

**Funds Transfer limit:**

- 1 lakh / transaction

Disclaimer: The funds transfer limits are based on available information and may vary based on banks.

**5. MOBILE WALLETS**

A **mobile wallet** is a way to carry cash in digital format. You can link your credit card or debit card information in mobile device to mobile wallet application or you can transfer money online to mobile wallet. Instead of using your physical plastic card to make purchases, you can pay with your smartphone, tablet, or smart watch. An individual's account is required to be linked to the **digital wallet** to load money in it. Most banks have their e-wallets and some private companies. e.g. **Paytm, Freecharge, Mobikwik, Oxigen, mRuppee, Airtel Money, Jio Money, SBI Buddy, itz Cash, Citrus Pay, Vodafone M-Pesa, Axis Bank Lime, ICICI Pockets, SpeedPay** etc.

**How to get it:**

- Option to open Zero KYC or Full KYC wallet
- Option of Consumer vs. Merchant wallet
- Mobile Number
- An App to be downloaded in smart phone

**Service Activation:**

- Load money (subject to regulatory limits) using internet banking or merchant locations
  - Bank A/c
  - All Cards
  - Cash-In

**What is required for Transaction:**

- Smartphone or internet
- Use MPIN
- Self-service and/or Assisted mode

**Transaction Cost:**

- Customer pays for remittances to bank a/c @ 0.5%-2.5% of fixed fee.
- May pay for data charges in self-service mode.

Disclaimer: The transaction costs are based on available information and may vary based on banks.

**Services Offered:**

- Balance Enquiry
- Passbook/ Transaction history
- Add money

- Bank A/c
- All Cards
- Cash-In
- Accept Money
- Pay money
  - Another wallet (mobile no.) with same provider
  - Pay merchant
  - Bar Code reader
- Manage Profile
- Notifications

**Funds Transfer limit:**

- For Users
  - No KYC - Rs 20,000/ month (revised from Rs 10,000 to current till 30th Dec. 2016)
  - Full KYC – Rs 1,00,000/- month
- For Merchants
  - Self-Declared - Rs 50,000/ month
  - With KYC – Rs 1,00,000/- month

Disclaimer: The funds transfer limits are based on available information and may vary based on banks.

**6. BANKS PRE-PAID CARDS**

**How to get it:**

- Provide full KYC (Know Your Customer) information to open new account
- Apply for Wallet/ Pre-paid Card
- Get a MPIN / PIN

**Service Activation:**

- Load money (subject to regulatory limits) using branch, or internet banking
  - Bank A/c
  - All Cards
- 1-2 days for card
- 5-7 minutes for wallet

**What is required for Transaction:**

- Smartphone or internet
- Use MPIN
- Self-service and/or Assisted mode

**Transaction Cost:**

- On loading the pre-paid card, Customer may pay service charges for transaction or fixed fee, upfront + each transaction.
- Loading wallets is mostly free.
- Merchant is charged fee 0.50% to 2.50 %
- Cash out is charged to customer as fixed fee or 1% to 2.5% of value of transaction. Only from Cards

Disclaimer: The transaction costs are based on available information and may vary based on banks.

**Services Offered:**

- Balance Enquiry
- Passbook/ Transaction history
- Add money
  - Bank A/c
  - All Cards

- Accept Money
- Pay money
  - Another wallet (mobile no.) with same provider
  - Pay merchant
  - Bar Code reader
  - Cash-Out (Cash withdrawal)
  - Touch and Pay
- Manage Profile
- Notifications

**Funds Transfer limit:**

- For Users
  - Rs 1,00,000/- for Users
- For Merchants
  - Self-Declared - Rs 50,000/ month
  - With KYC – Rs 1,00,000/- month

(Disclaimer: The funds transfer limits are based on available information and may vary based on banks.)

**7. POINT OF SALE**

A point of sale (PoS) is the place where sales are made. On a macro level, a PoS may be a mall, a market or a city. On a micro level, retailers consider a PoS to be the area where a customer completes a transaction, such as a checkout counter. It is also known as a point of purchase.

**Physical PoS**

**Necessary conditions for service initiation:**

- Handheld Device with card and /or bio-metric reader
- Merchant Bank a/c
- Internet connectivity GPRS/ Landline

**Service Activation:**

- Paper work with Bank for merchant bank a/c
- Deposit certain amount
- Collect device
- Configuration and training to operator

**What is required for Transaction:**

- Any Card
- Resident for bio-metric authentication (AEPS)
- Assisted Mode

**Funds Transfer limit:**

- No limit for regulator
- Merchant’s Bank and payee Bank may set limit based on its own discretion

Disclaimer: The transaction costs are based on available information and may vary based on banks.

**Service Available from no. of operators:**

- Source RBI – Aug’16
  - 14.62 lakh
  - Interoperable

## Mobile PoS

### Necessary conditions for service initiation:

- Smartphone
- App from bank
- Integrated or external card and /or bio-metric reader
- Reader connects using jack or bluetooth
- Internet connectivity 2G/3G/4G, or Wi-Fi
- QR code and Bar code reader

### Service Activation:

- Merchant Bank a/c
- Download App
- Register device and/or mobile with merchant bank a/c and bank
- May require training or readable instructions

### What is required for Transaction:

- Any Card
- Resident for bio-metric auth (AEPS) for registered devices
- Wallet account
- Scanner for reading QR Code and Bar Code
- Self-service and/or Assisted mode

### Funds Transfer limit:

- No limit for regulator
- Merchant's Bank and payee Bank may set limit based on its own discretion

Disclaimer: The transaction costs are based on available information and may vary based on banks.

## Virtual PoS

### Necessary conditions for service initiation:

- Smartphone and /or Web browser
- Internet connectivity 2G/3G/4G, or Wi-Fi or landline
- E-payment gateway
- Virtual A/c for transactions
- May need QR code

### Service Activation:

- Merchant Bank a/c with some merchant credentials
- In case of QR code for pull transactions
- May require ability to identify or authenticate user for service delivery

### What is required for Transaction:

- Any Card
- Wallet Account
- Scanner for reading QR Code and Bar Code

### Funds Transfer limit:

- No limit for regulator
- Merchant's Bank and payee Bank may set limit based on its own discretion

Disclaimer: The transaction costs are based on available information and may vary based on banks.

## 8. INTERNET BANKING

Internet banking, also known as online banking, e-banking or virtual banking, is an electronic payment system that enables customers of a bank or other financial institution to conduct a range of financial transactions through the financial institution's website.

### **Different types of online financial transactions are:**

#### **National Electronic Fund Transfer (NEFT)**

National Electronic Funds Transfer (NEFT) is a nation-wide payment system facilitating one-to-one funds transfer. Under this Scheme, individuals, firms and corporates can electronically transfer funds from any bank branch to any individual, firm or corporate having an account with any other bank branch in the country participating in the Scheme. Individuals, firms or corporates maintaining accounts with a bank branch can transfer funds using NEFT. Even such individuals who do not have a bank account (walk-in customers) can also deposit cash at the NEFT-enabled branches with instructions to transfer funds using NEFT. However, such cash remittances will be restricted to a maximum of Rs.50,000/- per transaction. NEFT, thus, facilitates originators or remitters to initiate funds transfer transactions even without having a bank account. Presently, NEFT operates in hourly batches - there are twelve settlements from 8 am to 7 pm on week days (Monday through Friday) and six settlements from 8 am to 1 pm on Saturdays.

#### **Real Time Gross Settlement (RTGS)**

RTGS is defined as the continuous (real-time) settlement of funds transfers individually on an order by order basis (without netting). 'Real Time' means the processing of instructions at the time they are received rather than at some later time; 'Gross Settlement' means the settlement of funds transfer instructions occurs individually (on an instruction by instruction basis). Considering that the funds settlement takes place in the books of the Reserve Bank of India, the payments are final and irrevocable. The RTGS system is primarily meant for large value transactions. The minimum amount to be remitted through RTGS is 2 lakh. There is no upper ceiling for RTGS transactions. The RTGS service for customer's transactions is available to banks from 9.00 hours to 16.30 hours on week days and from 9.00 hours to 14:00 hours on Saturdays for settlement at the RBI end. However, the timings that the banks follow may vary depending on the customer timings of the bank branches.

#### **Electronic Clearing System (ECS)**

ECS is an alternative method for effecting payment transactions in respect of the utility-bill-payments such as telephone bills, electricity bills, insurance premia, card payments and loan repayments, etc., which would obviate the need for issuing and handling paper instruments and thereby facilitate improved customer service by banks / companies / corporations / government departments, etc., collecting / receiving the payments.

#### **Immediate Payment Service (IMPS)**

IMPS offers an instant, 24X7, interbank electronic fund transfer service through mobile phones. IMPS is an emphatic tool to transfer money instantly within banks across India through mobile, internet and ATM which is not only safe but also economical both in financial and non-financial perspectives.

#### **Objectives of IMPS:**

- To enable bank customers to use mobile instruments as a channel for accessing their banks accounts and remit funds
- Making payment simpler just with the mobile number of the beneficiary

- To sub-serve the goal of Reserve Bank of India (RBI) in electronification of retail payments
- To facilitate mobile payment systems already introduced in India with the Reserve Bank of India Mobile Payment Guidelines 2008 to be inter-operable across banks and mobile operators in a safe and secured manner
- To build the foundation for a full range of mobile based Banking services.

## **9. MOBILE BANKING**

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Mobile banking is a service provided by a bank or other financial institution that allows its customers to conduct different types of financial transactions remotely using a mobile device such as a mobile phone or tablet. It uses software, usually called an app, provided by the banks or financial institution for the purpose. Each Bank provides its own mobile banking App for Android, Windows and iOS mobile platform(s).

## **10. MICRO ATMS**

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Micro ATM meant to be a device that is used by a million Business Correspondents (BC) to deliver basic banking services. The platform will enable Business Correspondents (who could be a local kirana shop owner and will act as 'micro ATM') to conduct instant transactions.

The micro platform will enable function through low cost devices (micro ATMs) that will be connected to banks across the country. This would enable a person to instantly deposit or withdraw funds regardless of the bank associated with a particular BC. This device will be based on a mobile phone connection and would be made available at every BC. Customers would just have to get their identity authenticated and withdraw or put money into their bank accounts. This money will come from the cash drawer of the BC. Essentially, BCs will act as bank for the customers and all they need to do is verify the authenticity of customer using customers' UID. The basic transaction types, to be supported by micro ATM, are Deposit, Withdrawal, Fund transfer and Balance enquiry.