



• INNOVATION IN BANKING

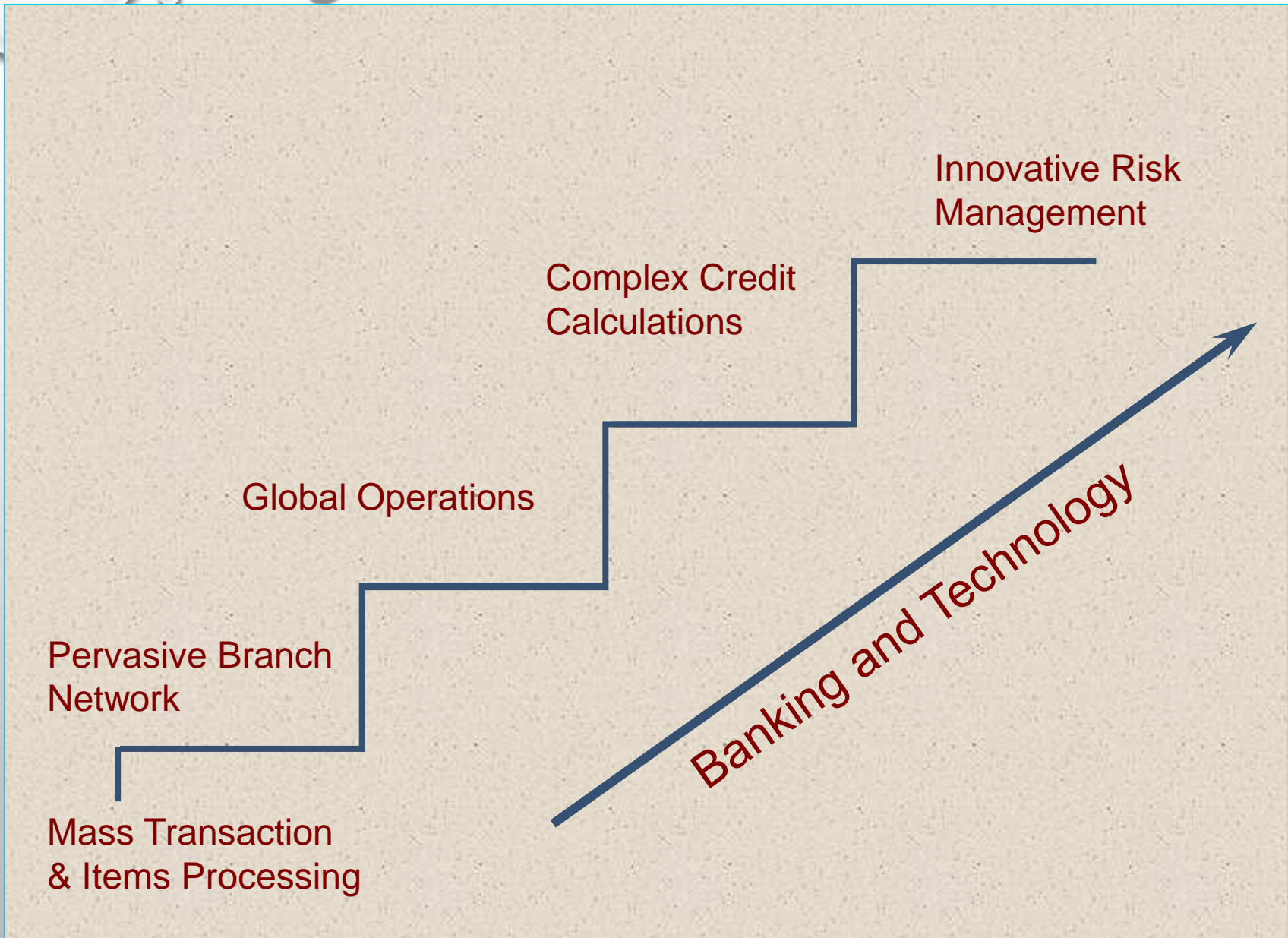
COURSE: INNOVATION DEVELOPMENT IN
COMMERCIAL BANKS

PRESENTED BY FARKHOD ODILOV



THE TECHNOLOGY REVOLUTION

- **THE IMPACT OF TECHNOLOGY ON THE REAL &**
- **FINANCIAL WORLD AROUND THE CENTRAL BANKS**
 - **E-GOVERNANCE**
 - **CHOICE OF CHANNELS , CONFIDENCE AND CONVENIENCE TO THE END-USER**
 - **EFFICIENCY**
 - **FACILITATING GROWTH OF PRODUCTS AND SERVICES**



TECHNOLOGY AND CENTRAL BANKS

Technology has
Affected every
Core
Central
Banking
Function

Why Central
Banks are
interested?

The potential
Technology
offers
to improve
internal
processes

CORE CENTRAL BANKING FUNCTIONS

Banking
Supervision

Currency
Management

Financial &
Monetary
Stability

TECHNOLOGY AND CENTRAL BANKS

SO WHY ARE CENTRAL BANKS INTERESTED?

- **THE WIDESPREAD ADOPTION OF TECHNOLOGY BY THE BANKING INDUSTRY**
- **THE IMPACT OF TECHNOLOGY ON EVERY SINGLE CORE CENTRAL BANKING FUNCTION**
 - **SUPERVISION AND REGULATION**
 - **CURRENCY MANAGEMENT**
 - **MONETARY & FINANCIAL STABILITY**
- **THE POTENTIAL TECHNOLOGY OFFERS TO CENTRAL BANKS FOR RENDERING MORE EFFECTIVE ITS INTERNAL PROCESSES AND FUNCTIONS**

TECHNOLOGY AND BANKING

THE QUINTESSENCE NATURE OF BANKING HARMONIZES
CLOSELY WITH TECHNOLOGY -

MASS TRANSACTION & ITEMS PROCESSING

- PERVASIVE BRANCH NETWORK
- GLOBAL OPERATIONS
- COMPLEX CREDIT CALCULATIONS
- INNOVATIVE RISK MANAGEMENT

TECHNOLOGY AND BANKING SUPERVISION

THE RBI RESPONSE

Offsite Supervision & Monitoring

OSMOS

COSMOS (Non banking Financial Companies /
Development Financial Institutions)

UBD Soft

Credit Information Bureau (A joint venture between
Housing Development Finance Corporation Ltd.,
State Bank of India, Trans Union International Inc.
& Dun & Bradstreet Information Services India Pvt.
Ltd.

REGULATION AND SUPERVISION – THE CHALLENGE

- TECHNOLOGY HAS ...
 - OPENED UP NEW MARKETS, PRODUCTS, SERVICES, DELIVERY CHANNELS
 - OPENED UP A MARKET FOR “RISKS” – DERIVATIVES
 - THROWN UP THE CHALLENGE OF FINANCING TECH FIRMS & IT INNOVATION

...AND NOT WITHOUT IMPLICATIONS FOR THE STABILITY OF BANKS
AND OF THE ECONOMY

REGULATION AND SUPERVISION – THE RESPONSE

- TECHNOLOGY HAS ALSO...
 - PROVIDED REGULATORS WITH THE WHEREWITHAL TO MEET THE CHALLENGE
 - BEEN THE CORNERSTONE OF ALL RECENT FINANCIAL SECTOR REFORMS
 - ENABLED THE EMERGENCE OF NON-INTRUSIVE, FOCUSED SUPERVISION
...WITH A VIEW TO PREVENT FRAUDS AND DISTURBANCES TO FINANCIAL STABILITY

REGULATION AND SUPERVISION – RBI INITIATIVES

- OFF SITE MONITORING AND SUPERVISION SYSTEM
 - FOR COMMERCIAL BANKS
 - FOR NON BANKING FINANCIAL INSTITUTIONS
 - FOR URBAN CO-OPERATIVE BANKS

- THE CREDIT INFORMATION BUREAU

CURRENCY MANAGEMENT AND TECHNOLOGY – OPPORTUNITIES GALORE

- CURRENCY MANAGEMENT IS A FORMIDABLE TASK IN INDIA GIVEN...
 - THE GEOGRAPHICAL SIZE OF THE COUNTRY
 - THE VOLUME AND VALUE OF NOTES AND COINS IN CIRCULATION
 - THE MARKED PREFERENCE FOR CASH
 - CURRENCY HANDLING PRACTICES

...BUT TECHNOLOGY OFFERS IMMENSE OPPORTUNITIES TO IMPROVE PERFORMANCE

CURRENCY MANAGEMENT – RBI INITIATIVES

- THE CLEAN NOTE POLICY (1999)
 - ESTABLISHMENT OF 2 STATE OF THE ART CURRENCY PRESSES
 - TECHNOLOGY DRIVEN ANTI COUNTERFEIT MEASURES
 - 48 FULLY AUTOMATED CURRENCY VERIFICATION AND PROCESSING SYSTEMS
 - 21 SHREDDING AND BRIQUETTING MACHINES

MONETARY POLICY – THE CHALLENGE (1)

- **THE PROLIFERATION OF IT HAS...**

- REDEFINED THE TOOLKIT OF ECONOMIC INDICATORS USED IN IMPLEMENTING MONETARY POLICY
- RENDERED MORE COMPLEX, THE TASK OF COMPILING STATISTICAL INFORMATION
- RENDERED DIFFICULT THE TASK OF CAPTURING THE IMPACT OF IT ON PRICE LEVELS
- RAISED ISSUES IN RESPECT OF THE POSSIBLE PROLIFERATION OF DIGITAL MONEY

MONETARY POLICY – THE CHALLENGE (2)

- TRANSFORMED THE CONDUCT OF THE PAYMENT AND SETTLEMENT SYSTEM
- SET THE STAGE FOR AN UNPRECEDENTED GROWTH IN FINANCIAL ACTIVITY ACROSS THE GLOBE
- RENDERED MORE VULNERABLE THE DOMESTIC PAYMENT SYSTEM AND FINANCIAL STABILITY TO INTERNATIONAL “SHOCKS”

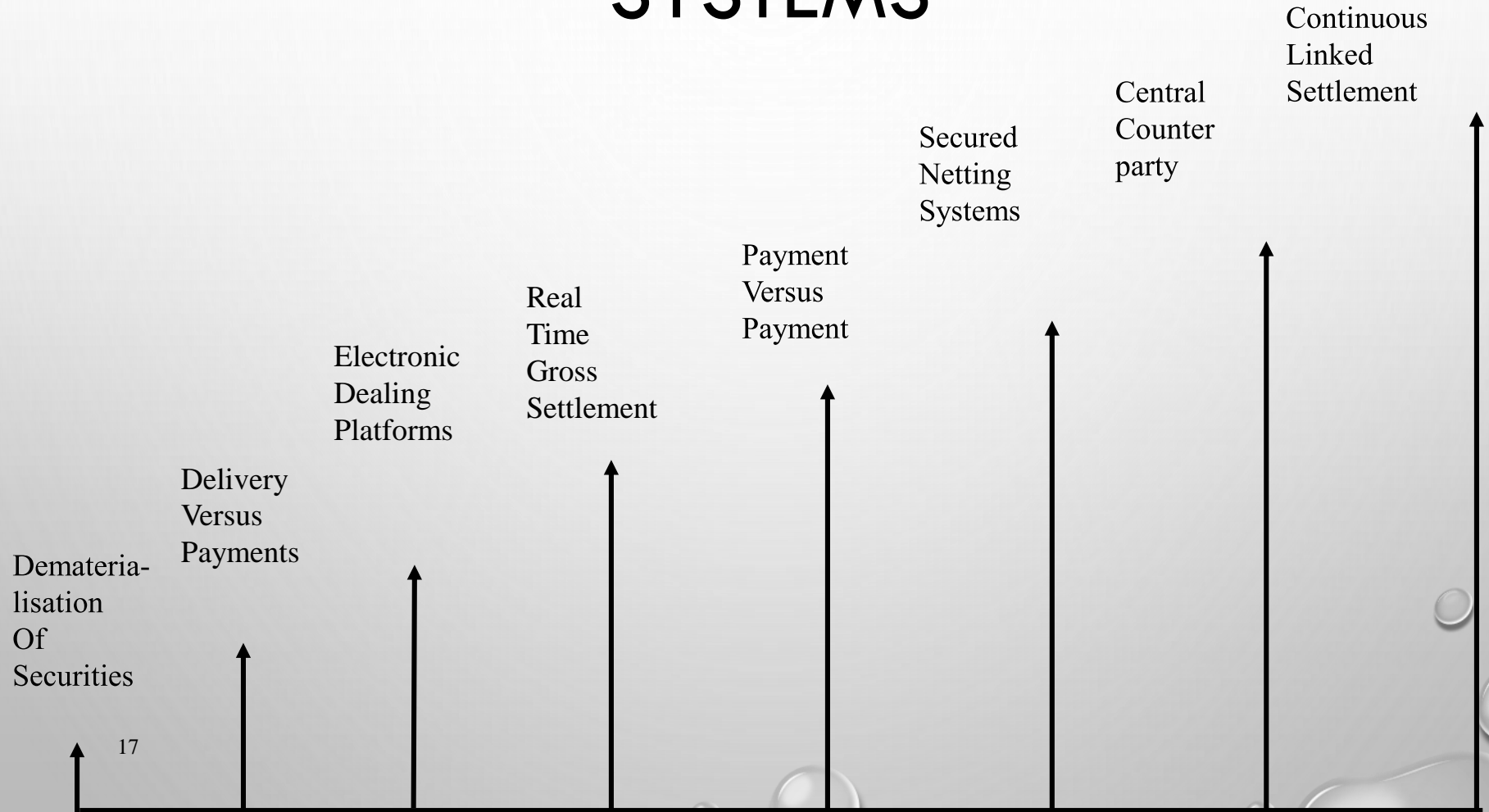
... MAKING THE CONDUCT OF

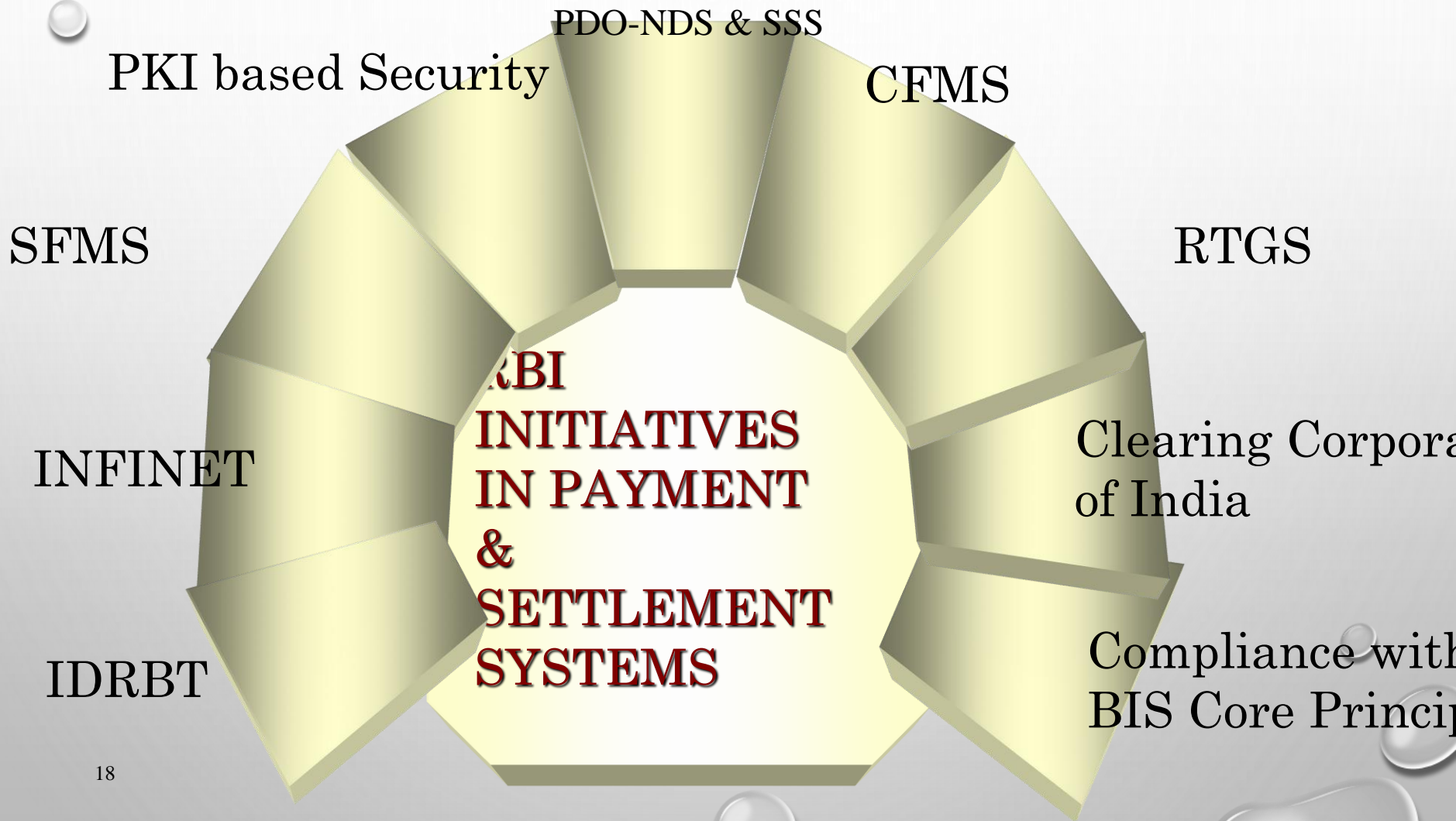
MONETARY POLICY MORE COMPLEX AND PRONE TO IMPLEMENTATION AND OPERATIONAL RISKS

MONETARY POLICY – THE OPPORTUNITY

- **THE PROLIFERATION OF IT HAS ALSO SET THE STAGE FOR IMPROVING AND MANAGING RISKS IN PAYMENT SYSTEMS**
 - **ELECTRONIC TRADING SYSTEMS**
 - **DVP/PVP**
 - **RTGS**
 - **SECURED NETTING SYSTEMS**
 - **THE GROWTH OF THE CENTRAL COUNTERPARTY (CCP)**
 - **CONTINUOUS LINKED SETTLEMENT**

IT AND PAYMENT AND SETTLEMENT SYSTEMS

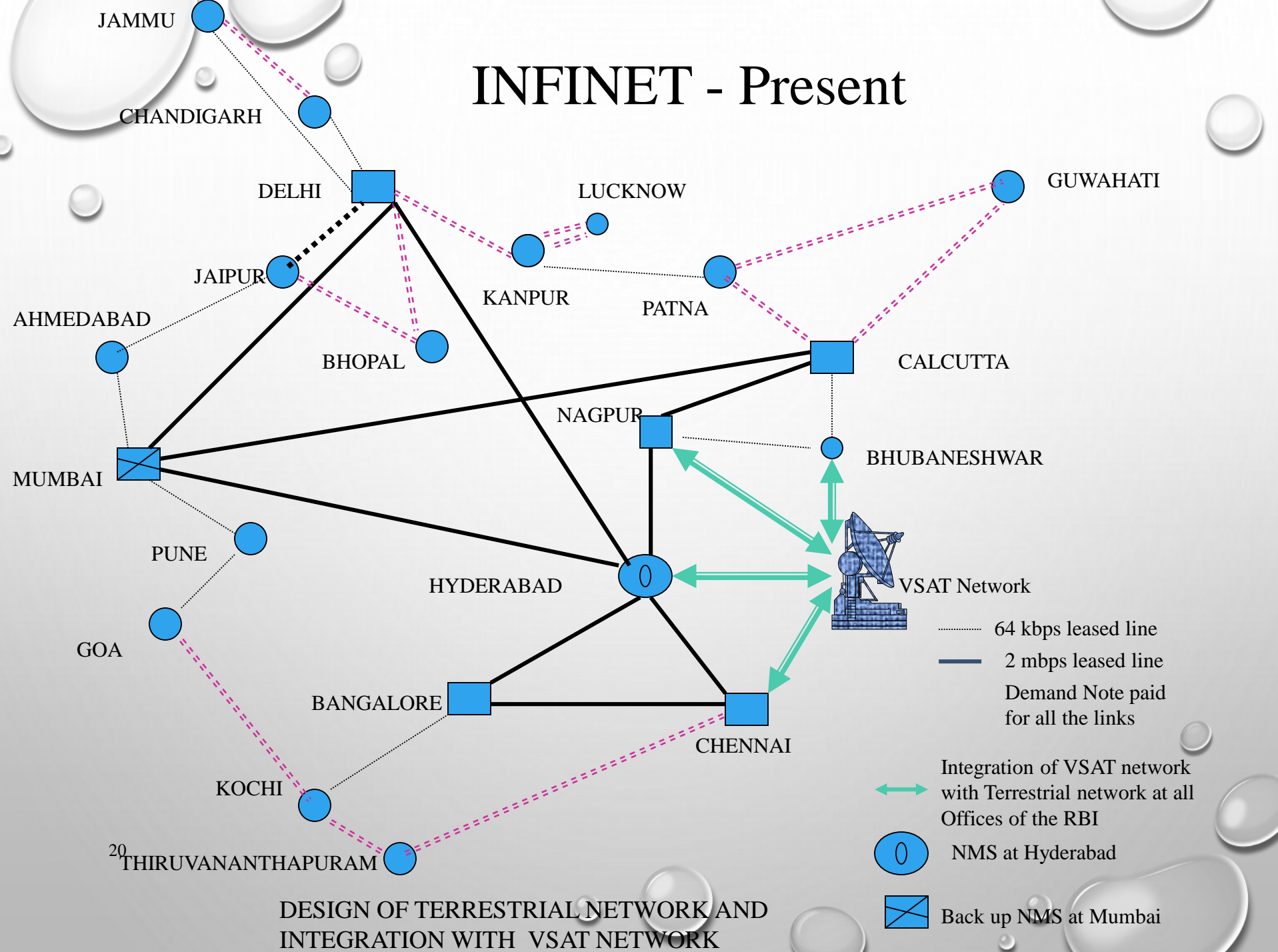




RBI INITIATIVES IN PAYMENT AND SETTLEMENT SYSTEMS (1)

- THE IDRBT
 - NETWORK EXTERNALITIES
 - THE INDIAN FINANCIAL NETWORK (INFINET)
 - MESSAGING SOLUTIONS
 - THE STRUCTURED FINANCIAL MESSAGING SYSTEM (SFMS)
 - SECURITY
 - PUBLIC KEY INFRASTRUCTURE

INFINET - Present



DESIGN OF TERRESTRIAL NETWORK AND INTEGRATION WITH VSAT NETWORK

STRUCTURED FINANCIAL MESSAGING SYSTEM

Central Server at
IDRBT

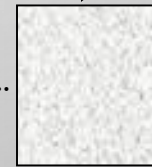
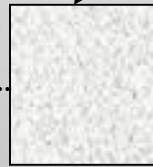
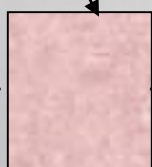
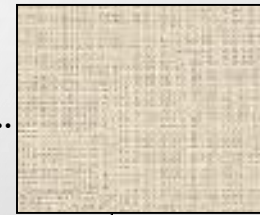
Bank-1 Gateway



Bank-2 Gateway



Bank-n Gateway



Branch-1

Branch-2

Branch-n

Branch-1

Branch-2

Branch-n

Branch-1

Branch-2

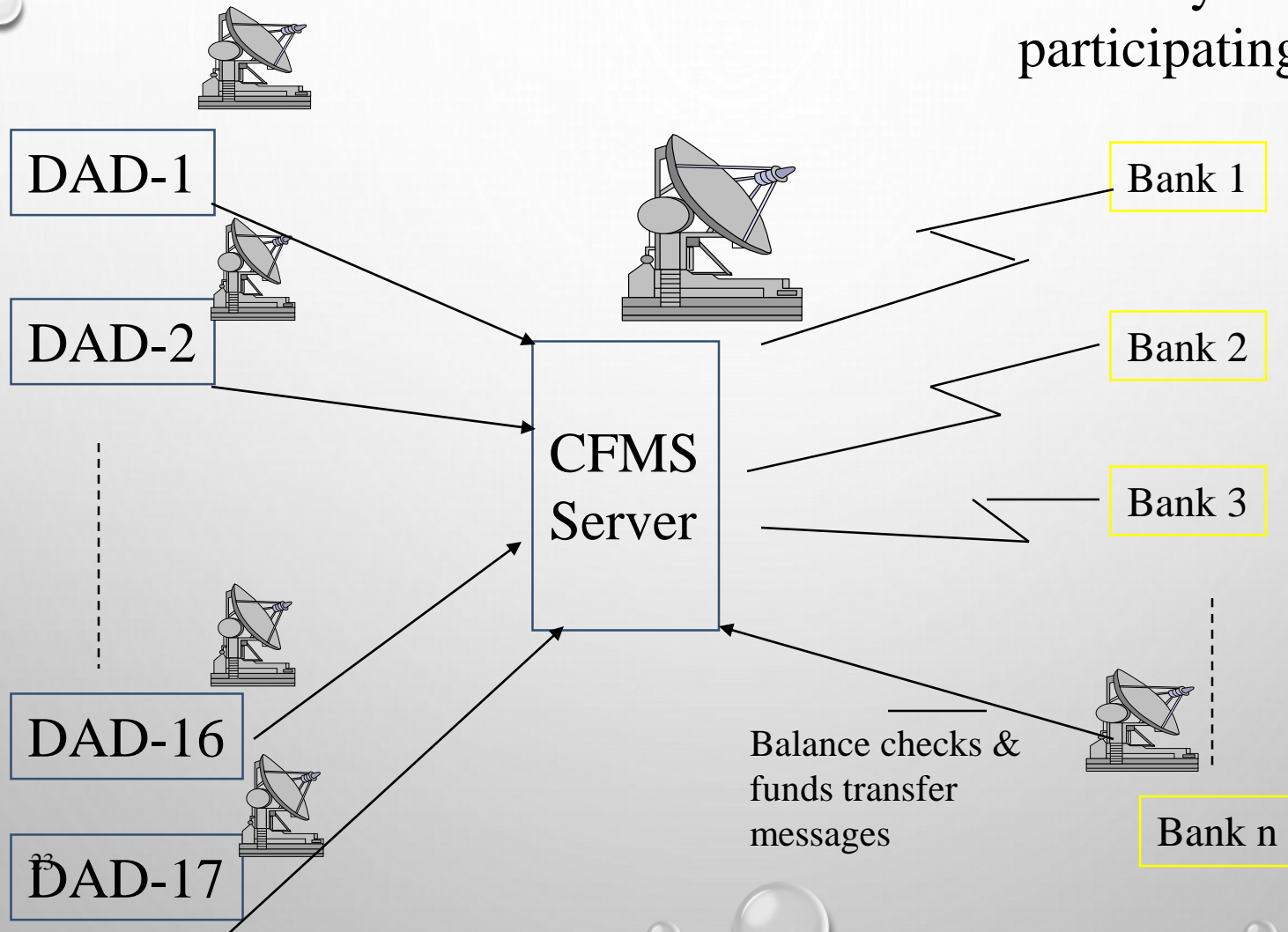
Branch-n

RBI INITIATIVES IN PAYMENT AND SETTLEMENT SYSTEMS (2)

- A REAL TIME GROSS SETTLEMENT SYSTEM
 - REDUCTION OF SYSTEMIC RISK IN INTER BANK PAYMENT SYSTEMS
 - TO BE IMPLEMENTED BY THE YEAR END
- THE CENTRALISED FUNDS SETTLEMENT SYSTEM
 - FACILITATING EFFECTIVE LIQUIDITY MANAGEMENT
- THE NEGOTIATED DEALING SYSTEM
 - A MODERN ELECTRONIC DEALING PLATFORM FOR GILTS
 - ENABLING STRAIGHT THROUGH PROCESSING

CENTRALISED FUNDS MANAGEMENT SYSTEM

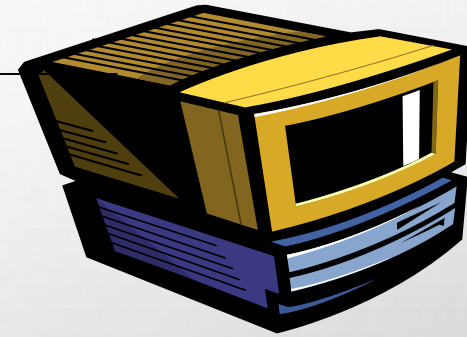
Gateway for the participating banks



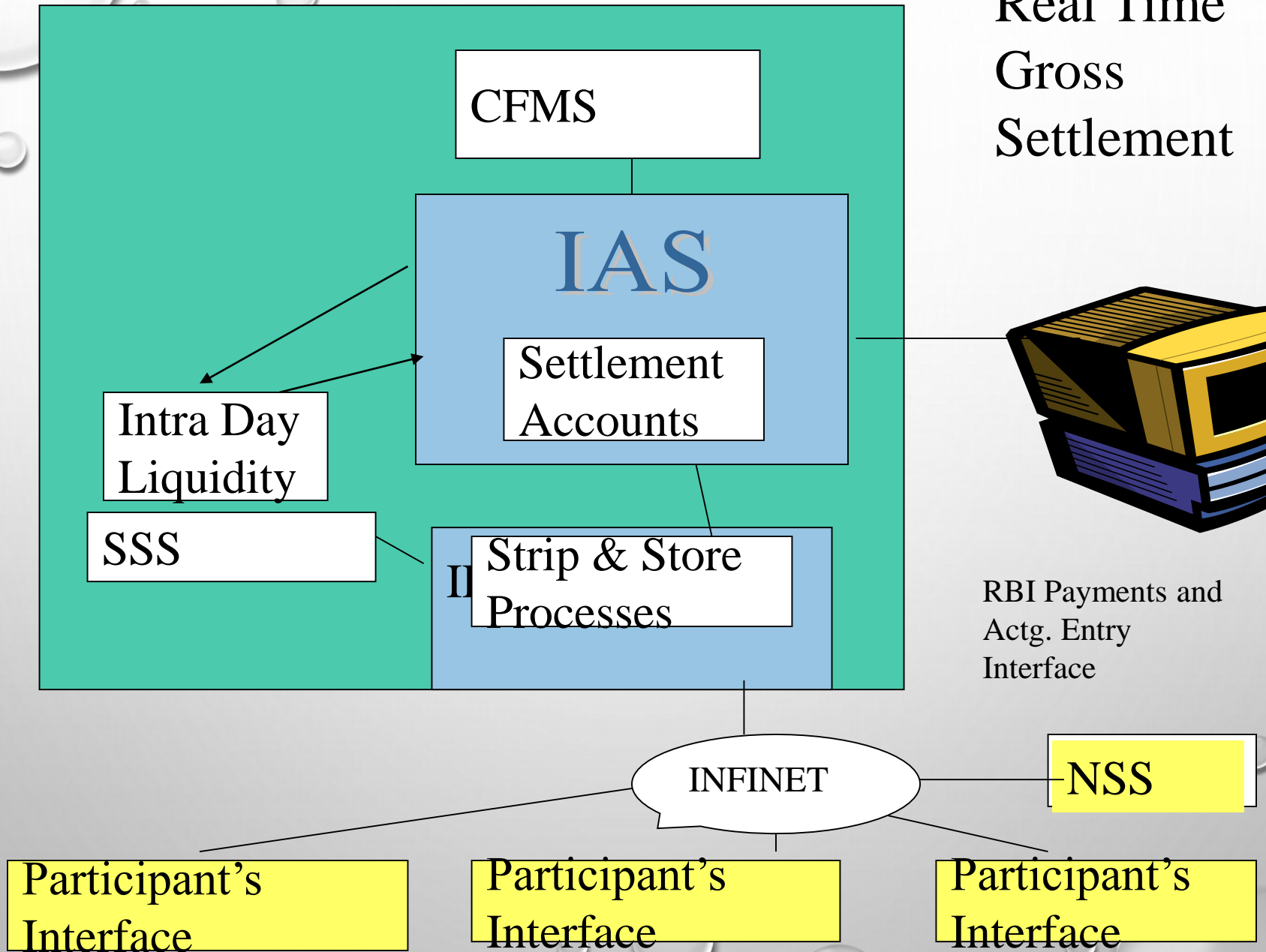
CENTRALISED FUNDS MANAGEMENT SYSTEM – COUNTRYWIDE SPREAD



Real Time Gross Settlement

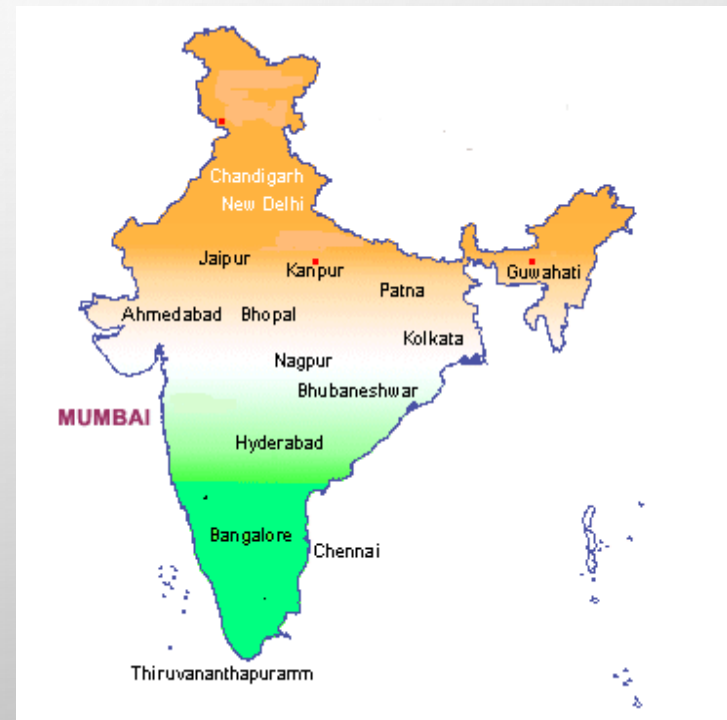


RBI Payments and
Actg. Entry
Interface



NEGOTIATED DEALING SYSTEM & THE SECURITIES SETTLEMENT SYSTEM

- Electronic dealing platform in government securities and money market instruments- Primary and Secondary markets
- Quicker Price Discovery
- Straight Through Processing- Settlement of transactions
- Delivery versus Payments
- Efficient Servicing
- Centralised Depository and Debt Servicing
- Wide Area Based Dealing System



RBI INITIATIVES IN PAYMENT AND SETTLEMENT SYSTEMS (3)

- THE SECURITIES SETTLEMENT SYSTEM
 - PROVIDING CENTRALIZED DEPOSITORY AND SETTLEMENT SERVICES
 - SEAMLESSLY INTEGRATED WITH THE NDS AND RTGS SYSTEMS
- THE CLEARING CORPORATION OF INDIA
 - SECURED NETTING SERVICES WITH CENTRAL COUNTERPARTY ARRANGEMENTS
 - G-SEC AND FOREX SEGMENTS
 - ELIMINATION OF SETTLEMENT RISKS WITH LIQUIDITY SAVING ELEMENTS

THE CLEARING CORPORATION OF INDIA

- Promoted by large banks & financial institutions
- Central Counterparty to trades in
 - Government Securities
 - Forex markets
- Secure netting system



TECHNOLOGY VISION OF THE RBI

Desk Top Decision Making Capability

Centralised Database Management System

Enterprise Knowledge Management System

Desk Top Analytical Capability

Offsite Supervisory Systems

Integrated Forex Management System

Human Resource Information System

Desk Top Transactional Capability

Integrated Accounting System

Integrated Government Accounting System

Currency Operations System

Securities Settlement System

Integrated Establishment System

RBI INITIATIVES IN PAYMENT AND SETTLEMENT SYSTEMS (4)

- THE FINAL GOAL...
 - ESTABLISHMENT OF A SECURE, EFFICIENT, MODERN PAYMENT AND SETTLEMENT SYSTEM IN THE COUNTRY
 - ENSURING FULL COMPLIANCE WITH THE CORE PRINCIPLES FOR SYSTEMICALLY IMPORTANT PAYMENT SYSTEMS OF THE BANK FOR INTERNATIONAL SETTLEMENTS

SUMMARY OF ISSUES: RBI AS A USER OF TECHNOLOGY (1)

- THE TECHNOLOGY MISSION IN RBI
 - TO ENABLE BETTER AND FASTER TRANSACTIONS, ANALYSIS AND DECISIONS
 - TO PROVIDE STATE OF THE ART, ONLINE TRANSACTIONAL, ANALYTICAL AND DECISION MAKING CAPABILITIES AT THE DESKTOP OF EACH OFFICIAL IN A SECURED ENVIRONMENT

RBI AS A USER OF TECHNOLOGY (2)

- THE STRATEGY... ON LINE TRANSACTIONAL CAPABILITY
 - AN INTEGRATED SOLUTION FOR EACH FUNCTIONAL AREA
 - INTEGRATED ACCOUNTING SOLUTION
 - RBI AS “BANKER TO BANKS”
 - INTEGRATED GOVERNMENT ACCOUNTING SOLUTION
 - RBI AS “BANKER TO GOVERNMENT”
 - SECURITIES SETTLEMENT SYSTEM
 - FOR THE MANAGEMENT OF PUBLIC DEBT
 - COMPUTERISED CURRENCY OPERATIONS AND MANAGEMENT SOLUTION
 - INTEGRATED ESTABLISHMENT SOLUTION

RBI AS A USER OF TECHNOLOGY (3)

- THE STRATEGY...ON LINE ANALYTICAL CAPABILITY
 - **THE INTEGRATED FOREIGN EXCHANGE MANAGEMENT SOLUTION**
 - **THE HUMAN RESOURCE INFORMATION SYSTEM**
 - **INTEGRATED MONETARY POLICY SOLUTION**

RBI AS A USER OF TECHNOLOGY (4)

- THE STRATEGY...ON LINE DECISION MAKING CAPABILITY
 - **THE CENTRALIZED DATABASE MANAGEMENT SYSTEM**
 - **A DATA WAREHOUSING AND DATA MINING SOLUTION**
 - **THE ENTERPRISE KNOWLEDGE MANAGEMENT SYSTEM**
 - **ON AN ADVANCED STAGE ON THE DRAWING BOARD**



भारतीय रिज़र्व बैंक
Reserve Bank of India
India's Central Bank

For site in Hindi
[click here](#)

RBI AS A USER OF TECHNOLOGY (5)

[Disclaimer](#)

[Negotiated Dealing System](#)

RBI Reference Rate

[Lending Rates of Banks](#)

[Market Operations](#)

[LAF](#)

[Money Statistics](#)

[Annual Report \(2001-2002\)](#)

[RBI Bulletin](#)

[NBFC List](#)

[FEMA](#)

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• HARNESSING TECHNOLOGY FOR MORE

EFFECTIVE DISSEMINATION OF INFORMATION

All sections, Exact phrase

Last Day

45.92

51.64

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WWW.RBI.ORG.IN

A STORE HOUSE OF INFORMATION FOR

CUSTOMERS AND FOR

THE GENERAL PUBLIC



Graphics designed by Sirius Interactive

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[Net Access \(India\) Private Limited](#)

[Reference Rate
Archive...](#)

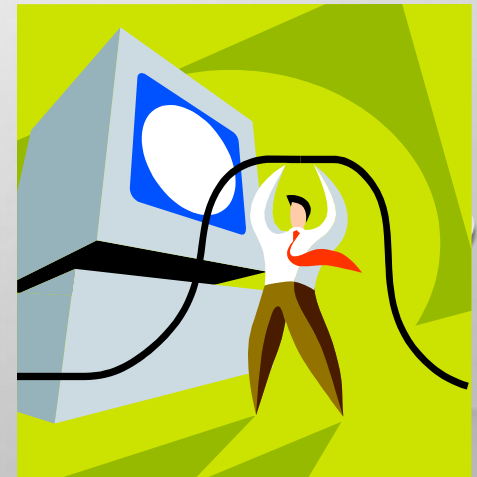
RBI AS A USER OF TECHNOLOGY (6)

• CUSTOMER SERVICE

- **MULTIPLE DELIVERY CHANNELS**
 - **COIN & NOTE DISPENSING MACHINES**
 - FOR THE GENERAL PUBLIC
 - **INTERACTIVE VOICE RESPONSE SYSTEM**
 - FOR BANKS AND FINANCIAL INSTITUTIONS
 - **WEB SERVER**
 - FOR GOVERNMENT CUSTOMERS
- **ON THE ANVIL...**
 - **A SECURED WEB SERVER**
 - **SFMS/EMAIL BASED COMMUNICATION WITH CUSTOMERS**

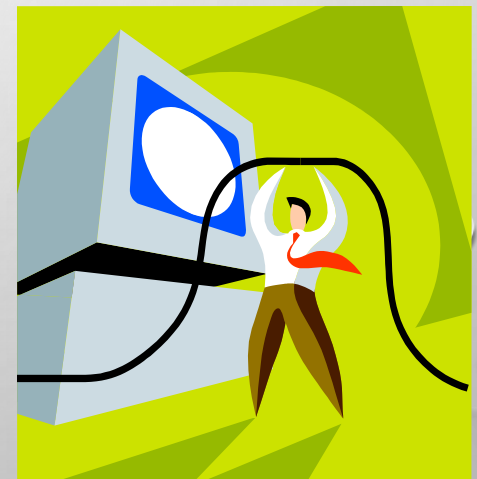
CUSTOMER SERVICE...(1)

- Dissemination of information
 - The RBI website
- Multiple Delivery Channels
 - Coin & Note Dispensing Machines
 - For the general public
 - Interactive Voice Response System
 - For banks and financial institutions
 - Web server
 - For government customers
 - On the anvil....
 - A secured web server
 - SFMS/email based communication with customers

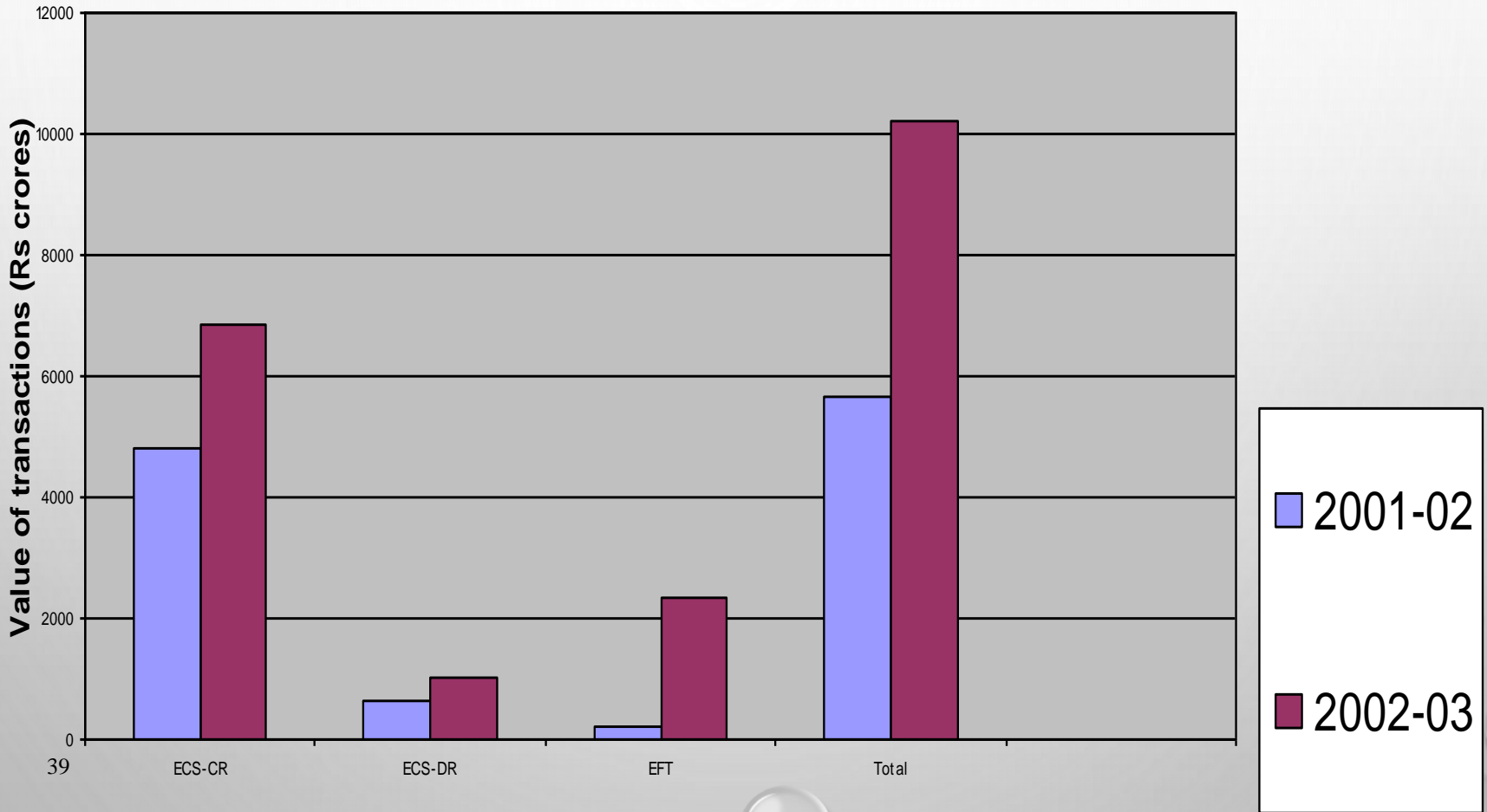


CUSTOMER SERVICE...(2)

- Improvements in payment and settlement systems
 - MICR Clearing
 - Enabling faster clearing of cheques
 - Cheque Truncation & E-Cheques
 - On the drawing board
 - ECS/EFT
 - Enabling T+2 settlement of our equities market
 - National EFT
 - Enabling T+0 settlement of all customer funds transfer transactions



ELECTRONIC PAYMENT METHODS - VALUE



RBI AS A USER OF TECHNOLOGY (7)

• CUSTOMER SERVICE

- IMPROVEMENTS IN PAYMENT AND SETTLEMENT SYSTEMS
 - MICR CLEARING
 - ENABLING FASTER CLEARING OF CHEQUES
 - CHEQUE TRUNCATION & E-CHEQUES
 - ON THE DRAWING BOARD
 - ECS/EFT
 - ENABLING T+2 SETTLEMENT OF OUR EQUITIES MARKET
 - NATIONAL EFT
 - ENABLING T+0 SETTLEMENT OF ALL CUSTOMER FUNDS TRANSFER TRANSACTIONS

Pre-requisites for Technology

**Human Resource
Empowerment**

**Business Process
Re-engineering**

**Planning for
Disasters**

THE PRE-REQUISITES FOR TECHNOLOGY

- PLANNING FOR DISASTERS
 - INCREASED OPERATIONAL RISK
 - BUSINESS CONTINUITY PLANNING
- BUSINESS PROCESS RE-ENGINEERING
- HUMAN RESOURCE EMPOWERMENT

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THANK YOU