

DIGITAL BANKING

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Digital banking is the move to online banking where banking services are delivered over the internet. The advantages for banks and customers are **providing more convenient and faster banking services.**

It involves **high levels of process automation and web-based services** and may include APIs enabling cross-institutional service composition to deliver banking products and provide transactions. It provides the ability for users to **access financial data through desktop, mobile and ATM services.**

Examples of digital banking services and companies are:

TagPay - software company that developed a Digital Banking System

Stripe - online payment environment for private individuals

Adyen - ecommerce for digital companies including Facebook

Major benefits of digital banking are: Business efficiency, Cost savings, Increased accuracy, Improved competitiveness, Greater agility and Enhanced security.

Emerging forms of digital banking are

- **BaaS - Banking as a Service** (allows for third party integration)
- **BAAP - Banking as a Platform** (for integrating core systems with software)
- **Cloud-based Infrastructure** (allows less reliance on IT staff)
- **White Label Banking** (such as co-branded credit cards).

These solutions build on enhanced technical architectures as well as different business models.

Mobile Banking

Mobile phones, as a medium for extending banking services, have attained greater significance because of their ubiquitous nature. The rapid growth of mobile users in India, through wider coverage of mobile phone networks, have made this **medium an important**

platform for extending banking services to every segment of banking clientele in general and the unbanked segment in particular. Ex: IMPS.

'Mobile Banking transaction' means undertaking banking transactions using mobile phones by bank customers that involve accessing / credit / debit to their accounts.

For operationalising Mobile Banking in India, Statutory Guidelines issued by **Reserve Bank of India under section 18** of Payment & Settlement Systems Act, 2007, (ACT 51 of 2007).

The **guidelines are applicable to all commercial banks** (including Regional Rural Banks), Urban Cooperative Banks, State Cooperative Banks and District Central Cooperative Banks. The guidelines, finalised following a wide consultative process with the stakeholders, were **first issued in October 2008.**

Banks are permitted to **offer mobile banking services** (through SMS, USSD or mobile banking application) after obtaining necessary permission from the Department of Payment & Settlement Systems, Reserve Bank of India. Mobile Banking services are to be made available to bank customers irrespective of the mobile network.

The guidelines issued by Reserve Bank on **"Know Your Customer (KYC)", "Anti Money Laundering (AML)"** and **"Combating the Financing of Terrorism (CFT)"** from time to time would be applicable to mobile based banking services also.

Banks shall file **Suspicious Transaction Report (STR)** to **Financial Intelligence Unit - India (FIU-IND)** for mobile banking transactions as in the case of normal banking transactions.

MPIN Generation for Mobile Banking

In order to address the challenges in extending the facility of **MPIN generation to the customers registered for mobile banking,** banks have to explore various options. In order to quicken the process of MPIN generation and also widen the accessibility to their mobile banking

registered customers, banks can consider **adopting various channels / methods such as:**

- **Through the ATM channels** (similar to option available for change of PIN on their own ATMs as well as in inter-operable ATM networks)
- **Through an option provided in the USSD menu** for mobile banking (both their own USSD platform, if any, as well as under the inter-operable USSD Platform for mobile banking)
- **Banks' own internet banking website,** with necessary safeguards.
- **Use of MPIN mailers** (like PIN mailers for cards)
- **Common website** can also be designed as an industry initiative.

Transactions up to Rs 5000/- can be facilitated by banks without end-to-end encryption. The risk aspects involved in such transactions may be addressed by the banks through adequate security measures. **To ensure inter-operability** between banks, and between their mobile banking service providers, banks shall adopt the message formats like **ISO 8583,** with suitable modification to address specific needs.

Banks are permitted to offer mobile banking facility to their customers **without any daily cap for transactions involving purchase of goods/services.** However, banks may put in place per transaction limit depending on the bank's own risk perception, with the approval of its Board.

POS (Point-Of-Sale)

• A **Point-Of-Sale (POS)** or point of purchase (POP) is the time and place where a retail transaction is completed. **After receiving payment,** the merchant may issue a receipt for the transaction, which is usually printed but is increasingly being **dispensed with or sent electronically.**

• Any form of payment can be used, such as cash, debit cards, credit cards, mobile payments and even Bitcoin.

Pay bills online

• This technology is set up just to pay bills online; the reason behind setting up this technology is **minimizing the use of paper** and going green by simply transferring money online to the beneficiary be it your electricity bill, gas bill, phone bill, DTH recharges, etc. most of your bill payments can be made online through internet and wire transfers.

• Using this facility, **you can keep a track on your account**, estimate the money you consume monthly, analyze your budget and also plan your savings online by seeing various investment options available for you online.

CORE (Centralized Online Real-time Exchange) banking

• **CORE banking** is anywhere banking with the same bank be it any location.

• All this can be done without sending the cheque outstation for clearing the transaction. This saves on time and money for sending the cheque for clearing to another city.

• Banking software and network technology allow a bank to **centralize its record keeping** and allow access from any location.

• **For example**, if you have an account with ABCD Bank LTD, in X location or X branch you can also process your transaction in Y location or Y branch.

Near Field Communication (NFC)

It is a short-range, wireless link based on **Radio-Frequency Identification Technology (RFID)** that has the ability to transfer small amounts of data between two devices held close to each other. The SIM card in a phone acts a **smart card that identifies your account to a network**. On NFC phones, the **SIM card acts a Secure Element** that can hold other apps such as payment cards. For banking, NFC identifies an individual and his/her bank account information to a computer device.

NFC is something that we actually see all around us. Think access cards for hotel rooms and offices, metro train cards, car keys, e-tickets printout machines, etc. Most global mobile phones have NFC capabilities that can be used for various financial transactions.

The advantages that NFC transactions offer are galore. For starters, there is no need to hunt for that loose change. No need to count. No need to stand in those dreadful queues for hours. Minimum/no transaction errors. The money is protected even when you lose your phone. **To enable NFC transactions through your phone**, you simply need to have a phone with an NFC chip and then have to download an app (like Google Wallet or Apple Pay) that connects with your bank account/credit card or debit card or a prepaid account that you have connected to.

Plastic Money

Plastic Money consists in a shape of **Master card, debit card, credit card and ATM card**. The basic purpose of plastic Money is to facilitate the **People easily and quickly in case of Cash/Money Transaction**.

Technology for banking has **simplified banking** and reduced time it consumed to process transaction by introducing the following and there are various types of plastic money:

1. Debit cards & Credit Cards

• A **debit card** (also known as a bank card, plastic card or check card) is a **plastic payment card** that can be used instead of cash when making purchases. It is similar to a **credit card**, but unlike a credit card, the **money comes directly from the user's bank account** when performing a transaction.

• Debit cards are **issued by banks** and are linked to a bank account. Whereas Credit cards are **issued by banks / other entities approved by RBI**.

• Debit cards can be used for shopping, paying for fuel, grocery, withdrawing money from the automated teller machine. The credit cards are **used** for purchase of goods and services at Point of Sale (POS) and E-commerce (online purchase) / through Interactive Voice Response (IVR) / Recurring transactions / Mail Order Telephone Order (MOTO).

2. ATM (Automated Teller Machine)

• An **Automated Teller Machine (ATM)** is an electronic telecommunications device that enables customers of financial institutions to **perform financial transactions**, such as cash withdrawals, deposits, transfer funds, or obtaining account information, at any time and

without the need for direct interaction with bank staff.

Note: State having highest number of ATMs: **Maharashtra**; India's first talking ATM's: **Ahmedabad, Gujarat**

Types of ATM

Different Types of ATM are as Follows:

1. **Onsite ATM** - Within the premises of bank

2. **Offsite ATM** - Outside the bank premises (Shopping Malls, shopping markets, airports, hospitals, business areas etc)

3. **White Label ATM** - Provided by NBFC

4. **Green Label ATM** - Provided for Agricultural Transaction

5. **Pink label ATM** - Women Banking (Launched by SBI)

6. **Worksite ATM** - Is located within the premises of an organisation and is generally meant only for the employees of the organisation.

7. **Orange Label ATM** - Provided for Share Transactions

8. **Yellow Label ATM** - Provided for E-commerce

9. **Brown label ATM** - Hardware and the lease of the ATM machine is owned by a service provider, but cash management and connectivity to banking networks is provided by a sponsor bank.

10. **Cash Dispenser** - Allows only cash withdrawals, balance enquiry and mini statement requests, Cash Dispenser (CD).

11. **Mobile ATM** - refers to an ATM that moves in various areas for the customers. Few private banks have introduced ATM on wheels.

Time limit for resolution of the complaint pertaining to failed ATM transactions

The time limit, for resolution of customer complaints by the issuing banks, is within 7 working days from the date of receipt of customer complaint. Hence the bank is supposed to re-credit the customer's account within 7 working days. For failure to re-credit the customer's account within 7 working days of receipt of the complaint from the customer, the bank is liable to pay Rs 100 per day as compensation to the customer.

Prepaid Cards:

➤ Prepaid cards are issued by **banks / non-banks** against the **value paid in advance by the cardholder** and stored in

such cards which can be issued as smart cards or chip cards, internet wallets, mobile accounts etc.

➤ The maximum value that can be stored in a prepaid card at any point of time is **Rs 50,000**.

➤ The prepaid cards issued by the banks can be used to **withdraw cash from an ATM**, purchase of goods and services at Point of Sale (POS)/E-commerce (online purchase) and for **domestic fund transfer** from one person to another. Such prepaid cards are known as open system prepaid cards.

➤ However, the prepaid cards issued by authorised non-bank entities can be used only for purchase of goods and services at Point of Sale (POS)/E-commerce (online purchase) and for domestic fund transfer from one person to another. Such prepaid cards are known as **semi-closed system prepaid cards**.

➤ These cards can be used **only domestically**.

The term prepaid card may be used to refer to the following:

➤ **Prepaid debit card**, a card that debits money from an associated account that ordinarily requires use of a PIN code for verification.

➤ **Prepaid credit card**, a card that debits money from an associated account that ordinarily uses a signature rather than a PIN for verification.

➤ **Stored-value card**, a card that has a monetary value that is recorded as data on the card itself, and thus can be used without online access to an associated account.

Other Types of Cards:

1) Smart Card:

➤ It contains an electronic chip which is used to store cash. There is no requirement of any signature, identification and payment authorization. The exact amount is deducted from the smart card during payment and is collected by the smart card read machines.

2) Co-Branded Cards

➤ A credit card that is offered by the credit card company that is jointly sponsored by bank and a retail merchant.

These cards generally covered with variety of incentives such as discounts and rebates.

3) Rupay Card

➤ Rupay Card is the **Indian version of debit/credit card**. It is similar to international cards such as Master and Visa. It is launched by NPCI (National Payment Corporation of India) in India. All major public sector banks have started issuing Rupay Card.

➤ Benefits of Rupay card:

• Transaction cost is reduced with the help of Rupay card.

• Users get alert for every transaction made through this card.

• Processing fee of Rupay card is considerably low as compared to other credit/debit cards.

4) Kisan Credit Cards

➤ Kisan Credit Cards is a scheme to provide timely and credit to farmers to meet their production credit needs besides meeting Image result for Kisan Credit Cards contingency expenses and expenses related to ancillary activities through simplified procedure. The Kisan Credit Card offering credit to farmers in two types: **Cash Credit & Term Credit**.

Payment and Settlement Systems in India

Payment and settlement systems in India are payment and settlement systems in India for financial transactions. They are covered by the **Payment and Settlement Systems Act, 2007 (PSS Act)**, legislated in December 2007 and **regulated by the Reserve Bank of India** and the Board for Regulation and Supervision of Payment and Settlement Systems.

India has multiple payments and settlement systems, **both gross and net settlement systems**. For gross settlement India has a Real Time Gross Settlement (RTGS) system called by the same name and net settlement systems include Electronic Clearing Services (ECS Credit), Electronic Clearing Services (ECS Debit), credit cards, debit cards, the National Electronic Fund Transfer (NEFT) system and Immediate Payment Service (IMPS).

RTGS (Real Time Gross Settlement)

• The acronym 'RTGS' stands for Real Time Gross Settlement, which can be defined as the continuous (real-time) settlement of funds transfers individually on an order by order basis (without netting).

• The RTGS system is primarily meant for large value transactions.

• The minimum amount to be remitted through RTGS is **Rs.2 lakh**.

• There is **no upper ceiling** for RTGS transactions.

• Beneficiary bank has to credit the recipient's account **within 30 minutes** of receiving the funds transfer message.

Processing Charges / Service Charges for RTGS transactions:

• With a view to rationalize the service charges levied by banks for offering funds transfer through RTGS system, a broad framework has been mandated as under:

a) Inward transactions - Free, no charge to be levied.

b) Outward transactions - 2 lakh to 5 lakh - not exceeding 30.00 per transaction;

Above 5 lakh - not exceeding 55.00 per transaction.

NEFT (National Electronic Funds Transfer)

• **National Electronic Funds Transfer (NEFT)** is a nation-wide payment system facilitating one-to-one funds transfer. NEFT is an electronic fund transfer system that operates on a Deferred Net Settlement (DNS) basis which settles transactions in batches.

• Under this transfer, 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 transfer. However, **NEFT has no limit - either minimum or maximum - on the amount of funds transferred**.

• In case of individuals who do not have a bank account can also deposit cash using NEFT. However, such cash remittances are restricted to a **maximum of Rs. 50,000 per transaction**.

• The NEFT system also facilitates one-way cross-border transfer of funds from India to Nepal and it is known as the Indo-Nepal Remittance Facility Scheme. However, the remittances are restricted to a **maximum**

of Rs. 50,000 per transaction in this type of scheme.

Processing or Service Charges for NEFT Transactions

The structure of charges that can be levied on the customer for NEFT is given below:

a) Inward transactions at destination bank branches (for credit to beneficiary accounts) – Free, no charges to be levied on beneficiaries

b) Outward transactions at originating bank branches – charges applicable for the remitter

For transactions up to Rs.10,000 – Rs.2.50 (+ Applicable GST)

For transactions above Rs.10,000 up to Rs.1 lakh – Rs.5 (+ Applicable GST)

For transactions above Rs.1 lakh and up to Rs.2 lakhs – Rs.15 (+ Applicable GST)

For transactions above Rs.2 lakhs – Rs.25 (+ Applicable GST)

List of codes used for various transactions and cheque clearing in banks

IFSC (Indian Financial System Code)

• IFSC or Indian Financial System Code is an alpha-numeric code that uniquely identifies a bank-branch participating in the NEFT system.

• This is an 11-digit code with the first 4 alpha characters representing the bank, the 5th character is 0 (zero) and the last 6 characters representing the branch.

• All the banks have also been advised to print the IFSC code of the branch on cheques issued by branches to their customers.

• IFSC is used by the NEFT system to identify the originating / destination banks / branches and also to route the messages appropriately to the concerned banks / branches.

MICR (Magnetic Ink Character Recognition)

• MICR (Magnetic Ink Character Recognition) is a technology used to verify the legitimacy or originality of paper documents, especially cheques.

• Special ink, which is sensitive to magnetic fields, is used in the printing of certain characters on the original documents.

• The MICR code is a 9-digit code, which is printed at the bottom of a cheque and in the right-hand side of the cheque number. A MICR code is unique to each bank

branch. Thus, a MICR code can be used to uniquely identify any bank branch. It also uniquely identifies a bank and a branch participating in an Electronic Clearing System (ECS).

MMID (Mobile Money Identifier) Code:

• Mobile Money Identifier is a 7-digit number, issued by banks.

• MMID is one of the inputs which when clubbed with mobile number facilitates fund transfer. Combination of Mobile no. & MMID is uniquely linked with an Account number and helps in identifying the beneficiary details.

• Different MMID's can be linked to same Mobile Number.

SWIFT (Society for Worldwide Interbank Financial Telecommunication) Code:

• A SWIFT code is an international bank code that identifies particular banks worldwide. It's also known as a Bank Identifier Code (BIC).

• Bank uses SWIFT codes to send money to overseas banks. A SWIFT code consists of 8 or 11 characters.

• The robustness of the message format design allowed huge scalability through which SWIFT gradually expanded to provide services to the following:

1. Banks
2. Brokerage Institutes and Trading Houses
3. Securities Dealers
4. Asset Management Companies
5. Clearing Houses
6. Depositories
7. Exchanges
8. Corporate Business Houses
9. Treasury Market Participants and Service Providers
10. Foreign Exchange and Money Brokers

For example: Bank's SWIFT code is "CSTAAU28". You'll need to give this code to anyone sending money to you from overseas. The code is made up of letters and numbers as follows:

✓ CSTA – Bank code (4 digits)

✓ AU – Location Code (2 digits)

✓ 28 – Country Code (2 digits)

NATIONAL PAYMENTS CORPORATION OF INDIA (NPCI) AND ITS PRODUCTS

➤ National Payments Corporation of India (NPCI) is an umbrella organization for all retail payments system in India, which aims to allow all Indian citizens to have unrestricted access to e-payment services.

➤ NPCI is a not-for-profit organisation registered under section 8 of the Companies Act 2013.

➤ It was set up in December 2008 with the guidance and support of the Reserve Bank of India (RBI) and Indian Banks' Association (IBA).

➤ The core objective was to consolidate and integrate the multiple systems with varying service levels into nation-wide uniform and standard business process for all retail payment systems.

➤ NPCI has ten core promoter banks namely, State Bank of India, Punjab National Bank, Canara Bank, Bank of Baroda, Union Bank of India, Bank of India, ICICI Bank, HDFC Bank, Citibank and HSBC.

➤ Its Headquarters is located in Mumbai, Maharashtra. MD & CEO of NPCI is Dilip Asbe.

Product and Services of NPCI

1) National Financial Switch (NFS)

➤ The National Financial Switch is the largest interconnected network of Automated Teller Machines (ATMs) in India. The primary headquarters is located at Mumbai.

➤ This system was developed by Institute of Development and Research in Banking Technology (IDRBT), Hyderabad in 2004. It is run by the National Payments Corporation of India (NPCI).

➤ The National Financial Switch enabled the interconnectivity between the bank's switches such that the transactions made at any ATM could be routed to the connected banks.

➤ The NPCI has allowed any bank offering the core banking services round the clock (24/7) with or without ATM can be a part of this National Financial Switch through a sponsor bank.

➤ The objective behind such a move is to enable the non-scheduled cooperative banks and other regional rural banks to access the wide network of ATMs in the country.

➤ Thereby, enabling the customers of such bank to access **banking services through any ATM of a connected bank.**

2) Immediate Payment Service (IMPS)

➤ IMPS is an **innovative real time inter-bank electronic funds transfer system in India.** Banks are allowed to set their own limit for IMPS.

➤ IMPS offers an inter-bank electronic fund transfer service **through mobile phones.** Unlike NEFT and RTGS, the service is available 24/7 throughout the year including bank holidays.

➤ This service is offered by National Payments Corporation of India (NPCI) that empowers customers to transfer money instantly through banks and RBI authorized **Prepaid Payment Instrument Issuers (PPI)** across India.

➤ **QSAM (Query Service on Aadhaar Mapper)** – This service helps user in knowing their Aadhaar Seeding status with their bank account.

➤ Both banked as well as un-banked customer can avail IMPS. However, unbanked customer can initiate IMPS transaction using the services of **Pre-Paid Payments Instrument issuer (PPI).**

3) Unified Payment 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.

➤ UPI is **built over Immediate Payment Service (IMPS)** for transferring funds. Per Transaction limit is **Rs. 1 Lakh.**

➤ It uses **Virtual Payment Address** (a unique ID provided by the bank), Account Number with IFSC Code, Mobile Number with MMID (Mobile Money Identifier), Aadhaar Number, or a one-time use Virtual ID.

4) National Automated Clearing House (NACH)

➤ **National Automated Clearing House (NACH)** is a centralised, web-based clearing service that can ease the work of banks, financial institutions, and the government and corporate by consolidating all regional **ECS systems into one**

national payment system, thereby removing any geographical barriers in efficient banking.

➤ Started by the National Payments Corporation of India (NPCI), NACH aims to **create a better option for facilitating clearing services** than the existing Electronic Clearing Service (ECS) system.

➤ The service is now active in all Indian banks with core banking facility. It **facilitates both ECS credit and ECS debit.**

5) *99# USSD

➤ A **USSD (Unstructured Supplementary Service Data)** based **mobile banking service** of NPCI was initially launched in November 2012.

➤ As USSD code connects to the **telecom operator's server,** it also connects to bank's server. The service had limited reach and only two TSPs were offering this service i.e. **MTNL & BSNL.**

➤ Understanding the importance of mobile banking in financial inclusion in general and of *99# in particular, various regulatory/trade bodies came together to ensure onboarding of all TSPs on ***99# (USSD 1.0).**

➤ With the wider ecosystem (11 TSPs), *99# was dedicated to the nation by Hon'ble Prime minister on 28th August 2014, as part of **Pradhan Mantri Jan Dhan Yojna.**

➤ *99# service has been launched to take the banking services to every common man across the country. Currently, this service is available in **10 regional languages** along with Hindi and English.

6) Aadhaar Enabled Payment System:

➤ AEPS is a payment service offered by the National payment Corporation of India (NPCI) to **banks using Aadhaar number and online UIDAI authentication** through their respective Business correspondent service centers.

➤ The customer to have a bank account linked to his / her Aadhaar number with a bank offering the AEPS service.

Issuer Identification Number (IIN):

➤ It identifies the bank to which the customer has mapped the Aadhaar number.

➤ Each bank would be issued a unique IIN for AEPS.

➤ This is a **six-digit number.**

➤ Limits for AEPS transactions:

- Rs 50,000 per day per a/c. Aachaar based accounts would be opened on the basis of simplified KYC guideline i.e. where
 - (a) Balance does not exceed Rs.50,000
 - (b) Annual turnover does not exceed Rs. 1,00,000.

Settlement agency and charges:

Clearing Corporation of India Ltd on behalf of NPCI.

Banking services in AEPS:

Cash withdrawal, Cash Deposit, Balance Enquiry, Fund Transfer.

7) Aadhaar Payment Bridge (APB) System

➤ The APB System sub-serves the goal of Financial Inclusion and provides an opportunity to the Government to **attempt financial re-engineering** of its subsidy management program.

➤ The implementation of APB System has also **lead to electrification** of a large number of retail payment transactions which were predominantly either in cash or cheque.

➤ Banks can get connect to NPCI either through NPCINet or Internet.

➤ Transaction routing on the **basis of IIN issued by NPCI.**

➤ APB System provides **Direct Corporate Access (DCA)** to Government Departments and Agencies. Provides online Dispute Management System (DMS).

8) Bharat Bill Payment System

➤ **Bharat Bill Payment System (BBPS)** is an integrated bill payment system in India **offering interoperable and accessible bill payment** service to customers through a network of agents of registered member as Agent Institutions (AI), enabling multiple payment modes, and providing instant confirmation of payment.

➤ BBPS aims to **make regular bill payments** for all utility services easy. That includes water, DTH and telecom.

➤ National Payments Corporation of India (NPCI) will function as the authorized **Bharat Bill Payment Central Unit (BBPCU).**

➤ BBPCU will be responsible for **setting business standards, rules, and procedures** for technical and business requirements for all participants.

9) RUPAY Card

➤ **RuPay** is an **Indian domestic card scheme** conceived and launched by

the National Payments Corporation of India (NPCI) on 26 March 2012.

- **Banks in India** are authorized to issue RuPay debit cards to their customers for use at ATMs, PoS terminals, and e-commerce websites.

- It has been incorporated as a **Section 25 company** under Companies Act 1955 and more recently under the Section 8 of the Companies Act 2013 and is aimed to operate for the benefit of all the member banks and their customers. Its headquarters is located in Mumbai, Maharashtra.

10) Cheque Truncation System (CTS)

- CTS is based on a **cheque truncation or online image-based cheque clearing system** where cheque images and Magnetic Ink Character Recognition (MICR) data are captured at the collecting bank branch and transmitted electronically.

- For faster clearing of cheques, **Cheque Truncation System (CTS)** or **Image-based Clearing System (ICS)**, was introduced in India.

- Truncation is the **process of stopping the flow of the physical cheque** issued by a drawer at some point by the presenting bank en-route to the paying bank branch.

- It is preferable to present instruments complying with **CTS-2010 standards** for clearing through CTS for faster realisation. Instruments not complying with CTS-2010 standards will continue be accepted but will be cleared at less frequent intervals i.e. once a week (every Monday).

11) BHIM (Bharat Interface for Money)

- BHIM (Bharat Interface for Money) is a mobile app developed by National Payments Corporation of India (NPCI), based on the Unified Payment Interface (UPI).

- It was launched by Prime Minister Narendra Modi, at Digi Dhan mela at Talkatora Stadium in New Delhi on 30 December 2015.

- The app supports all Indian banks which use that platform, which is built over the **Immediate Payment Service Infrastructure** and allows the user to instantly transfer money between bank accounts of any two parties. It can be used on all mobile devices.

- BHIM allow users to **send or receive money** to or from UPI payment addresses, or to non-UPI based accounts (by scanning a QR code with account number and IFSC code or MMID (Mobile Money Identifier) Code).

Transaction fees and limits

- At present, there is **no charge** for transactions from Rs.1 to Rs.1 lakh.

- Currently the fund transfer limit has been set to a **maximum of Rs.20,000 per transaction** and a maximum of Rs. 1,00,000 in a day and maximum number of transaction count of **20** in a day.

- BHIM app currently supports **13 languages** (including English), though there are 22 official languages of India (excluding English) under 8th Schedule of Constitution of India.

Other Important Product used in various sectors

Universal Account Number (UAN):

- The UAN is a **12-digit number** allotted to employee who is contributing to EPF will be generated for each of the PF member by EPFO. For example, 11122333444.

- The UAN will act as an **umbrella for the multiple Member Ids** allotted to an individual by different establishments and also remains same through the lifetime of an employee. **It does not change** with the change in jobs.

- The idea is to **link multiple Member Identification Numbers (Member Id) allotted to a single member** under single Universal Account Number.

International Securities Identification Number (ISIN):

- An International Securities Identification Number (ISIN) **uniquely identifies a security**. Its structure is defined in **ISO 6166**.

- The ISIN code is a **12-character alphanumeric code** that serves for uniform identification of a security through normalization of the assigned National Number, where one exists, at trading and settlement.

- **All internationally traded securities** issuers are urged to use the ISIN numbering scheme, which is now the accepted standard by virtually all countries. The **United States and Canada** primarily

use a similar scheme, known as a **CUSIP number**.

- ISIN codes have a total of 12 characters, consisting of both letters and numbers. These include the country in which the issuing company is headquartered (**first two digits**), along with a number specific to the security (**middle nine digits**), and a final character, which acts as a check. **An example of an ISIN number** for a US company's stock certificate could look like: US0004026250.

Permanent Retirement Account Number (PRAN):

- The **National Securities Depository Limited (NSDL)** is the Central Recordkeeping Agency (CRA) for NPS. Therefore, application for **PRAN is made on the NSDL portal**. Every subscriber is allotted a **unique 12-digit Permanent Retirement Benefit Number** for a lifetime and can accessible from any location in India.

- Two types of account in PRAN, **Tier I Account**: This is a non-withdrawable account meant for savings for retirement.

- **Tier II Accounts** This is simply a voluntary savings facility. The subscriber is free to withdraw savings from this account whenever subscriber wishes. No tax benefit is available on this account.

- It is **mandatory for all subscribers** to the NPS are required to have a PRAN.

Permanent Account Number (PAN):

- Permanent Account Number (PAN) is a code that acts as an **identification for individuals, families and corporates** (Indian and Foreign as well), especially those who pay Income Tax.

- It is a **unique, 10-character alpha-numeric identifier**, issued to all judicial entities identifiable under the **Indian Income Tax Act, 1961**.

- The Income Tax PAN code and its linked card are issued under **Section 139A of the Income Tax Act**. It is issued by the Indian Income Tax Department under the supervision of the **Central Board for Direct Taxes (CBDT)** and it also serves as an important proof of identification.

- An example of a PAN code number would be in the form of AAAPL1234C.

- The PAN structure is as follows: AAAPL1234C: The five (5) first characters

are letters, followed by four (4) numerals, and the last (10th) character is a letter.

Tax Deduction and Collection Account Number (TAN):

➤ In India, a Tax Deduction and Collection Account Number (TAN) is a **10 digit number** issued to persons who are required to deduct or collect tax on payments made by them under the **Indian Income Tax Act, 1961**. Each tax deductor is uniquely identified by a TAN.

➤ TAN is required to be quoted in **all TDS/TCS returns**, all TDS/TCS payment challans and all TDS/TCS certificates to be issued. TDS/TCS returns will not be accepted if TAN is not quoted and challans

for TDS/TCS payments will not be accepted by banks.

➤ Failure to apply for TAN or not quoting the same in the specified documents attracts a **penalty of Rs.10,000**.

➤ TAN structure is as follows: DELA99999B: First four characters are letters, next five are numerals, and last character is a letter.

➤ The **first three characters** represent the **city or state** where the TAN was issued.

➤ The **fourth character** represents first character of name of the deductor.

➤ And the next **5 characters** are **numeric**.

Legal Entity Identifier (LEI):

➤ The **Legal Entity Identifier (LEI)** code is conceived as a **key measure to improve the quality and accuracy of financial data** systems for better risk management post the Global Financial Crisis.

➤ LEI is a **20-digit unique code** to identify parties to financial transactions worldwide.

➤ These directions are issued under Section 21 and Section 35(A) of the **Banking Regulation Act, 1949**.

Quick Review

TERMS	Numbers/ Codes	Description
Society for Worldwide Interbank Financial	8 – 11 Alphabetic Code	Identifies particular banks worldwide and to send money to overseas banks.
Indian Financial System Code	11 – Alpha Numeric Code	Uniquely identifies a bank-branch participating in the NEFT system. 1 st Four Characters – Bank Name 5th character – 0 (zero) Last 6 characters – Bank Branch
Magnetic Ink Character Recognition	9 – Digit Code	Uniquely identifies a bank and a branch participating in an Electronic Clearing System
Mobile Money Identifier	7 – Digit Code	Uniquely linked with an Account number and helps in identifying the beneficiary details like in AEPS, APBS.
Universal Account Number	12 – Digit Code	Allotted to employee who is contributing to EPF will be generated for each of the PF member by EPFO
International Securities Identification Number	12 – Alpha Numeric Code	It serves for uniform identification of a security through normalization of the assigned National Number, where one exists, at trading and settlement.
Permanent Retirement Account Number	12 – Digit Code	Permanent Retirement Benefit Number for a lifetime and can accessible from any location in India.
Aadhaar	12 – Digit Code	Uniquely obtained information from residents of India, based on their biometric and demographic data. The data is collected by the Unique Identification Authority of India (UIDAI).
Permanent Account Number	10 – Alpha Numeric Code	It acts as an identification for individuals, families and corporates (Indian and Foreign as well), especially those who pay Income Tax.
Tax Collection Account Number	10 – Alpha Numeric Number	Issued to persons who are required to deduct or collect tax on payments made by them. Each tax deductor is uniquely identified by a TAN.
Legal Entity Identifier	20 digit alphanumeric code	Identifies distinct legal entities that engage in financial transactions.

EMV (Euro pay, Master Visa Standards)

The **EMV Integrated Circuit Card Specifications for Payment Systems** are global payment industry specifications that describe the requirements for interoperability between chip-based consumer payment applications and

acceptance terminals to enable payment. The specifications are managed by the organization EMV Co.

The **EMV standards** were started by a working group created in 1993 by the world's three mainstream payment organizations: **EUROPAY (EPI)**, **MasterCard (MCI)** and **Visa**. The name

EMV is derived from the first letter of each of these three organizations.

Now **EMVCo** is owned by American Express, ICN, MasterCard and Visa, who manages, maintains and enhances the Integrated Circuit Card (ICC) Specifications to ensure global interoperability of chip-based payment cards with acceptance

devices including point of sale terminals and ATMs.

The EMV specifications were written with the following objectives:

- The card and acceptance device **must communicate together** and indicate what applications the card and acceptance device have in common.

- The acceptance device can run common applications and ensure that minimum standards for risk control and security are applied for that common application. The **microprocessor-based payment card** provides worldwide acceptance and interoperability.

- The EMV specifications are based upon the common set of standards developed by the **International Organization for Standardization (ISO)** for integrated circuit (chip) cards and related acceptance devices.

- The current version of the EMV 1996 specifications (version 3.1.1), published in May 1998, defines requirements for the interaction of debit and credit card functions on a chip card and a terminal. The components in these specifications cover requirements for cards, applications, and terminals. A new release EMV2000 (EMV 4.2) is currently available.

- **In order to accelerate the deployment of EMV technology**, existing card schemes have implemented fraud liability shift. These rule changes "shift" liability for fraud that could have been prevented if EMV chip and/or PIN technology had been used, by both parties, to the issuing or acquiring party that had not invested in EMV chip and / or PIN equipment.

EMV supports two different types of data authentication:

Offline Data Authentication:

The **Offline Data Authentication** ensures that the ICC card is not counterfeited and that the data is not deteriorated or falsified. It is a process whereby the card is validated at the point of transaction using RSA public key technology to protect against counterfeit or skimming. The flow of the EMV transaction ensures to authenticate the card and the terminal in the process by means of verifications of the cryptograms. The keys used as part of certificates in the cards as well as the public keys on the terminals is in general 10 years and there are multiple keys active and loaded in

terminals at any given point to support all the existing EMV cards in the market.

Online Data Authentication: The Online Data Authentication further ensures the card issuer that the card used in the transaction is actually the card issued by the issuer.

EMV includes three forms of Offline Data Authentication:

- **Static Data Authentication (SDA)**

- **Dynamic Data Authentication (DDA)**

- **Combined DDA/AC Generation (CDA)**

Note: RSA (Rivest, Shamir and Adleman - the inventors of the RSA cryptosystem) public key technology.

Static Data Authentication (SDA):

- SDA is a type of Offline Data Authentication whereby the terminal validates a cryptographic value placed on the card during personalization of the card. This validation protects against some types of counterfeit, but does not protect against copying and replaying attack.

Dynamic Data Authentication (DDA):

- DDA is a type of Offline Data Authentication where the card generates a digital signature using transaction-specific dynamic data elements, for validation by the terminal to protect against skimming.

Combined DDA/Application Cryptogram Generation (CDA):

- CDA is a type of Offline Dynamic Data Authentication, combined with processing of the transaction application cryptogram.

Strengthening the plastic and introducing Second Factor Authentication:

RBI has mandated that banks may issue new debit and credit cards only for domestic usage unless international use is specifically sought by the customer. Such cards enabling international usage will have to be essentially EMV Chip and Pin enabled. The banks have also been instructed to convert all existing Mag-stripe cards to EMV Chip card for all customers who have used their cards internationally at least once (for/through e-commerce/ATM/POS).

Based on detailed evaluation of various options on parameters like customer impact, issuer impact, acquirer impact, merchant impact, global interoperability and

residual risks, the following three solutions sets emerge:

1. Magnetic Stripe Card and PIN

2. Magnetic Stripe Card and Biometric (Aadhaar finger print)

3. EMV Chip Card and PIN

1. Magnetic Stripe Card and PIN

Over 99% of the credit and debit cards issued in the country are Magnetic Stripe Cards. Currently, PIN is required only for ATM transactions and not for POS transactions. PIN protects against lost and stolen card fraud.

PIN is prompted on the POS terminal based on the following:

- Service code that is coded in the magnetic stripe of the card at the time of issuing the card or

- BIN (Bank Identification number - first 6 digits of the card number) that is updated on the POS terminal or

- Combination of both service code and BIN.

If Magnetic Stripe Card and PIN is to be mandated for all POS transactions, then:

- Terminals will have to be modified to read the full service code on the card and prompt for PIN

- If the service code on the card does not support PIN prompt, then terminals will have to be updated BINs of all the issuing banks in India. This has to be done by updating the application software loaded on the POS terminal.

- Magnetic Stripe Card and PIN fulfils the short-term objective (next 2/3 years) of protecting against lost and stolen card frauds.

- Securing the payment infrastructure is critical prior to the roll out of this option. The effort involved in changing the ecosystem is estimated to be 12-18 months for a complete roll out. MSD+PIN could be a short-term solution till such time the industry migrates to a well-established long term solution.

2. EMV Chip Card and PIN

- EMV Chip Card protects against counterfeit (skimming) card fraud. EMV Chip Card and PIN protects against both counterfeit (skimming) and lost & stolen card fraud.

- Currently, only few large issuing banks like Citibank, ICICI Bank, HDFC Bank and SBI are issuing EMV chip cards. Most of

other banks' host systems are not ready and are not certified for issuance of chip card. Changes are required on the authorization switch, issuing host, and card embossing platforms.

> Banks who are currently issuing EMV Chip cards are issuing as Chip and Signature. None of the issuing banks have started issuing Chip and Pin Cards. Hence, all banks need to make necessary technology changes and get themselves certified to issue Chip and PIN cards.

> Based on international experience, EMV Chip Card and PIN migration typically takes 5 years. However, the migration timelines depend on the market size.

3. Magnetic Stripe and Biometric (Aadhaar finger print) Authentication

> Magnetic Stripe Card and Biometric (Aadhaar finger print) protect against both domestic counterfeit (skimming) and lost & stolen card fraud.

> Biometric (finger print) captured by UDAI can be used as authentication for protection against both domestic counterfeit and lost & stolen card fraud as the cardholder has to be physically be present at the POS terminal/ATM to authenticate the transaction. Even if the card is counterfeited, the fraudster will not be able to use the card as biometric of the customer would be required.

> Aadhaar authentication using biometrics provides a strong "Who you are" factor of authentication. This can be combined with a second "What you have" or "What you know" factor to achieve strong customer identification at the point of sale.

> At few merchant categories like fuel stations and restaurants, there are execution challenges in adopting PIN or biometric as additional factor of authentication.

> Of all the available options that provides worldwide acceptance but the major disadvantage is in terms of cost of the card and need of reissuance due to short validity of the cards which comes to every 5 years (which is currently 7 to 10 years for debit cards).

Difference Between Magnetic Stripe & PIN, EMV Chip Card & PIN and Magnetic Stripe & Biometric (Aadhaar finger print).

Magnetic Stripe & PIN	EMV Chip Card & PIN	Magnetic Stripe & Biometric (Aa
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(Static PIN, Dynamic PIN, Software Token, Hardware Token)	dhaar finger print)	
Pros:	Pros:	Pros:
1. PIN protects customers against lost or stolen card fraud	1. EMV Chip Card protects customers against counterfeit fraud. 2. EMV Chip Card & PIN protects against both counterfeit and lost or stolen card fraud.	1. Protects against both counterfeit and lost or stolen card fraud.
Cons:	Cons:	Cons:
1. Does not address counterfeit fraud. 2. Migration of fraud to ATM if the same PIN is used for POS & ATM. 3. Dynamic PIN: Quite cumbersome for POS transactions.	1. Magnetic Stripe data of EMV Chip cards can be counterfeited and misused in non-EMV countries. 2. Does not address international counterfeit card fraud and lost or stolen card fraud.	1. Scalability, stability, & adaptability of biometric (Aadhaar finger print) for payment authentication is currently untested. 2. Does not address international counterfeit card fraud and lost or stolen card fraud.
Approximate Cost Estimate is: X	Approximate Cost Estimate is: 34X	Approximate Cost Estimate: 3X* * Aadhaar roll for authentication very nascent. Best effort

estimate based on data and inputs currently available

INTERNET BANKING

Online banking, also known as internet 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.** The online banking system will typically connect to or be part of the core banking system operated by a bank and is in contrast to branch banking which was the traditional way customers accessed banking services.

To access a financial institution's online banking facility, a customer with internet access will need to register with the institution for the service and set up a password and other credentials for customer verification.

The PIN/TAN system where the **PIN represents a password**, used for the login and TANS representing **one-time passwords to authenticate transactions.** TANS can be distributed in different ways, the most popular one is to send a list of TANS to the online banking user by postal letter. Another way of using TANS is to generate them by need using a security token. These token generated TANS depend on the time and a unique secret, stored in the security token (two-factor authentication or 2FA).

All the systems **supporting dial up services through modem on the same LAN** as the application server should be isolated to prevent intrusions into the network as this may bypass the proxy server.

PKI (Public Key Infrastructure) is the most favoured technology for secure Internet banking services. However, as it is not yet commonly available, banks should use the following alternative system during the transition, until the PKI is put in place: Usage of **SSL (Secured Socket Layer)**, which ensures server authentication and use of client-side certificates issued by the banks themselves using a Certificate Server.

The use of at least **128-bit SSL** for securing browser to web server communications and, in addition, encryption of sensitive data like passwords in transit within the enterprise itself.

It is also recommended that all unnecessary services on the application server such as **FTP** (File Transfer Protocol), **telnet** should be disabled. The application server should be isolated from the e-mail server.

The common online services offered by banks are:

- **Transactional activities** like funds transfer, bill pay, loan applications and transactions.
- **Non-transactional activities** like request for cheque book, stop payment, online statements, updating your contact information.

Advantages

There are some advantages to using e-banking both for banks and customers:

- **Permanent access to the bank**
- **Access anywhere using mobile or computer**
- **Less time consuming** and we need not to go directly to the bank.
- **Very safe and secure method**
- **Helps to transfer the money immediately and accurately**
- **Easy to use**

Disadvantages

It also has some disadvantages which must be taken care of. The disadvantages of online banking include the following:

- Understanding the usage of **internet banking might be difficult** for a beginner at the first go. Though there are some sites which offer a demo on how to access online accounts, but not all banks offer this facility. So, a person who is new, might face some difficulty.
- You cannot have access to online banking if you **don't have an internet connection**; thus without the availability of internet access, it may not be useful.
- **Security of transactions** is a big issue. Your account information might get hacked by unauthorized people over the internet.

➤ **Password security** is a must. After receiving your password, do change it and memorize it otherwise your account may be misused by someone who gets to know your password inadvertently.

➤ You cannot use it, in case, the **bank's server is down**.

➤ Another issue is that sometimes it **becomes difficult to note whether your transaction was successful or not**. It may be due to the loss of net connectivity in between, or due to a slow connection, or the bank's server is down.

Digital marketing

Digital marketing is the **marketing of products or services** using digital technologies, mainly on the Internet, but also including mobile phones, display advertising, and any other digital medium.

Digital marketing methods such as Search Engine Optimization (SEO), Search Engine Marketing (SEM), content marketing, influencer marketing, content automation, campaign marketing, data-driven marketing, e-commerce marketing, social media marketing, social media optimization, e-mail direct marketing, display advertising, e-books, and optical disks and games are becoming more common in our advancing technology.

In fact, digital marketing now extends to **non-Internet channels that provide digital media**, such as mobile phones (SMS and MMS), call back, and on-hold mobile ring tones. In essence, this extension to non-Internet channels helps to differentiate digital marketing from online marketing, another catch-all term for the marketing methods mentioned above, which strictly occur online.

Search Engine Optimization (SEO):

It is the process of affecting the **online visibility of a website or a web page** in a web search engine's unpaid results—often referred to as "natural", "organic", or "earned" results. In general, the earlier (or higher ranked on the search results page), and more frequently a website appears in the search results list, the more visitors it will receive from the search engine's users; these visitors can then be converted into customers. SEO may target different kinds of search, including image search, video search, academic

search, news search, and industry-specific vertical search engines.

Search engine marketing (SEM):

It is a form of Internet marketing that involves the **promotion of websites by increasing their visibility in Search Engine Results Pages (SERPs)** primarily through paid advertising. SEM may incorporate Search Engine Optimization (SEO), which adjusts or rewrites website content and site architecture to achieve a higher ranking in search engine results pages to enhance **Pay Per Click (PPC)** listings.

Content Marketing:

Content marketing is a form of marketing focused on **creating, publishing, and distributing content** for a targeted audience online. It is often used by businesses in order to: Attract attention and generate leads.

A type of marketing that involves the **creation and sharing of online material** (such as videos, blogs, and social media posts) that does not explicitly promote a brand but is intended to stimulate interest in its products or services.

Influencer marketing:

Influencer marketing (also influence marketing) is a form of marketing in which **focus is placed on influential people rather than the target market as a whole**. It identifies the individuals that have influence over potential customers, and orients marketing activities around these influencers.

Influencer content **may be framed as testimonial advertising where they play the role of a potential buyer themselves**, or they may be **third parties**. These third parties exist either in the supply chain (retailers, manufacturers, etc.) or may be so-called value-added influencers (such as journalists, academics, industry analysts, professional advisers, and so on).

Content Automation:

Challenge of creating, publishing, and delivering content to such a diverse array of media channels is Content Automation.

Digital Marketing Strategies for Banks and Financial Service Providers:

To remain competitive for the modern consumer, banks need to set aside a larger budget for online initiatives such as digital ads, content marketing and search engine optimization. These are investments that will lead to new customers and an increase in brand recognition. Brands should understand that putting digital marketing to work does not guarantee an overnight fix. It requires a long-term strategy of building relationships with customers and integrating your company in the online world.

Here are 5 digital marketing strategies for banks and financial service providers.

Search Engine Optimization (SEO):

The goal of SEO is to be there when people are looking for you. Think for a moment about the products you sell—such as loans, checking/savings accounts and mortgages. Before customers make a purchase, they are spending their time researching options and learning more about the product. As a financial institution, your goal should be to be on the first page of Google search results when someone searches for banks in your city.

SEO also involves optimizing pages, such as using keywords in the meta description, the page title and the URL. Try and build quality backlinks to your page by promoting your content through social media.

Content Marketing:

When customers search online, they are looking for content. They want to find a brand that will answer their question and provide them with value. If you regularly produce articles on topics that customers appreciate, you will be able to generate more traffic from search and encourage people to engage with your site. Your content might include pieces such as tips for first-time homebuyers or an announcement about CD increases. Your content can also be used in other marketing and promotional materials, such as your social media sites and email newsletters. Use these sources to introduce people to your material and encourage them to further engage with you on the website.

Digital Advertising:

About 1/2 of all the ad dollars spent in the US are spent on Google. This is because it works. If you are not utilizing this valuable resource, you are missing out on potential customers. When you create an advertisement with traditional

advertising, you are forced to rely on the 'spray and pray' philosophy—hoping that it gets in front of the right people. When you advertise online, it is easier to target specific demographics and to personalize the message they see. You can collect data from your campaigns and use this information to optimize your advertisements and therefore get more for your money.

Email Newsletters:

You want to have multiple opportunities for people to opt in to your email list. When you set up new accounts, you can collect email addresses. You can also have forms on your website for people who find your content valuable and informative. Use these regular email newsletters to keep people engaged with your brand.

Make Your Website Usable and Mobile Friendly:

Financial institutions need to grow beyond old forms of advertising, such as TV or newspaper advertisements. Customers are online, and banks need to be there to engage them and build the relationships that lead to brand loyalty and growth. Those ready to take the plunge into modern advertising should reach out to me today to get started.

List of Various Apps Launched by Banks in India

Name of the Bank	App & Schemes launched
SBI	SBI Anywhere, YONO, State Bank Freedom, SBI No Queue, Boutique Financing Scheme, eForix, E-KYC, Composite Index, TAB banking Facility, Twitter Handle Account, Youth for India, State Bank Rewardz scheme, Bank.sbi (rebranded its corporate website from sbi.co.in), SBI Exclusif, Unnati Credit Card.
Bank of India	Instant Money Transfer (IMT)
UCO Bank	UCO Pay, UCO Suvidha Prepaid Card
Vijaya Bank	mPay
Central Bank of India	Cent Mobile
Dena Bank	Dena Mobile Banking App
Union Bank of India	U- Mobile, Union Selfie & m-Passbook, Union Sahyog
PNB	PNB mBanking, PNB MobileEase, Druk PNB Mobile
Punjab & Sindh Bank	PSB mPay
Syndicate Bank	Synd Mobile, Synd Saheli, Synd Bharata QR, Ananya Project
United Bank of India	United Mobile Banking, United Wallet, United e-Passbook
Allahabad Bank	All Mobile, eMPower
Oriental Bank of Commerce	OBC mPay, Oriental Saathi, Oriental Sahayak, Oriental Bhatua
Indian Bank	IndPay, Ind Mobi Easy, Bharat QR
Indian Overseas Bank	IOB Mobile, IOB Nanban
Canara Bank	Can Mobile, eInfoBook, Canara Swipe, Canara m Serve, Canara DIYA, m-wallet

Bank of Baroda	mConnect Plus, Baroda mClip, BarodaPedia
Andhra Bank	AB TEL, AB e-Vyapar, Andhra Bank Selfie Banking
Bank of Maharashtra	Maha Millionaire, Maha Lakhpati
RBI + NPCI	UPI, BBPS
GDI	BHIM
ICICI	POCKET, i-Mobile (for windows), Branch on Wheel, ICICI Aathon App, TAP and PAY, Digital Village Project in Akodara, Gujarat, EMI on Debit Card, India's First Transparent Credit Card, Student Travel Card, Saral Rural Housing Loan, Mera Immobile, Digital Form, InstaOD.
ICICI + Vodafone	m-Pesa
ICICI + GDI	e-NAM (electronic National Agriculture Market)
ICICI + True Caller	Truecaller Pay
RBL Bank	India's first credit card for golf lovers.
IDFC	IDFC Bank Mobile App
Axis Bank + Airtel	Airtel Money
HDFC Bank	Chiller, PayZapp, DDA Housing Scheme, Dhanchayat (Awareness Initiative), BBPS, Humanoid Robot IRA 2.0, Chatbot Eva, Aadhar Pay
Kotak Mahindra Bank	KeyPay (Facebook based fund Transfer Platform), Kotak Bharat, Voicebot Keya
Canara HSBC, Oriental Bank of Commerce Life Insurance	Iselect
Laxmi Vilas Bank	LVB Mobile App, FINFIT
Axis Bank	Lime App, Asha Home Loan, Kisan Card, Shubh Arambh Scheme
Yes Bank	Yes Bank, Yes MSME, Yes Corporate, Yes-GST
Bandhan Bank	mBandhan
South Indian Bank	SIB Mirror, SIB Mirror Plus
Industrial & Federal Bank	Video Conferencing
Citi Bank	Citi Bank Online, Voice Biometric Authentication
Fastag Service	Karur Vyasya bank
Paytm Payments Bank	'Paytm-Ka-ATM'
DCB Bank	DCB Remit

Payment protection insurance (PPI)

Payment Protection Insurance (PPI), also known as credit insurance, credit protection insurance, or loan repayment insurance, is an insurance product that **enables consumers to ensure repayment of credit** if the borrower dies, becomes ill or disabled, loses a job, or faces other circumstances that may prevent them from earning income to service the debt. It is not to be confused with income protection insurance, which is not specific to a debt but covers any income. PPI was widely sold by banks and other credit providers as an add-on to the loan or overdraft product.

Credit insurance can be purchased to **insure all kinds of consumer loans including car loans, loans from finance companies, and home mortgage borrowing.** Credit card agreements may include a form of PPI cover as standard. Policies are also available to cover specific categories of risk, e.g. credit life insurance,

credit disability insurance, and credit accident insurance.

PPI premiums may be charged on a **monthly basis or the full PPI premium** may be added to the loan up-front to cover the cost of the policy. With this latter payment approach, known as a **"Single Premium Policy"**, the money borrowed from the provider to pay for the insurance policy incurs additional interest, typically at the same APR as is being charged for the original sum borrowed, further increasing the **effective total cost of the policy to the customer.**