

# MODULE 4

# BANKING TECHNOLOGY

## **OUTLINE:**

- Concept of Universal Banking
- Home Banking
- ATM's
- Internet Banking
- Mobile Banking
- Core Banking solutions
- Debit, Credit and Smart cards
- Electronic payment systems
- MICR
- Cheque Truncation
- ECS
- EFT
- NEFT
- RTGS

## Banking on technology: India's banking in

- Banks today have become synonymous with technology. Banks have leveraged IT in all areas of governance, operations, and risk control. Banks have put in place fairly robust 'IT Strategy' to support the vision and business objectives.
- E Commerce the propelling force of E Banking
- E Banking Means conduct of Banking Electronically
- Today banks have to focus on two major aspects – customer satisfaction and driving business optimization
- Mobile banking is starting to gain traction. Approximately 55 million customers registered.

## CONCEPT OF UNIVERSAL BANKING

- A universal bank participates in many kinds of banking activities and is both a commercial bank and an investment bank.
- Universal banking is a multi purpose and multi functional financial supermarket providing both financial and banking services through a single window.

## MEANING OF UNIVERSAL BANKING

- A universal banking is a superstore for financial products under one roof. One can get loans, avail other handy services while can borrow deposit. It includes not only the services related to the savings and loans but also investment

## ADVANTAGES OF UNIVERSAL BANKING

- Economies of scale
- Profitable diversion
- Resource utilization
- Easy marketing on the foundation of a brand
- One-stop shopping
- Investor friendly activities

# Advantages of Universal Banking

- 1. It saves many transaction costs and increases the speed of economic activity.
- 2. Universal Banking is emerging as the global players in the financial services industry.
- 3. It helps in earning revenue with less cost.
- 4. It helps in earning non-fund income from business sourced in the bank's core business.
- 5. There are less Govt. Regulatory restrictions in Universal Banking.
- 6. It helps in reducing the corporate financing costs of the banks.
- 7. It helps in expanding the client base of the bank.
- 8. Universal Banking helps in reaching the remotest clients.
- 9. It provides an opportunity to exploitation of technology in banking.
- 10. Universal Banking helps in acquiring expertise in the diversified financial services in all financial services.
- 11. It helps in using the instrument in one activity to exploit the other.
- 12. Universal Banking helps in gearing up the marketing/selling at a lesser cost due to the concept of all financial services under one roof.

## DISADVANTAGES OF UNIVERSAL BANK

- Grey area of universal bank
- No expertise in long term lending
- NPA problem remained intact



## INTERNET BANKING

- Internet Banking services is an additional delivery channel just like telebanking, ATM with internet as the medium of operation.
- The major advantage of Internet Banking is that the user can utilize the services from anywhere at any time.
- It simply requires a computer and an internet connection.
- The user connects to the website through internet and logs in to the services by using valid corporate ID and password.

## Functions that can be performed through Online

- Checking account Balance
- Making account enquiry
- Requesting a cheque book
- Transferring funds
- Opening deposit accounts
- Making a stop payment request
- Payment of utility bills

## ADVANTAGES OF INTERNET BANKING

- Convenience banking
- Available anywhere/anytime
- Low cost, unlimited access
- Better customer/ better relationship
- Wider reach to public, competitive reach to banks, enhance image of banks as technology driven bank
- An effective marketing tool for promotion of various schemes of bank

## How secure is internet banking?

- Complies with RBI Guidelines for Internet Banking
- Information security policy for internet banking is framed and implemented by all banks
- Secure flow of information through the host system with security features like firewalls, content filtering, intrusion detection systems.
- Periodical audit of information security by qualified independent auditors
- Application software has a inbuilt security feature

## Distinctive features of online banking over traditional

- Round the clock transaction
- No personal visit to the branch required
- Anywhere banking due to online banking
- Reduced cost of banking transaction
- Quick and effective customer service
- Staff required gets reduced for servicing the customer
- Faster decision making possible
- Paves way for catering to the fast growing e commerce
- Increases the customers convenience in the present scenario  
traffic and pollution

## MOBILE BANKING

- **Mobile banking** refers to the use of a smartphone or other cellular device to perform online **banking** tasks while away from your home computer, such as monitoring account balances, transferring funds between accounts, bill payment and locating an ATM.



## MOBILE BANKING

- ❑ Axis Bank was the first Indian Bank to introduce innovative services like 'Swipeon' –
- ❑ a mobile phone based card acceptance service that can convert any mobile phone into a card acceptance device by simply attaching the Mswipe card reader to the phone,
- ❑ 'Instant Money Transfer (IMT)', a new and innovative remittance service that enables customers of Axis Bank to make instant payments to a receiver anywhere in India through mobile phones and withdraw the amount at any Axis Bank ATM without a card.

## CORE BANKING SOLUTIONS

- Centralized banking solutions
- The customer can transact in any branch of the bank across the country
- It is a process that is conducted in a centralized environment
- This means all the information is stored at the central server of the bank which is connected to the branches through networking system
- This makes withdrawal or deposit of funds or transaction of business anywhere in the country from a branch connected under CBS possible



## Core Banking

- Core Banking Solution (CBS) is networking branches, which enables Customers to operate accounts, and avail banking services from any branch of the Bank on CBS network, regardless where he maintains his account. The customer becomes more the customer of a Branch. He becomes Bank's Customer. Thus CBS is a step towards enhancing customer convenience through Anywhere and Anytime Banking.

## Core Banking

- It has centralized branch computerization model where the branches are connected to a central database which incorporates branch automation model and online multiple delivery channels like, ATM, Debit card, Telebanking, Mobile banking and internet banking under one roof.
- In core banking, there is a central database for all bank and transactions are done centrally, only

## Benefits

- Enables establishment of a reliable centralized data repository bank
- Facilitates data warehousing data mining technologies
- Easy implementation of customer centric services like ATM cards etc
- Enables Centralised MIS and DSS
- Enables centralized management and control
- Standardization of Branch automation and quick adoption of technology
- Facilitates business process re engineering to streamline the processes
- Relieves bank branches of the tasks like data back up etc
- Servers are not mandatory at bank branches marginal cost of implementation for further banks
- Core infrastructure can be used for future expansion.

## Home banking

- The practice of conducting banking transactions from home rather than at branch locations. Home banking generally refers to either banking over the telephone or on the internet.
- The first experiments with internet banking were conducted in the early 1980s, but it did not become popular until the mid-1990s when home internet access became widespread. Today, a variety of internet banks exist, many of which maintain few, if any, physical branches.

# ATMs (Automated Teller Mach

- ATMs are primarily used for performing some of the banking functions such as withdrawal of cash or the deposit of cash/cheque, etc., by using an ATM c

# Conveniences Of ATM

To the customer

- • 24/7 access availability
- • Less time for transactions (less queue)
- • Privacy in transactions
- • Any branch/anywhere banking enabled
- • Acceptability of card across multiple bank ATMs  
foreign tourists can access Maestro/visa ATMs
- • Other services enabled in ATMs in addition to cash dispensing includes clearing cheques deposits balance enquiry, cheque book requisition, details of recent transactions.



# Conveniences Of ATM

## To the Bank

- • Cost of setting up ATMs is lower than setting up a branch
- • Migration of the routine transactions to the ATMs frees the bank staff for more productive work
- • ATMs serve as the crucial touch point for cross-selling of the bank's products
- • Enable the banks to display products on the ATMs and serves as a media for publicity for the bank
- • Less hassle in handling cash.

## DEBIT, CREDIT AND SMART CARDS

A **debit card** (also known as a bank 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 using a debit card.

A **credit card** is a small plastic card issued by a bank, building society, etc., allowing the holder to purchase goods or services on credit.





- A smart card is a device that incorporates an embedded integrated circuit (IC) that can be either a secure microcontroller or equivalent intelligence with internal memory or a memory chip.
- The card connects to a reader with direct physical contact or with a remote contactless radio frequency interface.

# DEBIT CARD

- Debit card holders can present the card to merchant sign sales slip and buy the goods services. The amount is automatically debited from the account of the cardholder. The issuance of the Debit card requires the customers to open an account with the bank.

# Credit Cards

- Credit Card is a card or mechanism which enables cardholders to purchase goods and services without making immediate payment.

## Types of Credit Cards

- **General-purpose credit cards** are cards that can be used to pay for just about anything, anywhere from clothing department stores to meals at restaurants as well as to get cash advances.
- American Express, Visa, MasterCard, Discover cards are examples

## Types of Credit Cards

### ■ *Based on mode of credit recovery*

- • Charge Card-A card that charges no interest but requires the user to pay his/her balance in full upon receipt of the statement, usually on a monthly basis. While it is similar to a credit card, the major benefit offered by a charge card is that it has much higher, often unlimited, spending limits.
- • Revolving credit card-A line of credit where the user pays a commitment fee and is then allowed to use the credit when they are needed. It is usually used for operational purposes, fluctuating each month depending on the customer's current cash flow needs.

## ■ *Based on status of credit card*

- • Standard Card- it is a generally issued credit
- • Business Card- (Executive cards) it is issued partnership firms, tax- consultants, for use by executives on their business trips.
- • Gold Card-a credit card issued by credit-card companies to favoured clients, entitling them unsecured overdrafts, some insurance cover, c



## ■ *Based on geographical validity*

- • Domestic card- Cards that are valid only within the country are called domestic cards
- • International Card- credit Cards that are valid internationally are called international cards

- ***Based on franchise/Tie-up***
- Proprietary card- A bank issues such cards under its own brands. E.g. SBI card CanCard of Canara
- • Master Card- this card is issued under the umbrella of “MasterCard International”
- • VISA Card – it is issued by any bank having tie-up with “VISA international”
- • Domestic Tie-up Card- it is issued by any bank having tie up with domestic credit card brands such as CanCard and IndCard.



## ■ *Based on issuer Category*

- • Individual Cards- Non-corporate cards that are issued to individuals
- • Corporate Cards- Issued to corporate and business firms.

# Debit Cards

- Debit card holders can present the card to merchant sign sales slip and buy the goods services. The amount is automatically debited from the account of the cardholder. The issuance of the Debit card requires the customers to open an account with the bank.

## Smart Card

- Integrated Circuit Card (ICC), a **smart card** is a small, compact sized device, with a microprocessor and other circuits embedded inside it. These devices are generally made up of synthetic materials and are used for a variety of purposes as enlisted below.
- They are used in **ATM** and **credit cards** and contain the Personal Identification Number (PIN) and the account details of the individual.
- They are used in SIMs, which need to be placed inside a mobile phone, and this is necessary to acquire the services of a service provider.

# SMART CARD

- They can be used as electronic wallets, and can be used in payment mode at many different sources.
- They can be used to pay for many public transportation services.
- They can be used for identification and time log purposes in business organizations.
- When a transaction is made using the card, the value is debited and the balance comes down automatically. When the monetary value comes down to nil, the balance is restored all over again for the card to become operational. This is highly secured and prevents card related fraud crimes.

## DIFFERENCES BETWEEN DEBIT CARD AND CREDIT CARD

BASIS	DEBIT CARD	CREDIT CARD
Nature	It is a pay now product	It is a pay later product
Mode of Operations	Money is automatically deducted from the account	Money has to be paid afterwards
Requirement of the Bank Account for the holder	Bank account for the cardholder is compulsory	Bank account for the cardholder is optional
Types of financing	Owned money	Consumer loan
Basis of alternative	Alternative to the cheque or cash	No such alternative
Default chance for bankers	Default chance for banker are zero	Default chance for banker are sustainable
Recovery cost for bankers	Recovery cost of banker are zero	Recovery cost of banker are sustainable
Cost incurred by the customer	Cost incurred by customer is zero	2-3% of interest if not paid in time

## ELECTRONIC PAYMENTS SYSTEM

- Electronic Payment is a financial exchange that takes place online between buyers and sellers. The content of this exchange is usually some form of digital financial instrument (such as encrypted credit card numbers, electronic Cheques or digital cash) that is backed by a bank or an intermediary, or by a legal tender.
- Electronic payment system is a system which helps the customer or user to make online payment for their shopping.



# IFSC Code

- IFSC Code Means Indian Financial System Code. IFSC Code is used as the address code in one user to another user. RTGS payment system of RBI use these codes. IFSC code consists of 11 characters identified as under (Example of Madhapur, Hyderabad)
  - First Four Digits show identity of the Bank i.e SBIN
  - 5<sup>th</sup> Digit in default as zero ( for future Use) i.e. 0
  - Last 6 characters display the branch identity i.e. 004187
  - So IFSC Code for SBI, Madhapur, Hyderabad is SBIN0004187
- IFSC is excellent unique code for international electronic payment system**

## MICR

- Means **magnetic Ink character recognition** code which consists of 9 digits appearing at the bottom of the cheque, following the MICR line. Each bank branch has a unique MICR Code. To understand how the MICR works let's take the example of 9 digits MICR code of SBI Madhpur, Hyderabad – 500081 which has a MICR code 500081002-072.
- First three digits of the code display the city and is derived from the first three characters of the PIN which is 500
- Digits 4,5, and 6 display the bank codes allotted to each bank. In the case of SBI the code allotted is 002
- Digits 7,8 and 9 display the bank branch codes allotted to each branch of the Bank for example of SBI Madhpur Hyderabad branch has been allotted code no 72
- Therefore, 9 digits of MICR of SBI Madhpur, Hyderabad 500081 will be 500-002-072



## CHEQUE TRUNCATION

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

In its place an electronic image of the cheque is transmitted to the bank branch through the clearing house, along with relevant information such as MICR data on the MICR band, date of presentation, presenting bank, etc.

Cheque truncation thus obviates the need to move the physical cheques across bank branches, other than in exceptional circumstances for clearing purposes. This effectively eliminates the associated cost of movement of the physical cheques, reduces the time required for collection and brings elegance to the entire activity of cheque clearing.

- As explained above, Cheque Truncation speeds the process of collection of cheques resulting in better service to customers, reduces the scope of instruments in transit, lowers the cost of collection of cheques, and removes reconciliation-related logistics-related problems, thus benefitting the system as a whole.

## ECS ( ELECTRONIC CLEARING SYSTEM )

- Electronic mode of payment / receipt for 1 transactions that are repetitive and periodic i
- □ ECS is used by institutions for making bu payment of amounts towards distribution of dividend, interest, salary, pension, etc
- □ For bulk collection of amounts towards te / electricity / water dues, cess / tax collection installment repayments, periodic investments mutual funds, insurance premium etc

# Parties Involved

- Payee- one who is going to receive
- • Payer- one who is going to pay
- • Payee's bank
- • Payer's bank
- • Clearing House- Facilitates the interaction between two banks

# Types of ECS process

## Credit request

- • Example of a credit request:
- • Jivan Tyres Ltd. has to pay monthly salaries to its employees who have accounts across different banks
- • The initiator can be the paying bank, requesting a credit from the receiving bank

## Debit Request

- • Example of a Debit request
- • State Electricity board wants to receive monthly bill payment monthly from its customers
- • In this case the initiator of the process is the payee

## EFT

Electronic Funds Transfer(EFT) is a system where by who wants to make payment to another person or c etc..

Can approach his bank and make cash payment or give instructions /authorization to transfer funds directly own account to the bank account of the receiver or beneficiary.

Complete details such as the receiver's name, bank account number, account type, bank name, city branch name furnished to the bank at the time of requesting for s transfers so that the amount reaches the beneficiary correctly and faster.



## FEATURES OF EFT

- Quick movement of money.
- No intermediation of paper based system.
- Encryption key for protection and security

## **VARIOUS TYPES OF EFT's ARE AS FOLLOWS**

- Credit Transfer : Payment of interest, dividend, salary etc.
- Debit Transfer: Payment of bills upon receipt, interest of payee.
- Low value fund transfer
- High value fund transfer
- Automated teller machine
- Cheque Truncation

## RTGS

The acronym 'RTGS' stands for Real Time Gross Settlement. It can be defined as the continuous (real-time) settlement of funds transfer instructions individually on an order by order basis (without batching). '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). Consequently, that the funds settlement takes place in the books of the Bank of India, the payments are final and irrevocable.

- It is a real time funds facilitates you to transfer funds from one bank to another in real time or on a gross basis. The transaction isn't on a waiting list and cleared out instantly.
- ☐ RTGS payment gateway, maintained by the Reserve Bank of India, makes transactions between banks electronically. The transfer is instantly deducted from the account of one bank and credited to the other bank's account.
- ☐ The minimum value that can be transferred using RTGS is ₹1 Lakhs and above. However there is no upper cap on the amount that can be transacted.
- The remitting customer needs to add the beneficiary and his account details prior to transacting funds via RTGS. The details while transferring funds would be the beneficiary's name; his account number, receiver's bank address and the IFSC code of the respective bank.

## ADVANTAGES OF RTGS

- Certainty of payment
- Faster collection of funds
- No risk settlement
- Improved liquidity management
- Less fraud and less processing cost
- Better inventory management

## National Electronic Funds Transfer (NEFT)

The National Electronic Funds Transfer is a nation-wide transfer system which allows customers with the facility electronically transfer funds from their respective bank any other account of the same bank or of any other bank.

Funds transfer through NEFT requires a transferring destination bank.

Before transferring funds via NEFT you register the receiving funds. For this you must possess information name of the recipient, recipient's bank name, a valid account number belonging to the recipient and his respective bank code.

Any sum of money can be transferred using the NEFT with a maximum capital of Rs. 10, 00, 000.



## ■ Operating Details of NEFT

- Settlement of funds between receiving and paying bank place centrally from Mumbai.
- Bank branches participating with NEFT can be located anywhere in the country.
- Customer through an application form provides details required transfer.
- Customer operating through a net banking facility can also the fund transfer through their bank.
- Through the Indian Financial System Code (IFSC) the bank participant is identified and is used in the transfer of funds.

## Benefits of using NEFT

- No physical transfer of cheque or demand draft
- Possibility of loss of funds in transfer is not there
- Transaction cost is less when compared with payment methods
- Service is enabled through internet banking / e mobile and thus minimizes the effort of the transfer
- Real time transfer of funds

## BASIC DIFFERENCES BETWEEN NEFT AND RTGS

Criteria	NEFT	RTGS
Settlement	Done in batches (Slower)	Real time (Faster)
Full Form	National Electronic Fund Transfer	Real Time Gross Settlement
Timings on Mon – Fri	8:00 am – 6:30 pm	9:00 am – 4:30 pm
Timings on Saturday	8:00 am – 12:30 pm	9:00 am – 1:30 pm
Minimum amount of money transfer limit	No Minimum	2 lacs
Maximum amount of money transfer limit	No Limit	No Limit
When does the Credit Happen in beneficiary account	Happens in the hourly batch Between Banks	Real time between Banks
Maximum Charges as per RBI	Upto 10,000 – Rs. 2.5 from 10,001 – 1 lac – Rs. 5 from 1 – 2 lacs – Rs. 15 Above 2 lacs – Rs. 25	Rs. 25-30 (Upto 1 lac) Rs. 50-55 (Above 1 lac) (Lower charges for financial institutions)
Suitable for	Small Money Transfer	Large Money Transfer

# THANK YOU