

INTENSIVE STUDY COURSE ON  
INFORMATION TECHNOLOGY  
J B Nagar Study Circle

By

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## Session Take Away

- *Changing scenario in Banking*
- *Understanding CBS*
- *Changes vis a vis Challenges*
- *Professional Opportunities*

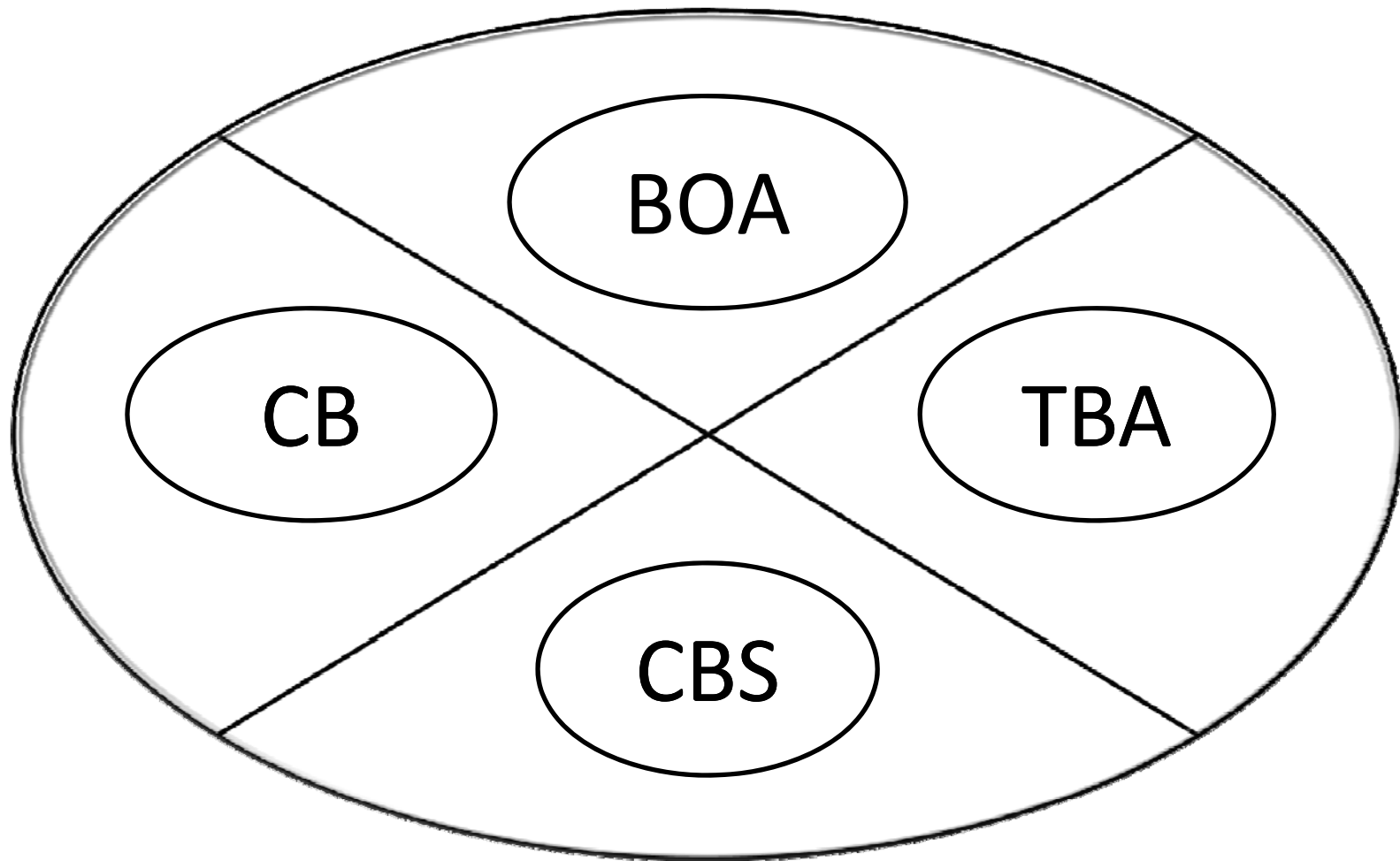
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- Personal view
- Diagrams and pictures are proprietary of respective company.
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- Not to be construed as professional advice.

# Evolution of Banking

- *Understand Bank and Banking*
- *Understand Banking Culture*
- *Understand branch Culture*

# Evolution of Banking



# Modern Banking & Challenges



# Audit Challenges

- RBIA
- Limitation of traditional Audit Approach.
- Any alternate to traditional Approach?
- Which Techniques / Technologies to be used?
- How to go Ahead

# CORE BANKING SOLUTION

- ***Core Banking Solution (CBS)*** is centralized Banking Application software containing several components which have been designed to meet the demands of the banking industry.



## CBS ..... continued

- The CBS software resides always resides in a central application server located in the data centre of the central office only (It is not available at the branch but can be accessed from the branches) and all the branches of the bank are connected to the Central Data Centre.

# Technology behind CBS

Every Transaction happens at Centralized Data Centre

- A strong secure Communication infrastructure
- Secure Network (Restricted Domain)
- Closed User Group
- Various Interfaces – Middleware
- 24X7 Connectivity

# Finacle

By Infosys Technologies Ltd.

BANCS 2000 (Core Banking System) came from a 1993

User - AB, BOB,DB, ICICI BANK, IDBI BANK, OBC, SIB, SBI, UCO, UBI, UNBI.

# Flexcube

Flexcube CBS by i-flex solutions limited (formerly known as Citicorp Information Technologies Industries Limited), since late 2005 is owned by Oracle (previously was controlled by Citigroup) and specializes in providing state-of-the-art information technology solutions to the Banking and Financial Services industry.

User - CB, Dhan. Bank, HDFC Bank, KVB, KMB, LVB, Lord Krishna Bank, Syndicate Bank, Yes Bank etc.

TCS B@NKS24

TCS Financial Solutions is a strategic business unit of Tata Consultancy Services.

Allahabad Bank, BOI BOM, CBS, CBI, IB , TMB.

# OMNI

OMNI Overview: Established in 1995, Infracsoft Technologies Limited (InfracsoftTech) is headquartered in Mumbai, India

DNSB, JSB, ABY, MNR, TJSB.

# Swiftcore

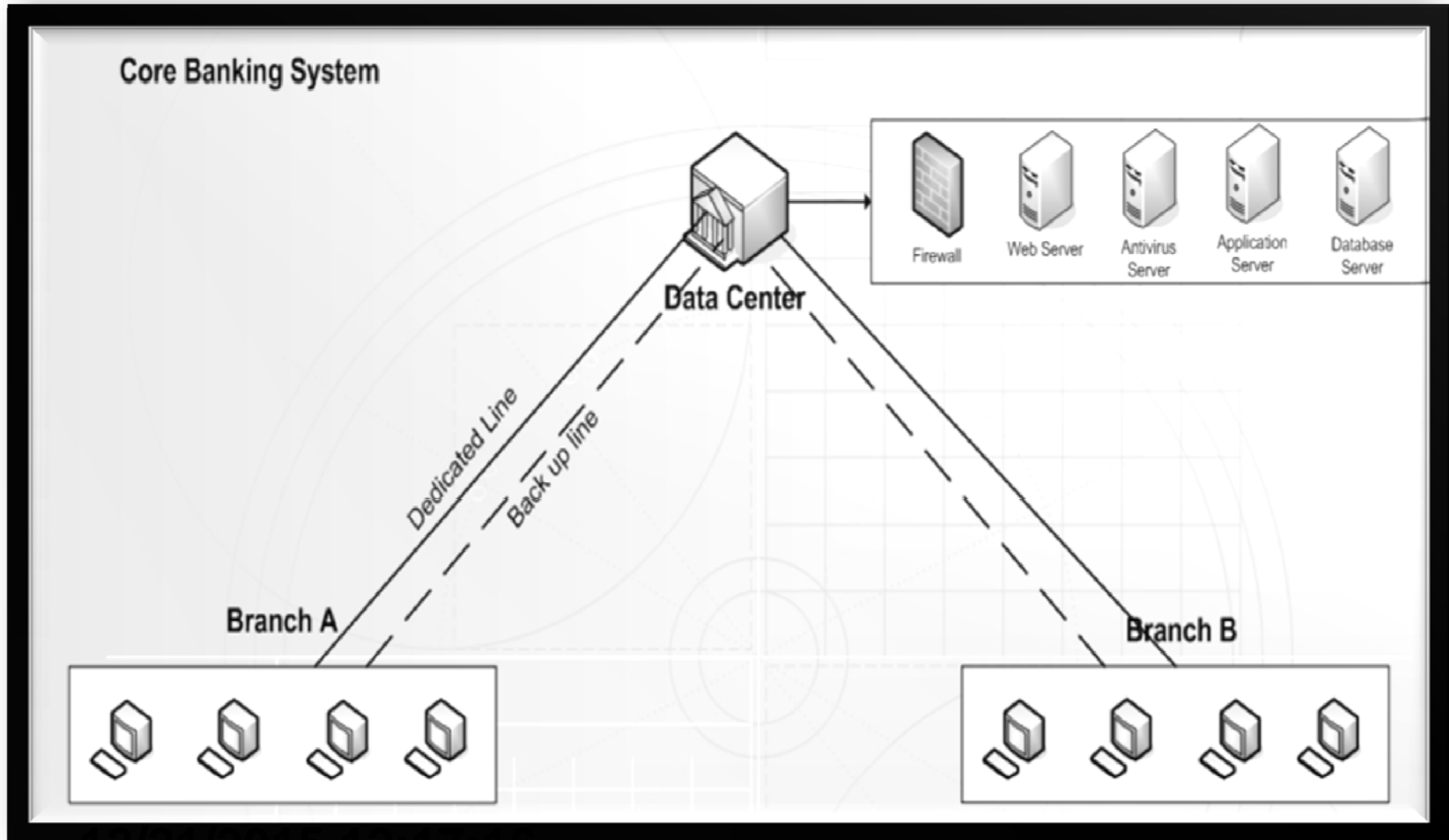
Saraswat Infotech Limited (SIL), a wholly owned subsidiary of Saraswat Bank.  
SCB, CMBR NGRK, NMCB,

## LASER PANACEA

Corporation Bank has been using COBOL based Core Banking Solution (CBS) since 2003. Developed by M/s Laser Soft Infosystems Ltd (Polaris Group Company).



# Data Centre and Network Connectivity



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PM

## How CBS works

### Master level Configuration –

Various User **Groups** are created in CBS e.g. General Users, System Operators, Database Administrators and Inspectors & Auditors based on the type of work handled by them. These users are provided with different **Access Rights and Privileges** in the CBS to discharge their respective functions effectively, without compromising the safety, security and internal control systems of the bank.

## How CBS works

### Accounts Level Configuration –

There are two types of accounts under CBS, viz.,  
Regular and Pointing Types.

Basic Accounts are regular accounts, where the  
transactions are recorded based on accounting logic.

Pointing accounts represent sundry or suspense  
accounts

## How CBS works

### Parameter Setting.

**Master level** parameter setting allows the parameters to be set that are applicable to all the accounts in the bank.

**Individual account level** parameter setting allows the parameters that are applicable to a particular account, e.g., moratorium period, application of interest, addition or deduction from interest rate based on risk perception, etc.

## How CBS works

Interest Calculation and Application – **Batch Process**  
Maker – Checker Concept (Different Stages for a  
Transaction)

**Created by, Entered by, Authorised by,  
Posted by, Modified by, Deleted by**

SOL ID & SET ID Concept

(SOL – Service OutLet ID i.e. Branch, Back  
Office etc.) (SET ID – Branch / Back Office who  
initiated the transaction)

Auto generation of Exception Reports at EOD

Generation of various Tailor-made Reports from Back-  
End / MIS Server

## Setting up of Batch Jobs

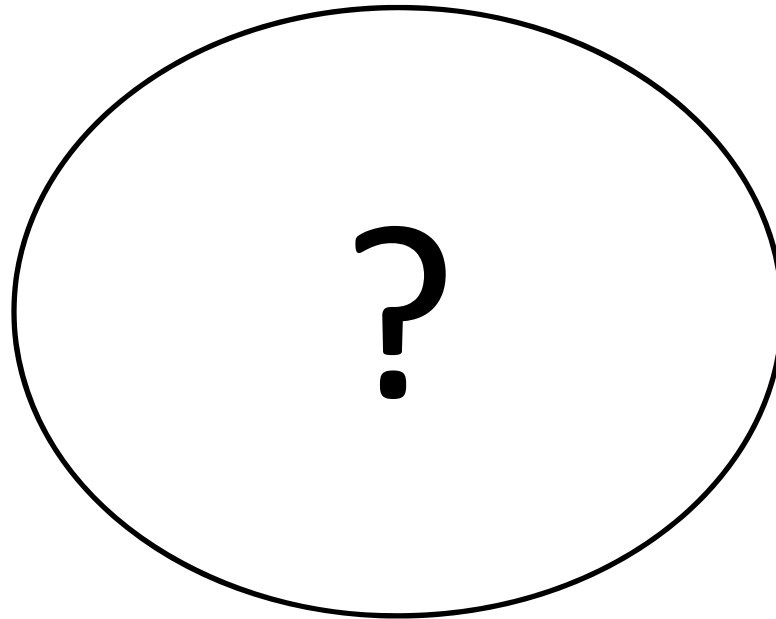
Automating certain tasks.

Generating reports.

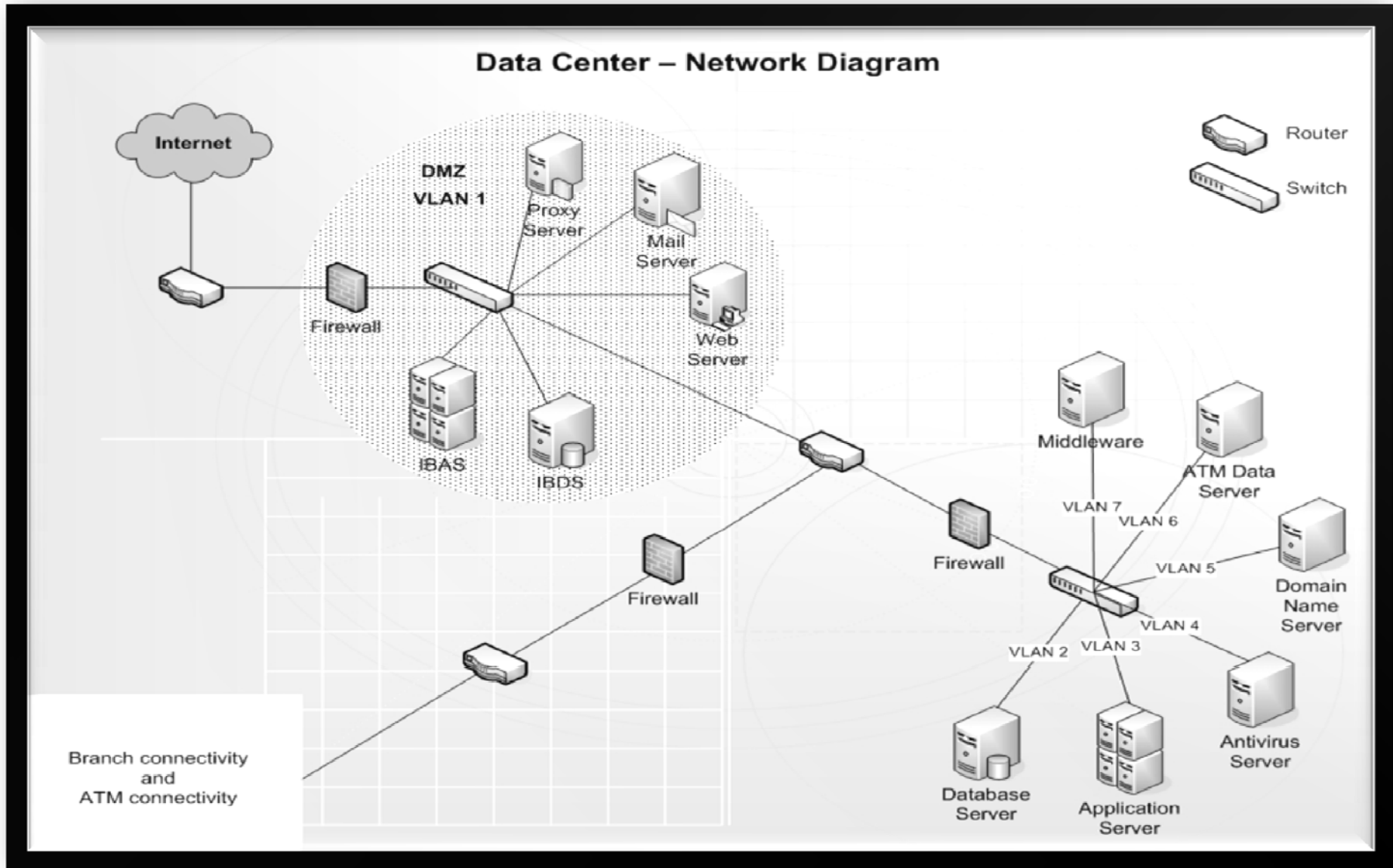
These batch jobs can be set-up during the various operations of the EOD/BOD.

Each of the batch jobs can also be scheduled to be executed at different frequencies of dates.

## Limitation - CBS

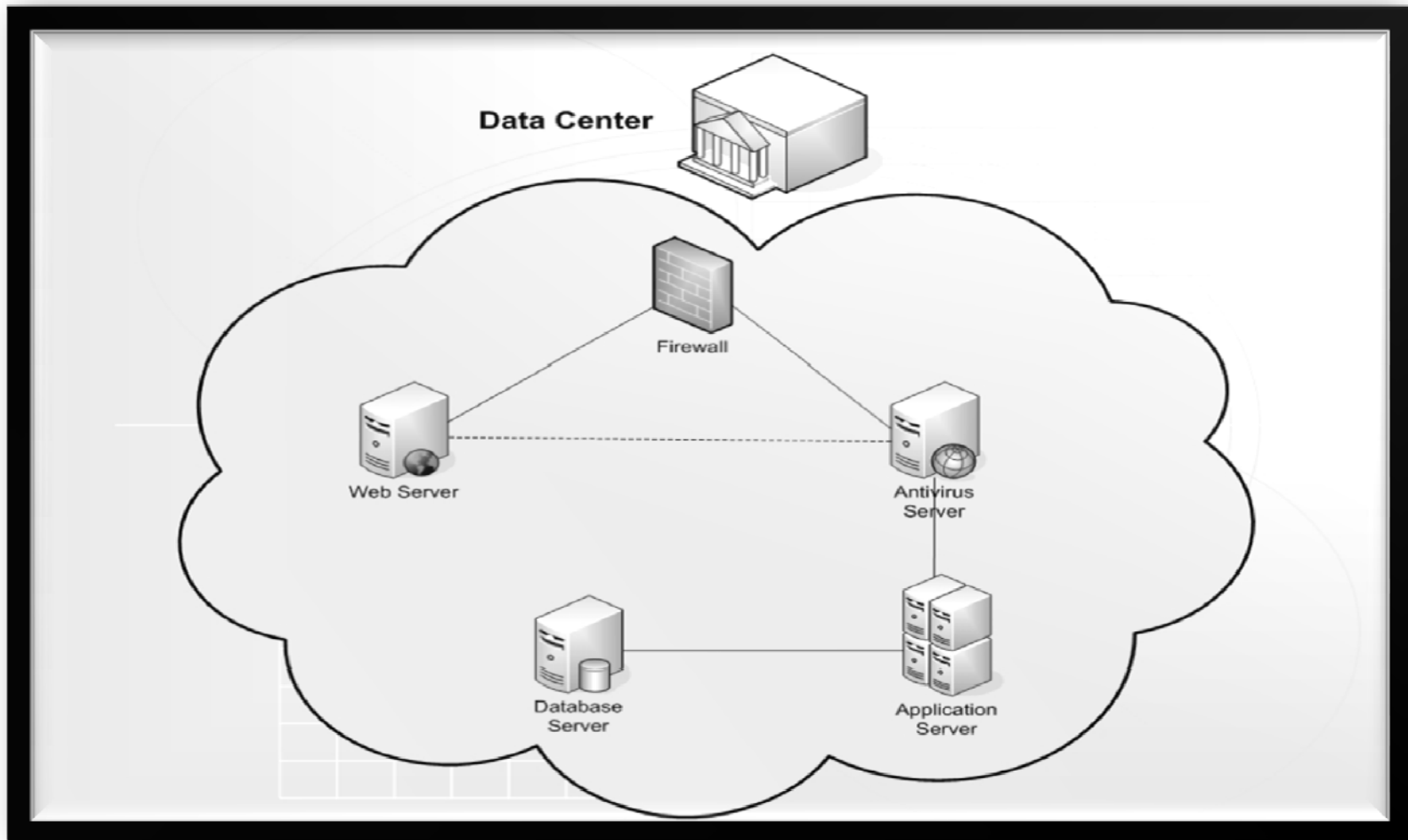


# Components of CBS

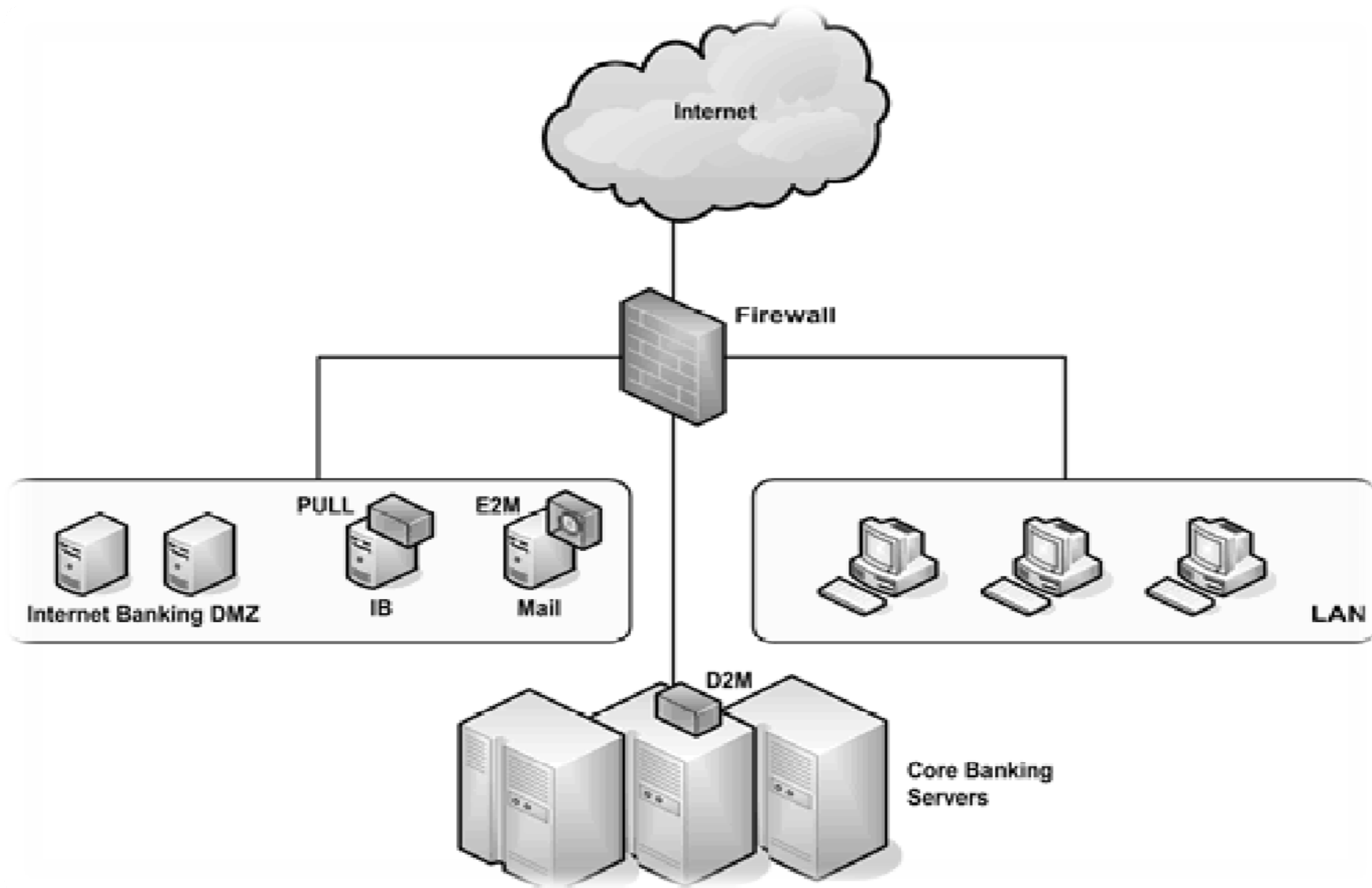




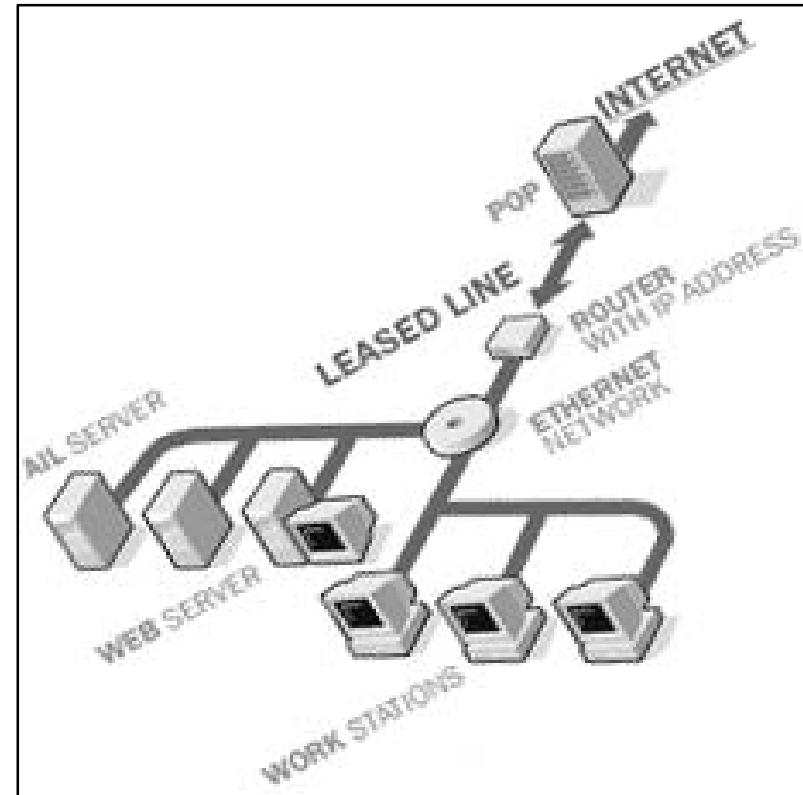
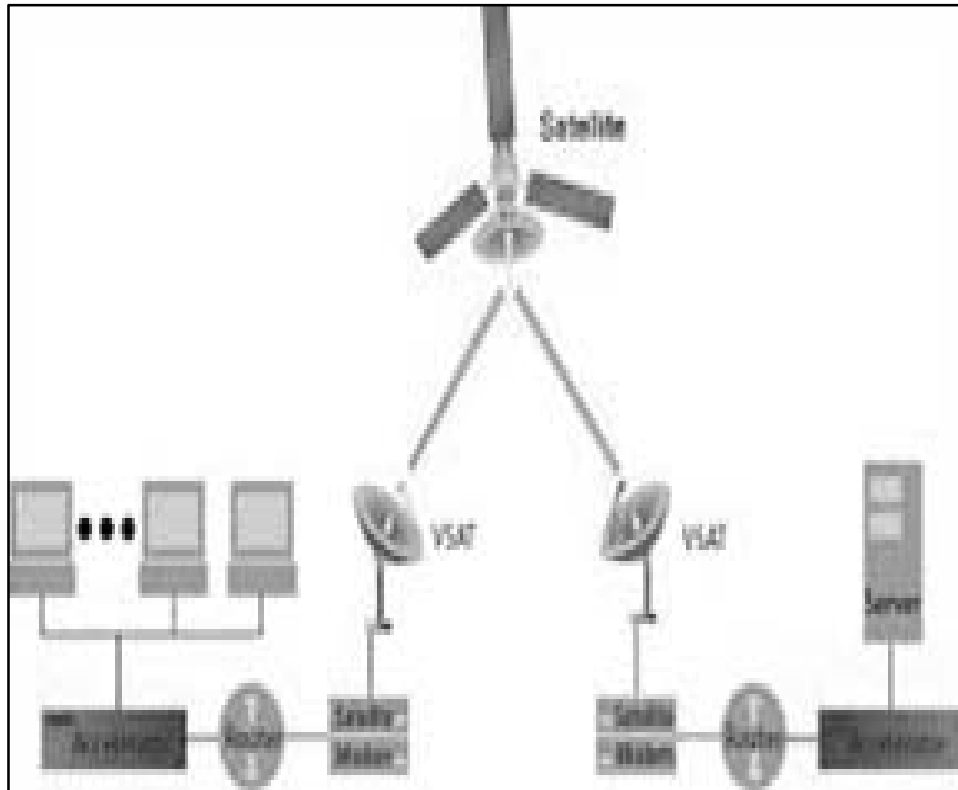
# Components of CBS – Data Centre



# Components of CBS- Network



# Components of CBS - Communication



# Operations of CBS Branch

- All branches are directly connected to Data Centre
- All transactions are happening at the servers in Data Centre
- No separate applications & servers are available at branches
- Branch users are created through centralized user creation process
- No password/ID should be shared with anyone at any circumstances
- All control parameters are created/ maintained centrally
- There are some limited application related controls which is controlled at Branch Level.

# Operations of CBS Branch

- **Access Control Procedures**
  - System prompt for change of password for first log in.
  - There should be a maximum number (usually 3) of failed log in attempts.
  - Procedure for reviving deactivated accounts
  - All USB ports, the CD-ROM drives should be disabled.

# Operations of CBS Branch

- Logical Access Controls:
  - Creation / Deletion / Amendment in User Profile, Powers done centrally. If not, verify the compliances as follows.
    - Records for User – ID Creation properly maintained?
    - Records for Deletion of user-ID with proper authorisation available?
    - Other issues like security of password, compulsory change of password, Transaction Limit for employees etc.

# Operations of CBS Branch

- **Server related procedures**
  - No servers available at the branch.
  - Local server to address slow connectivity issues - temporary storage.
  - Password of local server - under the control of the Branch Manager.

# Operations of CBS Branch

- **Physical and environmental controls**
  - Moisture and temperature control
  - No inflammable material in the server room.
  - There should be a fire extinguisher in the server room.



# Operations of CBS Branch

## Output Controls:

Whether Hard copies of Accounts available?

Whether such reports are signed?

# Operations of CBS Branch

## Backups

Important Activity for Non CBS Branches

Backup should be stored on Off-site Location

Backup should have been tested at periodical intervals

Backup Register should be maintained

# Operations of CBS Branch

## Security of Data:

Whether the encryption software is available in Server / Backup Server (If data is stored)

Whether the computers are having Antivirus Software?

Whether the AV Software is updated on regular basis?

# Operations of CBS Branch

- **Business Continuity Planning and Disaster Recovery Planning**
  - Properly Documented Disaster Recovery procedures + Business Continuity Planning.
  - Aware the employees with course action for Disaster Recovery Planning and Business Continuity Planning .
  - Periodic drills - proactive control.
  - Well documented alternate connectivity with the data centre in case of break down in the primary connectivity.

# **CBS INTERFACES**

## **Learning Objectives**

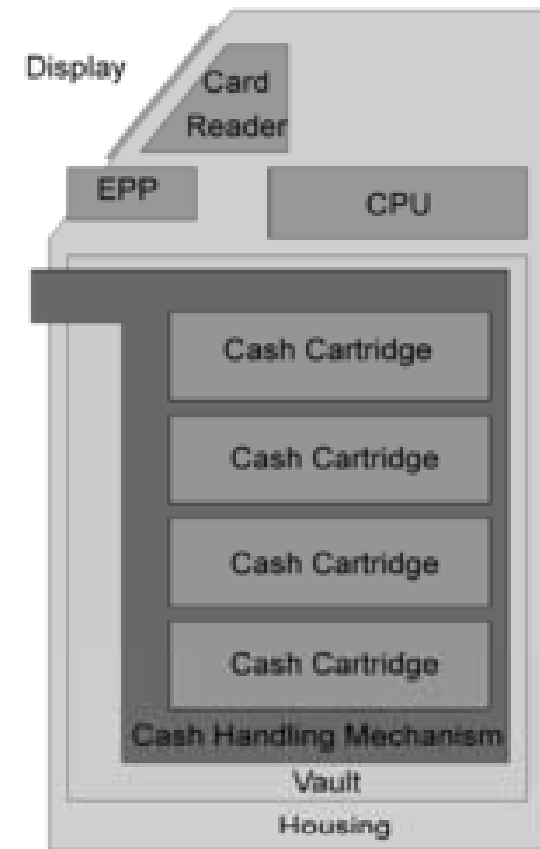
- Automated Teller Machine (ATM)
- Internet Banking / e-banking
- Real Time Gross Settlement (RTGS)
- Cash Management System (CMS)
- Paytm

# Automated Teller Machine

An ATM is a banking terminal that accepts, deposits and dispenses cash. *It's also known as automated banking machine (ABM), cash machine, cashpoint, cashline.*

- **Hardware of the ATM**

- CPU
- Magnetic or chip card reader
- Encrypting PIN pad
- Secure cryptoprocessor
- Display
- Function key buttons or a touchscreen
- Record printer (record of the transaction)
- Vault
- Housing Sensors and indicators



# PROCESS

Unique **Card Number**  
Allotted to the Customer



Card Number **encrypted**  
using **DES Algorithm**



Encrypted Card Number  
converted to **decimal form**



**Natural PIN arrived:** First 4  
digits of the decimalised  
encrypted card number



Randomly generated PIN  
allotted to customer



Offset value calculated



Offset value stored in ATM  
server



PIN mailer sent to  
customer

# ATM

*PIN generation  
process for  
new ATM  
cards*

# e.g.

6552 4562 5874 5525



█ □ □ █ █ █ □ □ █ █ █



11000001000111000001



1100



5644



5644-1100=4544



Offset value **4544** stored  
in ATM server

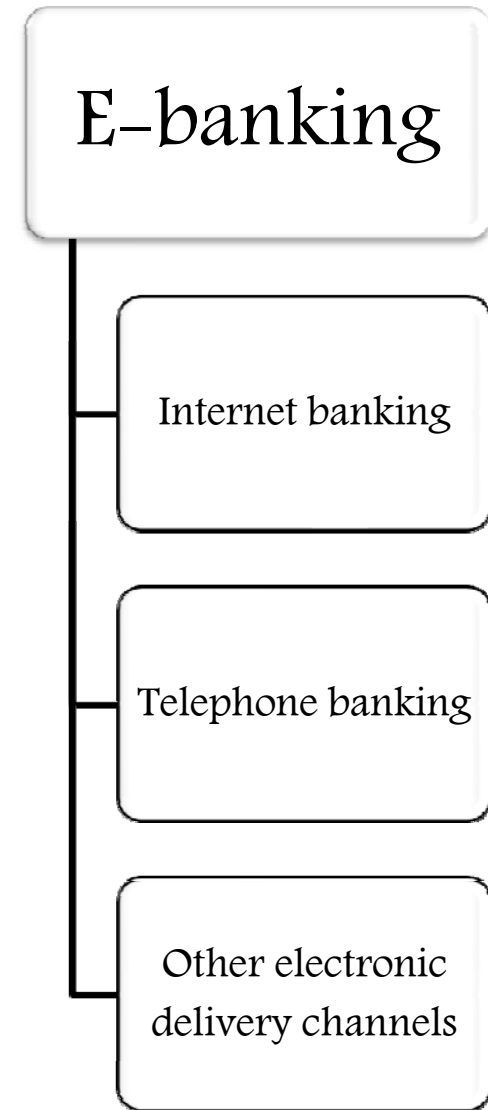


Random PIN **5644** sent  
to customer – PIN mailer

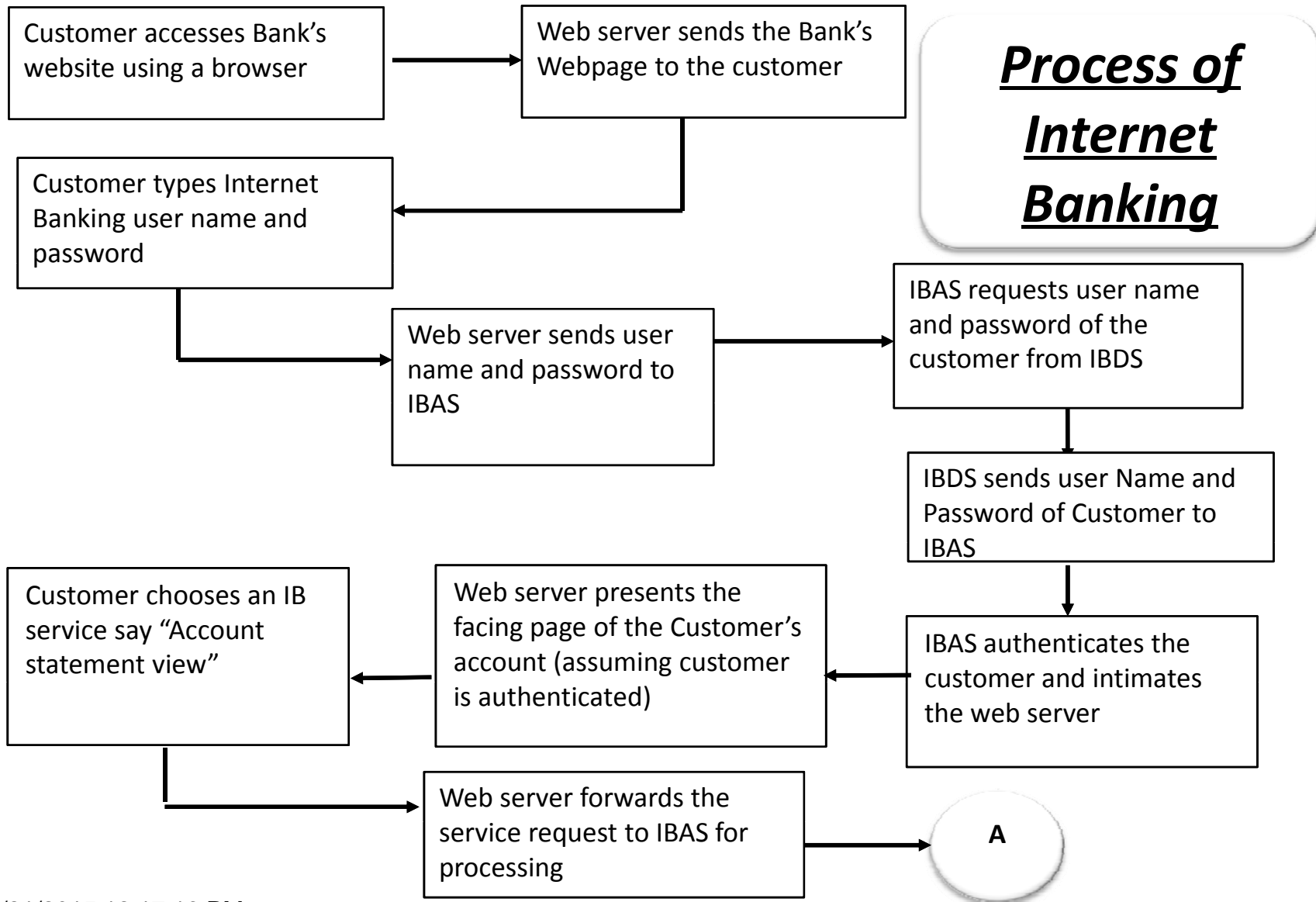
# Internet Banking

## Features

- Banking transactions through Internet
- Permitted to registered customer only
- Any time, any where banking 24X7
- Adequate security to be built
- Customer awareness to be increased
- Beware of phishing attacks







## NEFT and RTGS

	<u>NEFT</u>	<u>RTGS</u>
<i>Suitable For</i>	Small Transfers	Large Transfers
<i>Settled In</i>	Batches(Deferred Net Settlement Basis)	Continuous(Gross Settlement)
<i>Minimum Transfer</i>	No minimum limit	Rs. 2 lakh
<i>Maximum Transfer</i>	No Limit	No Limit
<i>Maximum charges</i>	Rs. 5-25	Rs. 30-55
<i>Transfer</i>	After a cut-off time	At the time the funds are received

# Cash Management System

It is a new product developed by banks. The objective of the product is to meet the needs of the customers who have operations all over the country.

- The broad features of **CMS** are as follows:
  - Multiple collection centres.
  - At the client's main account which is maintained at the pooling centre credit is offered on the same day for all the cheques / drafts deposited and cleared at the branches.
  - The product also provides Management Information System to customers providing details location wise and also party wise.
  - If necessary, information can even be provided by e-mail.

# Pay TM

Understanding Concept of E-Payment

Audit Challenge

Understanding PayTM



# Thank You

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