

PRESENTATION TO INDIAN RAILWAYS  
| NEW DELHI | 10.11.2018

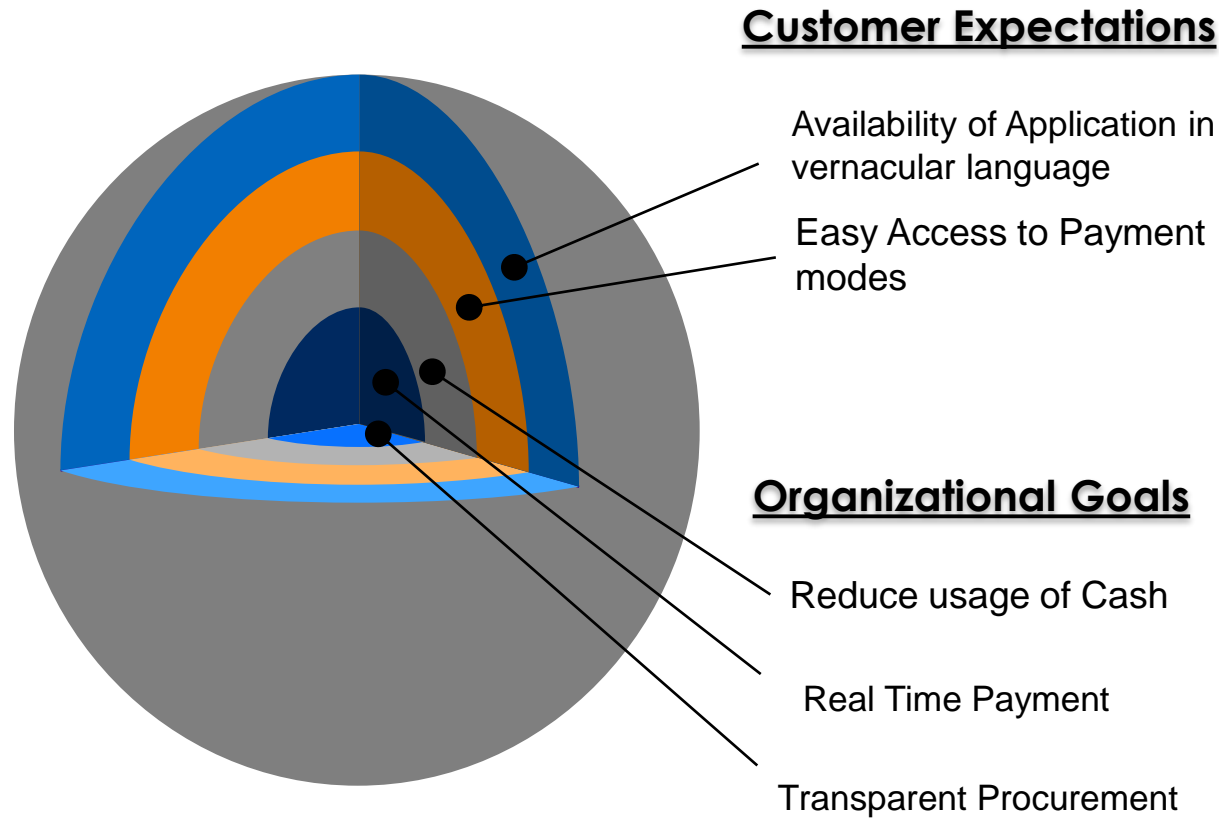
# Digital Banking Ecosystem - An Overview



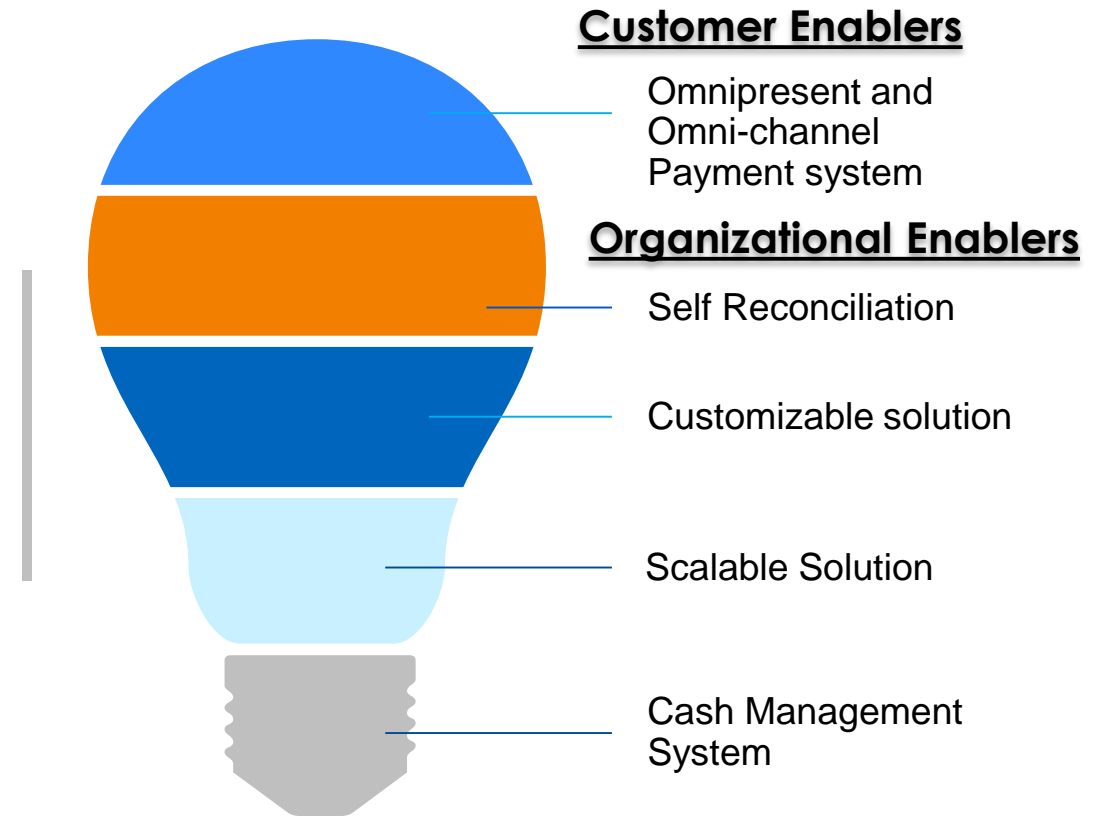
Presented  
by



# Existing Concern Areas for Indian Railways and Solution Design



**Concern Areas**



**Solution Design**

# Digital Banking Ecosystem - An Overview

- 01 SBI's Digital Journey
- 02 Digital Payment Infrastructure
- 03 Prevalent Payment Modes
- 04 SBI's Customer facing platforms
- 05 Our latest Digital offering.. YONO
- 06 SBI & Indian Railways
- 07 Cybersecurity



# 01. SBI's Digital Journey

# SBI is the #1 Bank in India & the Digital Bank for the nation



Of the Total Payments transaction portfolio:

- Digital Transactions account for 45%
- Alternate Channel transactions (incl Digital) account for 84%

**22,000+**  
Branches

**59,000+**  
ATMs

**58,274**  
BC outlets

**42.42 Cr+**  
customers

**13.42 Cr+**  
FI accounts

## Robust IT Architecture to handle Transaction Volumes

Handling **750+Mn** A/cs  
Peak capacity **2Bn**

Supports **45Mn+** Internet  
and Mobile banking  
customers

Supports **57K+** ATMs  
and **600K+** POS  
machines

Handle load of **10,000 TPS** &  
Peak Capacity of **23,000 TPS**

# Testimony of our Digital presence

## Social Media dominance



1<sup>st</sup>

in terms of # of followers across all banks in the world for...



# 165 Lakhs followers



# 34 Lakhs followers



# 7.29 Lakhs followers

2<sup>nd</sup>

in terms of # of views across all banks in the world



# 1963 Lakhs views

# 1.40 lakhs subscribers

2<sup>nd</sup>

in terms of # of followers across all banks in the world



# 5.40 Lakhs followers

## Awards & Accolades



**FINNOVITI 2018** - Best innovative product award



**The Asian Banker Financial Technology Innovation Awards 2018**



**Intelligent Enterprise Award\_2018**



**Brand finance, UK** ranks SBI as the 2<sup>nd</sup> most reputable banking brand in the world



**Global Finance, 25<sup>th</sup> Annual best bank Award 2018**



# We have been on forefront in contributing to Government Initiatives to build Digital India



(SBI Aggregation services to facilitate payments 30,000 + daily transactions processed)



Recruitment fee collection

Aggregation services of SBI including UPI provided



(Sole banker for refunds of GST, 30% share in GST collections)



SBI's Market share in DBTL & DBT is 100% & 51% respectively



## 02. Digital Payment Infrastructure



# The Core Digital Payments platforms on which all Customer facing instruments are built :

## National Electronic Fund Transfer (NEFT)

- Transaction limit of 2 lakhs
- Low value, high volume transactions.
- Settled in 23 half hourly batches(08:00 AM - 07:00 PM)

## Immediate Payment Service (IMPS)

- Real time payments incl. holidays
- Transaction Limit of 2 lakhs
- Mobile / Internet / ATM / Branch
- Uses (Mobile & MMID) or (A/c No & IFSC)
- Remitter needs to be mobile banking registered
- UPI works on IMPS backbone!

## National Automated Clearing House (NACH)

- Digitally signed file exchange
- Same day transaction cycle
- Receivables & Payables & Mandate Management
- Includes Aadhaar Payment Bridge transactions for LPG subsidies

## Real Time Gross Settlement systems (RTGS)

- Transactions > Rs. 2.00 lacs
- For instant settlement of interbank payments.
- Cut Off time – Customer 8.00 am to 4.30 pm & InterBank 8.00 am to 7.45 pm

## Card Network Infrastructure

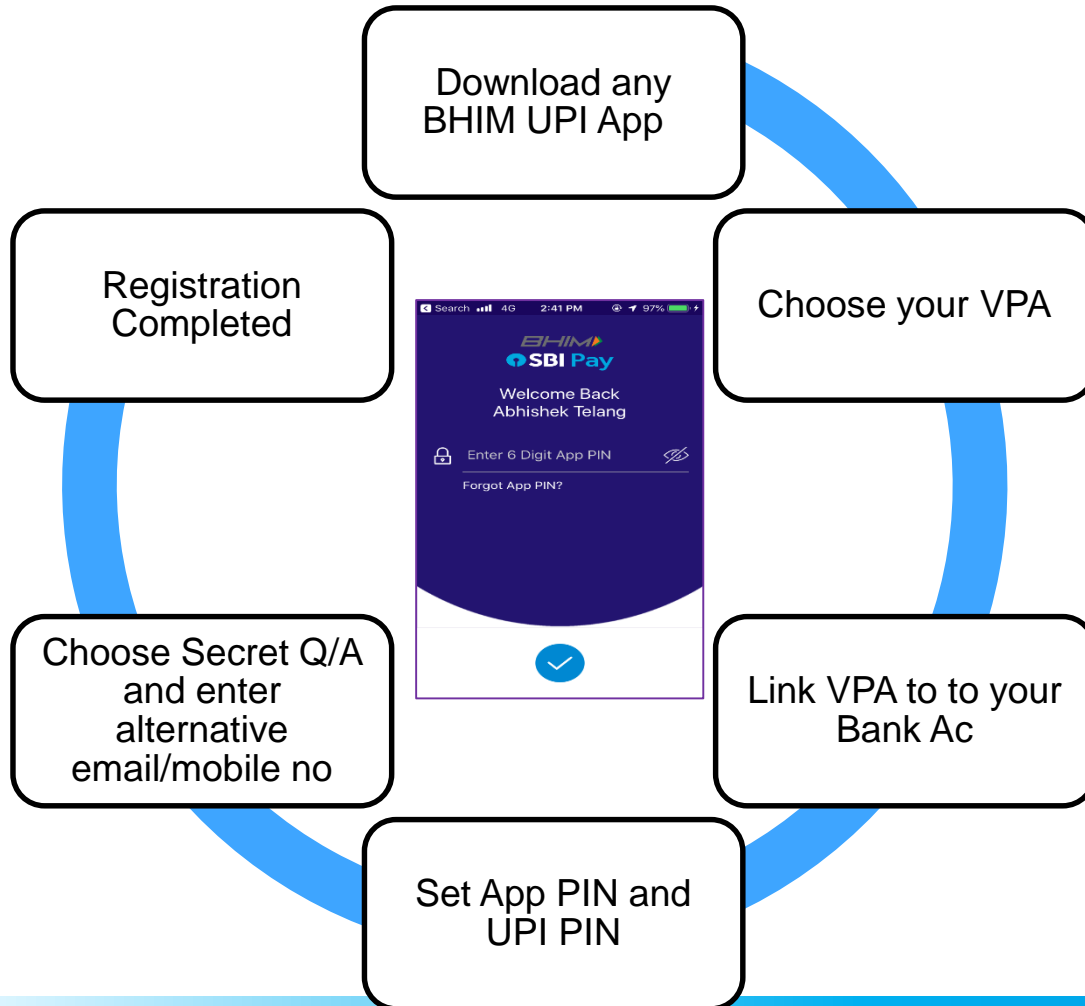
- Owned by Pvt entities (MasterCard/VISA/Amex) and Rupay of NPCI
- 30% digital share on Debit card spends
- Most prevalent P2M platform

## 03. Prevalent Payment Modes



# A. What is UPI?

An **interoperable** mobile based payment solution of NPCI aimed at **facilitating instant payments (push/pull)** and providing a **single interface (mobile/web)** with **superior customer experience**.



What do you need for registering for UPI ?  
**A Bank Account & a mobile with internet**

*“UPI is an easy to use version of NPCI’s IMPS, 24\*7\*365 funds transfer service! “*

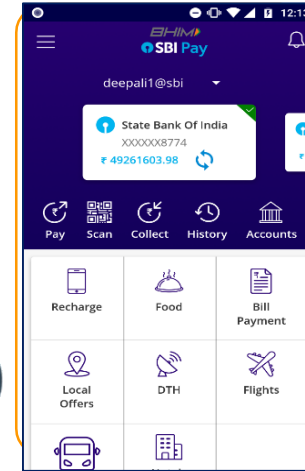
# A-1. How UPI is different from existing Payment Methods

**API based Payments brings flexibility across ecosystem**

**Make Payments Simple, secure and Seamless**

**Ability to provide Single Click 2 Factor Authentication experience**

**No need to share Bank account details**



**UPI caters to P2P transactions and can also handle high volume P2M transactions**

**Instant and available 24\*7 – No Holiday**

**Four party model**

**Multiple payment modes- VPA/Ac No/IFSC, Mobile No/MMID**

**Low cost Acquiring infrastructure as Mobile is the primary device**

## A-2. UPI is expected to overtake card payments in the near future...

- ✓ While the Card systems are mostly owned by private entities like MasterCard, VISA , American Express, the UPI system is completely owned by NPCI/RBI.
- ✓ UPI rides on the NPCI IMPS platform with the added facility of making payments using Virtual Payment Address (VPA). User does not have to reveal Account number or other details.
- ✓ UPI transactions surged to 405 mn. in Sep'18 up nearly 30% from 312 Mn. transactions in Aug'18 and 165% from about 151 Mn. at the beginning of this year. The value of transactions put through the UPI ecosystem in Sep'18 stood at ₹ 59,835 cr.
- ✓ Payment Integration into popular apps in India will drive the digital payments market to \$1 trillion over the next 5 years



# UPI 2.0

UNIFIED PAYMENTS INTERFACE



Application for SEBI approved IPO (Through ASBA process) to be rolled out on UPI in pilot stage w.e.f 01.01.2019.

Transaction Limits doubled to ₹ 2,00,000/-

## WHAT'S NEW IN UPI 2.0

The upgraded version of UPI was finally launched in India on 16th August. Here are some newly introduced features:



**Linking of overdraft account** - UPI now offers an additional digital channel to use the overdraft account



**One-time mandate** - Enables on to pre-authorise a transaction for payment at a later date.



**Invoice in inbox** - Enables customers to verify all the payment details mentioned in the invoice, before making the actual payment.



**Signed intent & QR** - Customers can check the authenticity of merchants while scanning their QR code to make payments.

## B. BHARAT QR (QUICK RESPONSE)

- A secure way for merchants to receive payments from customers by scanning a QR code (Static or Dynamic)
- Interoperable among major Card Schemes i.e. VISA, Master, Rupay.
- Customers can make payment through Bharat QR(Debit Card/Credit Card) & **UPI**.
- Requirements **#CA with Bank# Data connection (2/3/4G) # A smart phone**



### Benefits to Merchants

- MDR 10 bps less than usual Debit Card MDR applicable for PoS
- Low cost option

### **Benefits to Customers:**

- Customer need not carry card.
- Less chance of fraud as customer initiates the payment.

# C. MERCHANT POINT OF SALE (POS)



- POS refers to a terminal (Hardware and/or software) on which a Debit/ Credit or Prepaid card is swiped/dip/tapped in a card present environment.
- Recently we have launched a new payments acceptance platform MOPAD (Multi Option Payment Acceptance Device) wherein customers can make payment via Cards/Bharat QR/UPI on a single PoS terminal.

### Existing Clientele

1. Railways
2. IOCL/BPCL/HPCL
3. Lifestyle International Pvt Ltd
4. Reliance Group
5. Titan Group
6. Future Group

### Benefits to Cardholder:

- Need not carry cash, which is risky
- Saves time and money in visiting bank Branch / ATM to withdraw money

### Benefits to Merchant:

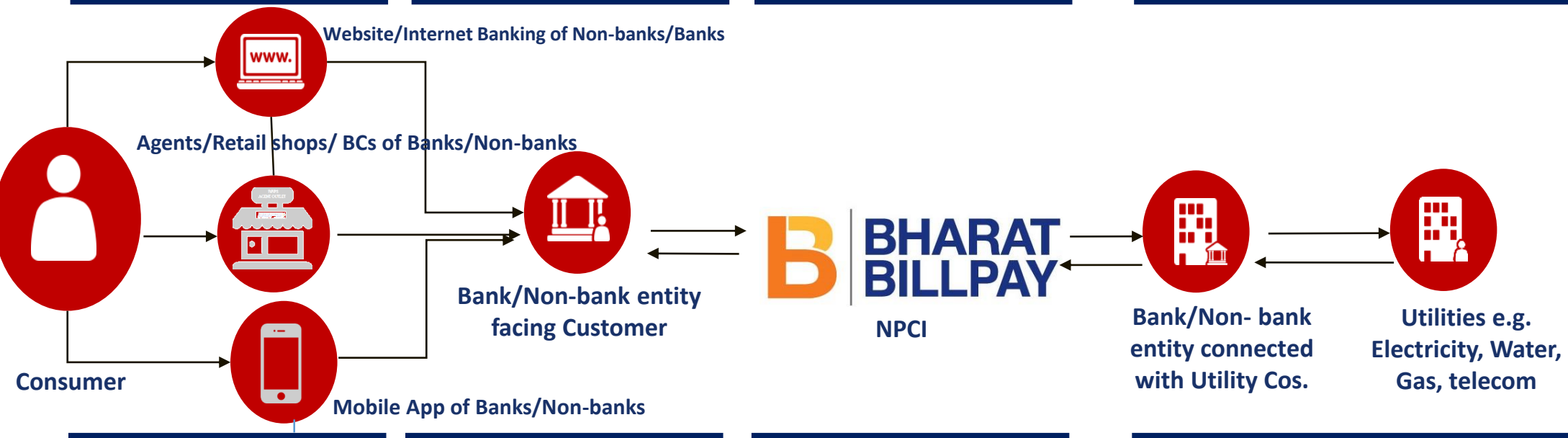
- Cash handling is avoided
- Additional revenue stream from Value-Added Services - Cash @ PoS, DCC
- Multiple payment facilities (MOPAD)

*SBI is the largest acquirer in the Country with a market share of 17% as on Aug18*

# D. Bharat Bill Payment System (BBPS)

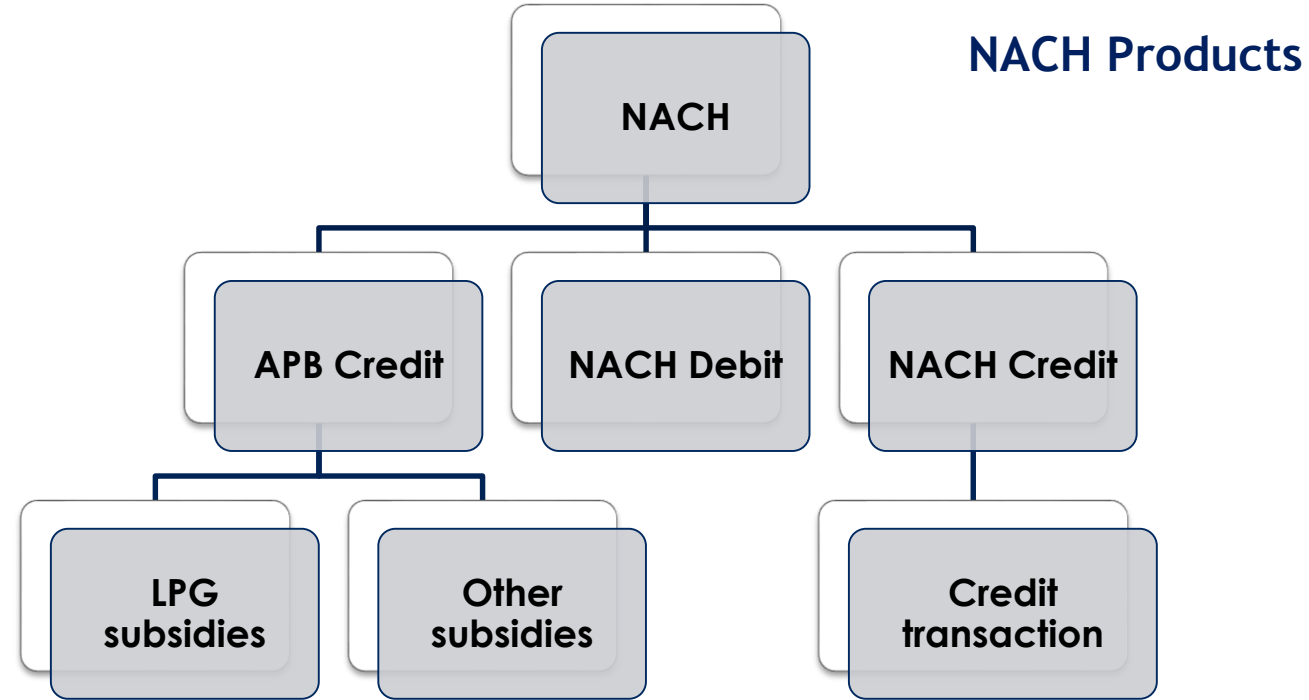


*A Reserve Bank of India (RBI) conceptualised system which offers integrated, accessible and interoperable bill payment services to consumers across geographies with certainty, reliability and safety of transactions.*



- 1. Consumer (Payer) uses any channel for payment
- 2. Bank/Non-bank debits the account, collates information and transmits to NPCI
- 3. NPCI undertakes settlement between BBPOUs and passes the bill information and payment message. Banks and other institutions can be both CUSTOMER OU & BILLER OU
- 4. Utility connected Bank/Non-bank entity sends information to Utilities and credits accounts

## E. National Automated Clearing House (NACH)



### Pointers for NACH

- Used by an institution for affording credit to a large number of beneficiaries
- Single debit to the sponsor bank's account and multiple credits to different destination banks' account
- Capable of processing 10 million transactions per day
- Customized MIS

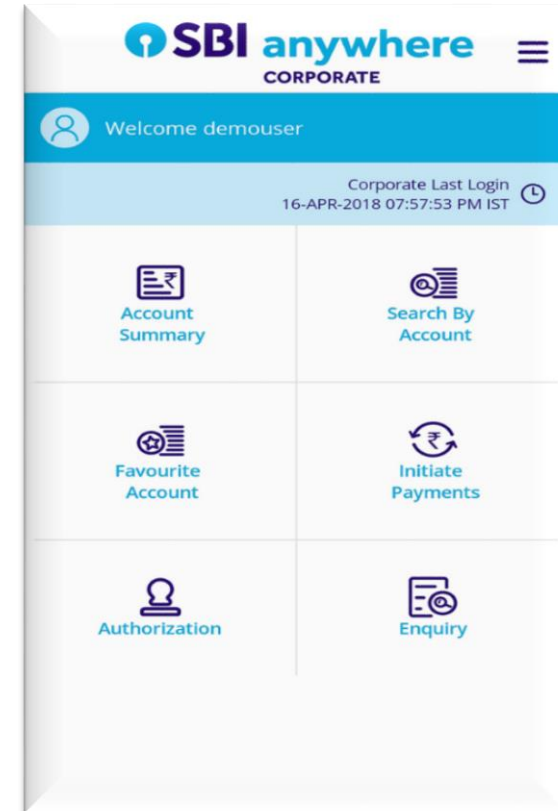


## 04. SBI's Customer facing platforms

# A. SBI Corporate Internet Banking

## Vistaar

- For large corporate customers, & Government organizations.
- Provides access to multiple users to accounts across various branches.
- Corporates can give discretionary financial rights to their users.
- Elaborate user hierarchy with well-defined access / transaction rights.
- **Single transaction limit of Rs.2,000 crores for 3rd party fund transfer**  
**Limit of Rs.10,000 crores for e-tax transactions.**
- **No limit on number of transactions per day.**



# B. SBI Aggregator Services

*The ONLY Bank led & Bank Owned Aggregation services to Clients with strongest Internet Security standards.*

Simple backend integration with you

Consolidated MIS for Multiple Channels

## SB I AGGREGATION SERVICES

- SBI Internet Banking
- Other Banks INB
- SBI Debit Cards
- Other Banks Debit Cards
- UPI
- RTGS/NEFT
- Credit Cards
- Branch



- Existing Clientele**
- Railway Recruitment Board
  - EPFO
  - ESIC
  - State Public Service Commissions
  - IITs/IIMs
  - AIIMS
  - JNU

### Benefits:

- You can pay and receive by using one Channel only
- Single Integration for Multiple Payment Channels.
- Customer convenience.

# D. Prepaid cards

## e-Z pay

Full KYC, reloadable, open loop card with maximum value of Rs. 1,00,000/-

Ideal for making periodical payments like salary, wage, Commission, Social security benefits



## Imprest

Full KYC, reloadable, open loop card with maximum value of Rs. 1,00,000/-

Ideal for Imprest Payment



## Achiever

Full KYC, reloadable, Semi-closed card with maximum value of Rs. 1,00,000/-

Ideal for disbursement of incentives, non-cash awards etc.



## Gift

Non reloadable, Semi-closed card with Maximum value of Rs 10,000/-

Ideal for corporate as well as Individual gifting



## FOREIGN TRAVEL CARD

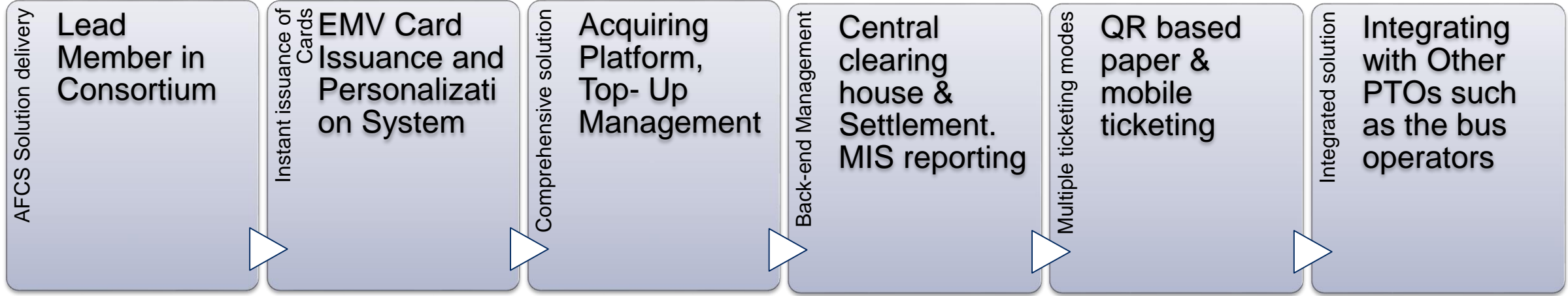
A pre-paid foreign currency card with a value stored in it

Ceiling of USD 2,50,000 p.a./ individual as per Liberalized Remittance Scheme (LRS)

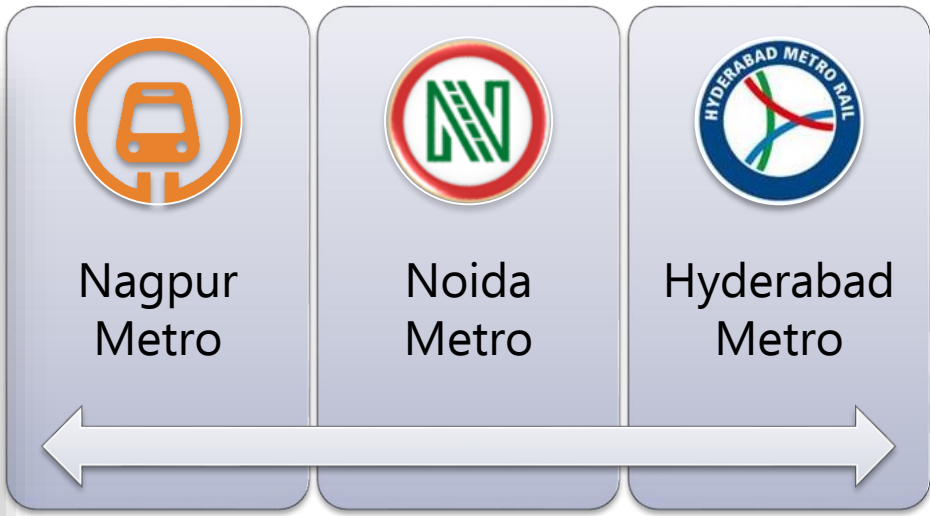
Reduces the need to carry liquid cash-hence greater safety

Available in 9 currencies – AUD, AED, CAD, EURO, GBP, JPY, SAR, SGD, USD

# E. Metro & Transit Solution



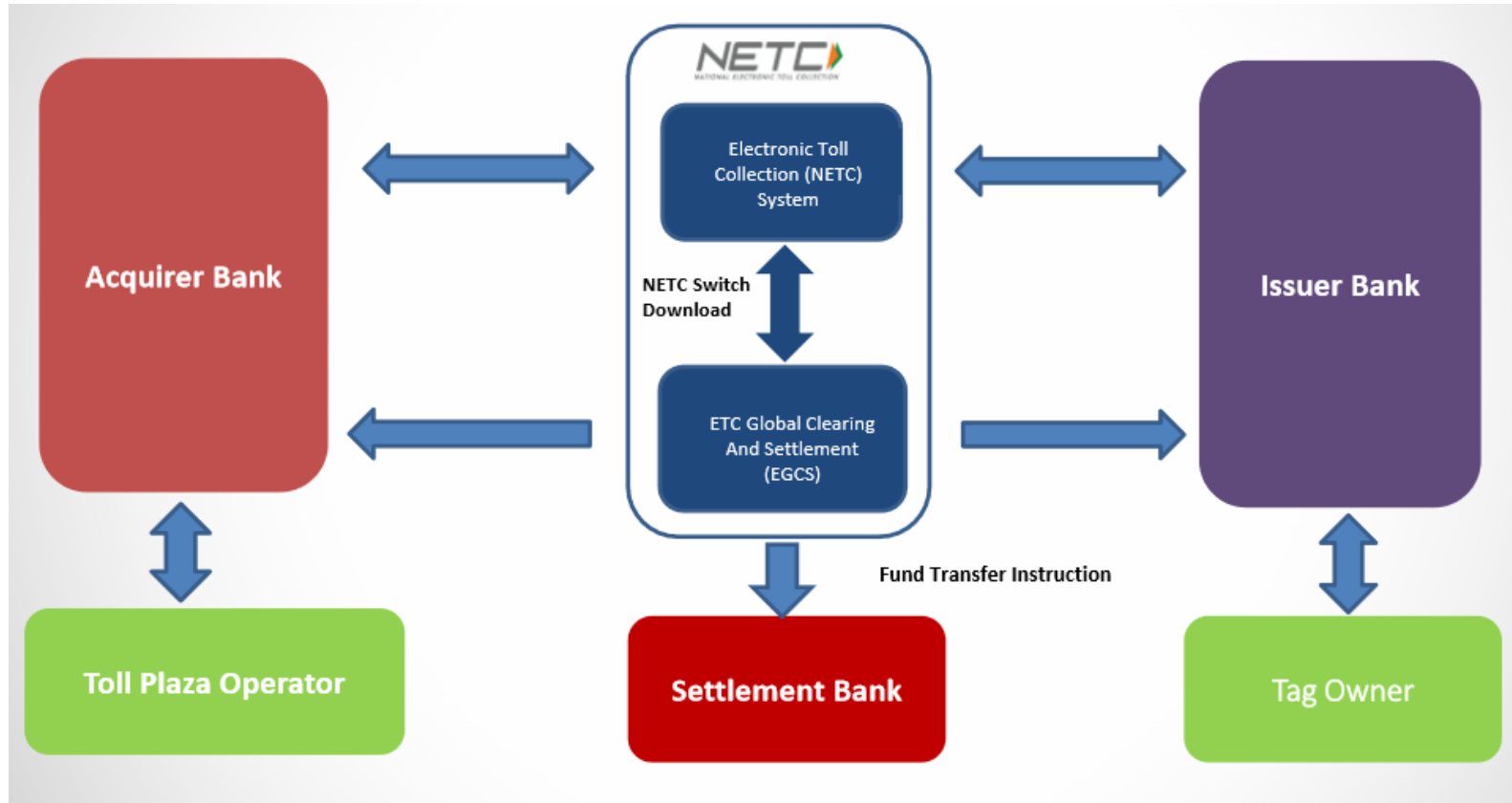
Clientele



- National Common Mobility Card model - One card for all transactions
- Multiple service areas to support operator specific programs like Season Tickets, Smart City Specific application, Loyalty points etc.
- Usage at merchant establishments, e-commerce, transit, toll, parking along with ATM withdrawal facility



# F. FASTag




SRTC Clientele		
UPSRTC (6500)	CTU (250)	UTC (400)
OSRTC (450)	PRTC (250)	SBSTC (500)
Sree Rama Roadways (500)		
OMC Clientele		
IOCL - 12000		
HPCL - 5000		
BPCL - 3000		

- RFID technology for Vehicle identification, classification and connectivity
- RFID sticker will be affixed on vehicle windshield for Electronic Toll collection
- Enables seamless drive through 430 NH toll plazas, at present.
- SBI FASTag facilitates online recharge, SMS alerts, online reports of toll transaction

## 05. Our latest Digital offering..



# A. YONO caters to both Lifestyle and Banking needs

 **Digital bank**  
Banking transactions



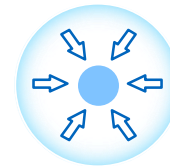
Fund transfer



Bill pay/  
Recharge



Fixed deposit



One view of all  
SBI account

 **Financial Super Store**  
Cross-sell of partner products



Cards




Mutual fund



Insurance



Investment


 **Online Market Place**  
Shopping portal



Shop



Book and  
order

 **E2e Digitisation**  
Of liability and loan processes



Account opening



Personal loans



Home loans



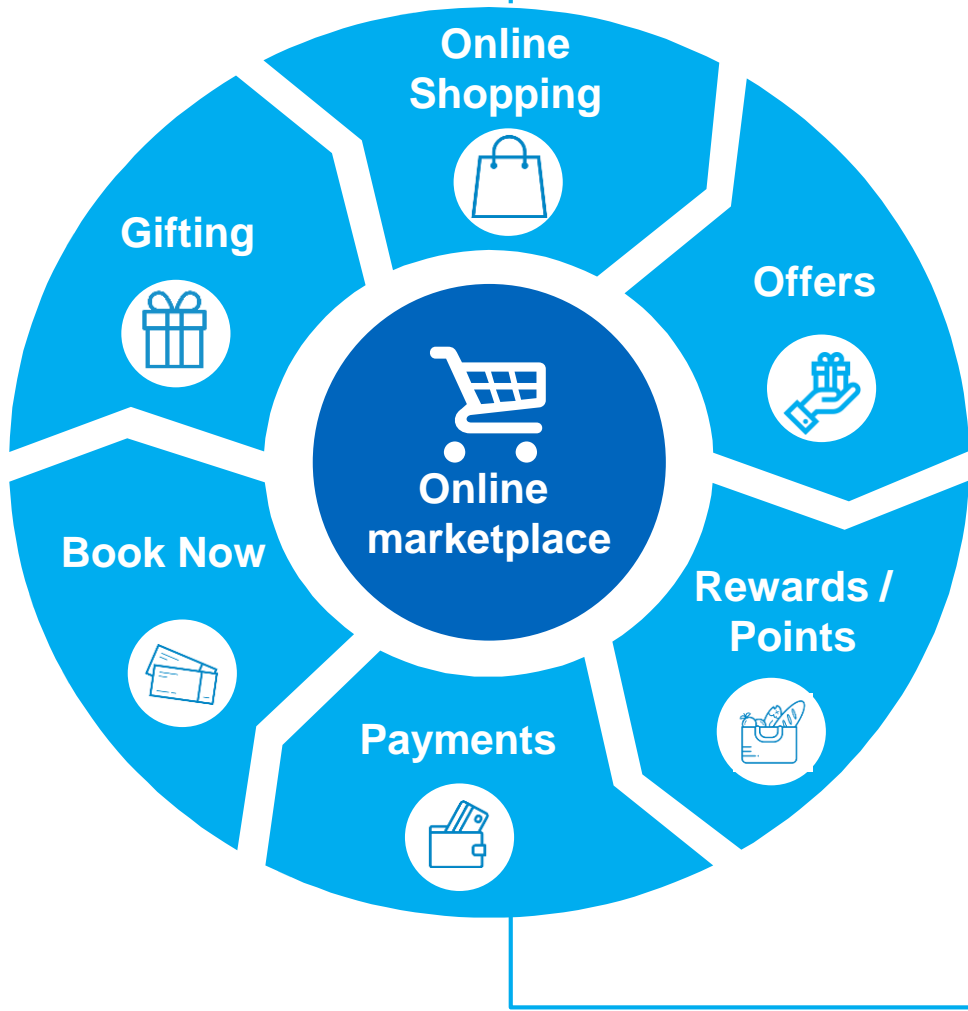
Car loans



Service request centralisation

# B. The YONO marketplace is large, varied and rapidly growing

85+ partners onboarded



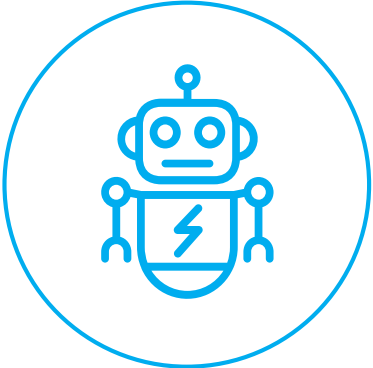
and many more.....



**We are investing in tomorrow's  
technology today...**



# C. We have invested significantly in key technology areas in focus



**Robotics  
process  
automation**



**Moving to Public  
Cloud**



**Data Science**



**Conversational  
Chatbots – voice  
and text**



**Adaptive  
Securities**



**Biometric  
Authentication**



**Open API for  
developers**

# D. The bank is preparing for the next wave of Digital Disruption

**Natural Language Processing**




SBI Intelligent Voice Assistant



Recruitment Automation: Resume Parsing




Alternate Transaction Channel: Alexa




Data Retrieval with Natural Language Query

**Cognitive Computing**




Facial Authentication



Emotion based Feedback System in Branch




Voice Biometrics



Borrower Profile Analysis 360° data capture

**Sound Based Transaction**



Tonetag Engagement



Ultracash

**Blockchain**



Bank Chain



GLS - Nepal to India Rupee remittances



**Fostering environment for  
collaboration and innovation..**

# We are creating an environment to encourage collaboration, partnership and innovation

## Startup Engagement & Investment program



### Solutions created by partnering with start ups

- 7+ start up were engaged to create innovative solutions for providing customers services
  - Digital footprint based customer analysis for SME loans
  - Big Data analytics based end to end solution for loan applicant profile analysis for personal loans



## Student engagement program



### Academic Year 2018-19:

- A total of 177 applications were received from several reputed institutes of India like IITs, IIMs and NIT
- 51 shortlisted for interview
- 22 students selected for Engagement



## Hackathons Conducted



### Over Last 2 years 3 hackathons were conducted

- 6,787 Registrations
- 2,475 Teams participated
- 1,122 ideas received
- 113 prototype created E.g. facial & signature recognition, voice based authentication





## 06. Fostering a healthy relationship SBI & Indian Railways

**Our current engagements**

# A. SBIs ENGAGEMENT WITH INDIAN RAILWAYS



## e Auction & e Freight services

Using SBI Aggregator platform

SBI Aggregator platform facilitates multi-channel payments for e-Freight and e-Auction for Indian Railways.



## Payments related to Recruitments

Using SBI Aggregator platform

SBI Aggregator platform is integrated with Indian Railways for payments related to recruitments. Railway Recruitment Board (Bengaluru), East Coast Railway, Western railways etc being prime examples.



## IREPS

Using SBI Aggregator platform

Indian Railways electronic procurement system uses SBI aggregator platform and allows bidders to pay using various modes - Credit card/ Debit Card or Net Banking. Depending on the option chosen she will be directed to concerned payment interface. The participant/ Bidder is intimated about the success/ failure status and is directed back to the IREPS portal where she can download the acknowledgement/ receipt with unique reference number



## Imprest Cards

Around 10,000 numbers have been made available for coordinating the Railway Station Operations



## B. SBIs ENGAGEMENT WITH INDIAN RAILWAYS

### Installation of POS



Host to Host Integration

As part of digitisation of Indian Railways SBI installed over 9100 PoS terminals at reserved /un-reserved ticket counters, parcel offices and IRCTC canteens. PoS terminals are being used for accepting payments through cards after issuing tickets in the CRIS system. After authorisation of cards number is entered manually in CRIS system. **To removal manual intervention, we have successfully completed host to host integration between our technology service providers (TSPs) and CRIS.** On pilot basis, integration have been rolled out successfully at selected railway stations and will be shortly rolled out across the counters of all railway zones.

Integration of PoS terminals with Railway ATVMs (Automatic Ticket Vending Machines) is also in advance stage for roll out.

### Unreserved Ticketing System (UTS)



- In the first phase, we are providing the UPI collect facility and in the second phase the Bharat QR functionality through BHIM SBIPay.
- For other payment modes, our proposal for onboarding SBI ePay is under discussion.

### Cash Pickup services



Cash pick up services are carried out at 2500+ railway stations under the Hybrid Rail Shakti scheme. Starting from Hajipur (Patna) in Nov '15 we have expanded our services over 10 railway zones; coverage of 6 more railway zones is under planning. We have a pool of empanelled vendors for cash collection, with service level agreements for each railway zone.

## C. SBI's ENGAGEMENT WITH INDIAN RAILWAYS



### Letter of Credit

Inland LC process finalized

Railways to introduce a new payment system for their vendors/contractors. SBI will issue LC to vendors/contractors (Beneficiary) on behalf of Indian Railways (Applicant). Vendors will have a Bank Guarantee that after completion of work, they will be assured of payments within a reasonable time at SBI branches. As huge infrastructural developments are being rolled out by Railways, speedy payments will facilitate healthy relationship with vendors/contractors and increase efficiency of the ecosystem.



### Centralized Salary & Vendor payments

We are in process to deploy a Centralised Integrated Payment System to 216+ Accounting units of the Indian Railways. Server to server integration completed.



### Railway Salary package

A very attractive salary package scheme for Railway employees with various waiver of charges and other benefits are being provided presently. On the anvil is the Pre Approved Loan (PAPL)



## 07. CYBERSECURITY

# A. Relevance of Cyber Security

*“SBI has been instrumental in addressing Cyber Security concerns and has created a Robust Information Security platform.”*

## Elements of cyber security

- Network security
- Application security
- Endpoint security
- Data security
- Identity management
- Database and infrastructure security
- Cloud security
- Mobile security
- Disaster recovery/ Business Continuity Planning
- End-user education

## Some common Cyber-attack types and techniques

Viruses

Malware

Ransomware

SQL Injection Attack

Cross site Scripting

Distributed Denial of Service

Social Engineering

Phishing, Vishing

Threats associated with outsourcing

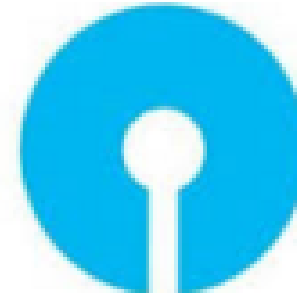
Insider threats



1. **DO NOT** disclose Card/Account numbers
2. **DO NOT** reveal OTP
3. **DO NOT** use common identification passwords such as DOB, Year of Birth, ATM PIN etc.
4. **DO NOT** allow unauthorized use of App
5. Memorize Passwords and **DO NOT** diarize them
6. **DO NOT** respond to unsolicited calls/mails seeking Account details/ OTP/CVV numbers
7. **DO** report suspicious transactions immediately to Bank
8. **DO** set strong password/PIN
9. **DO** change your PIN/Passwords periodically
10. **DO** maintain Confidentiality & Secrecy of UPIN



# Our Approach..



- **Understand your requirement**
- **Structure the Solution using our building blocks**
- **Provide completely customized MIS**



# Thank You

*Single Point of Contact with us:*

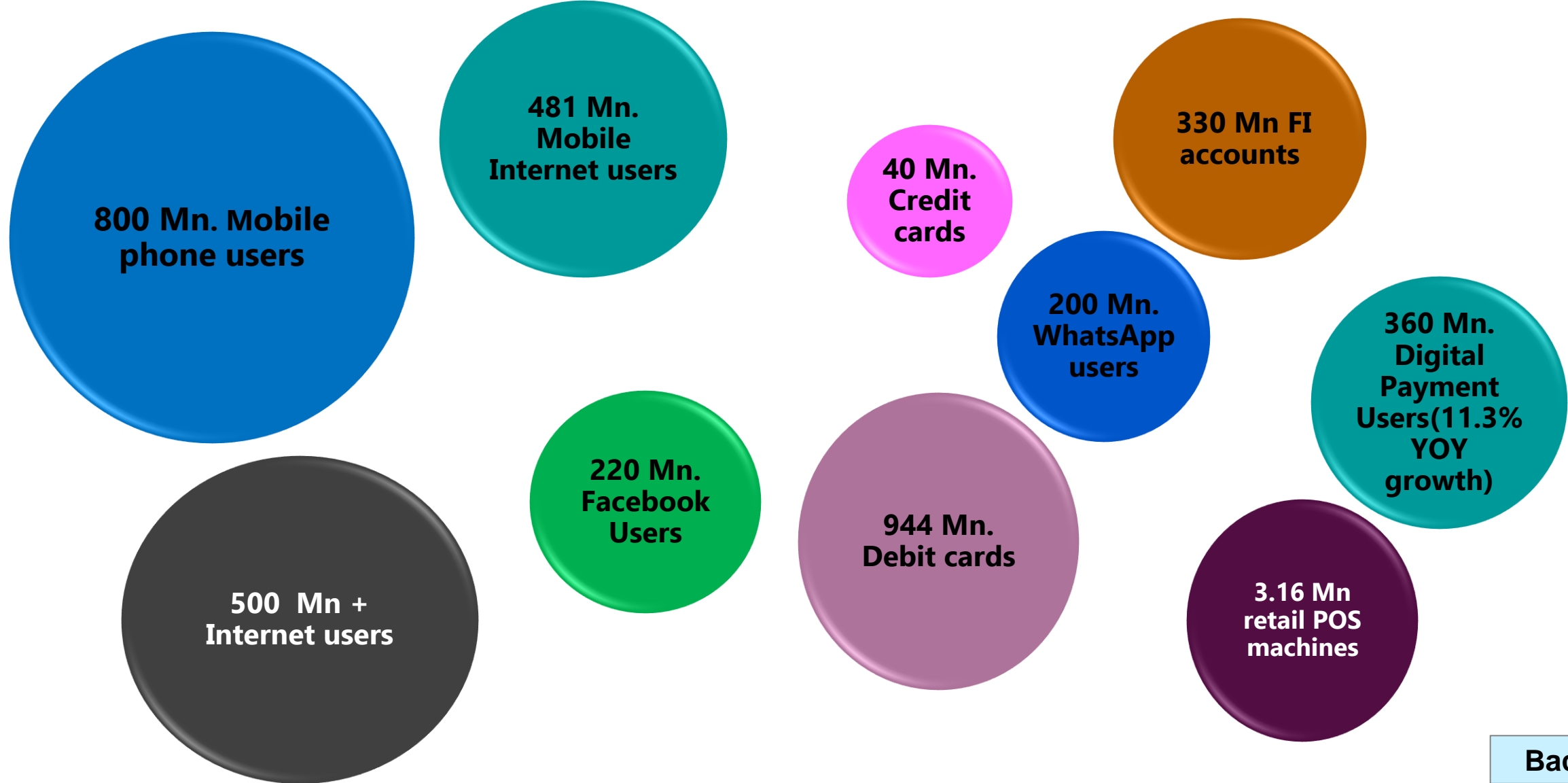
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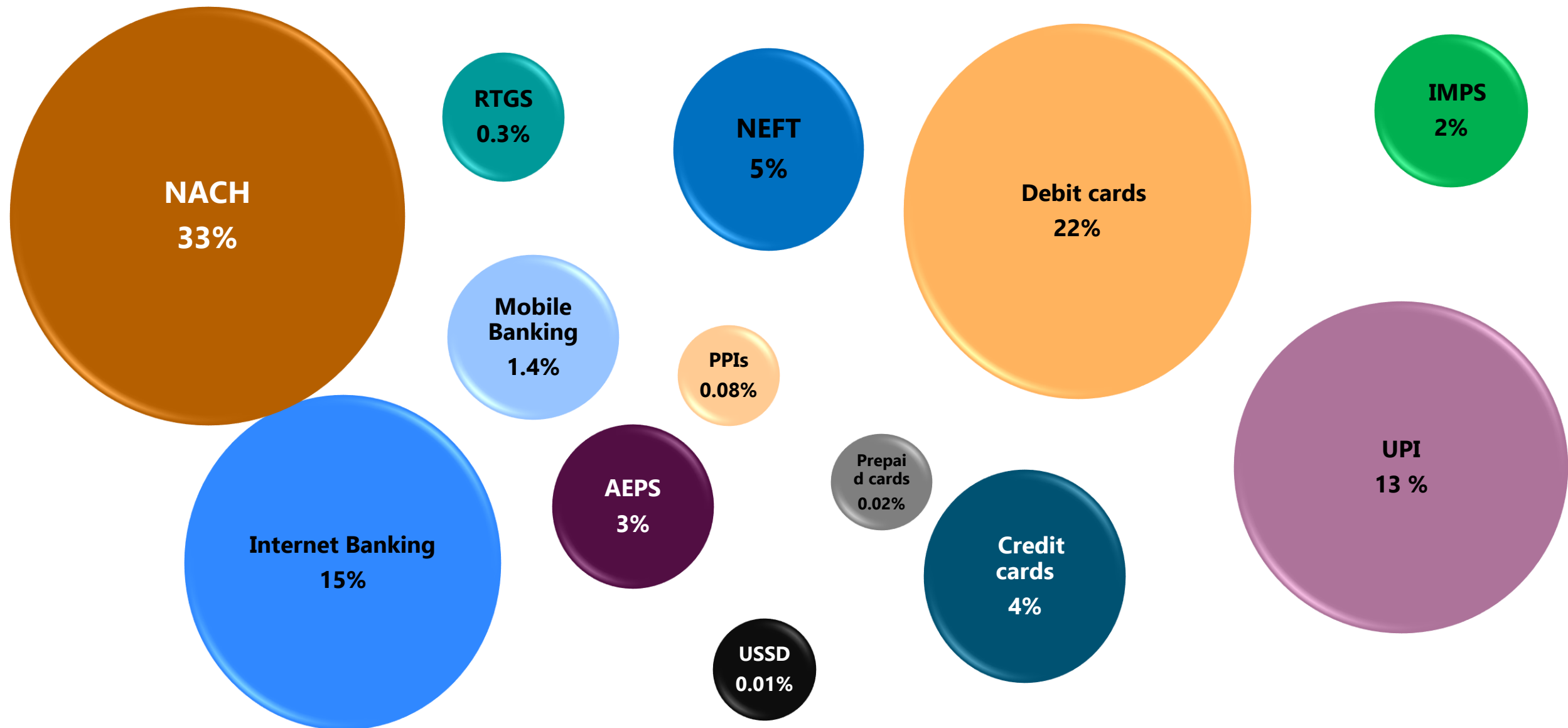
**BackUp slides...**

# Indian Digital Landscape...

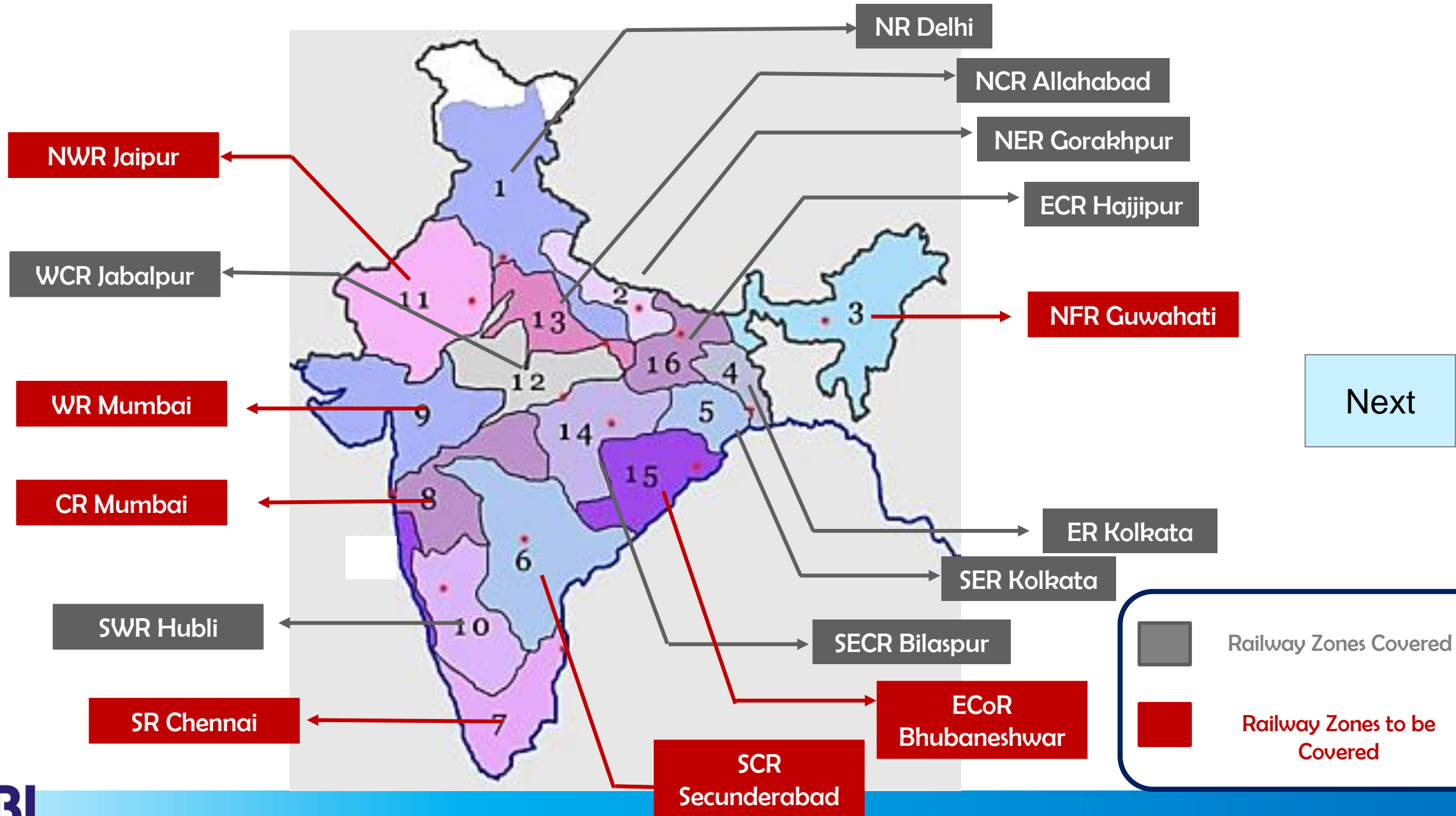


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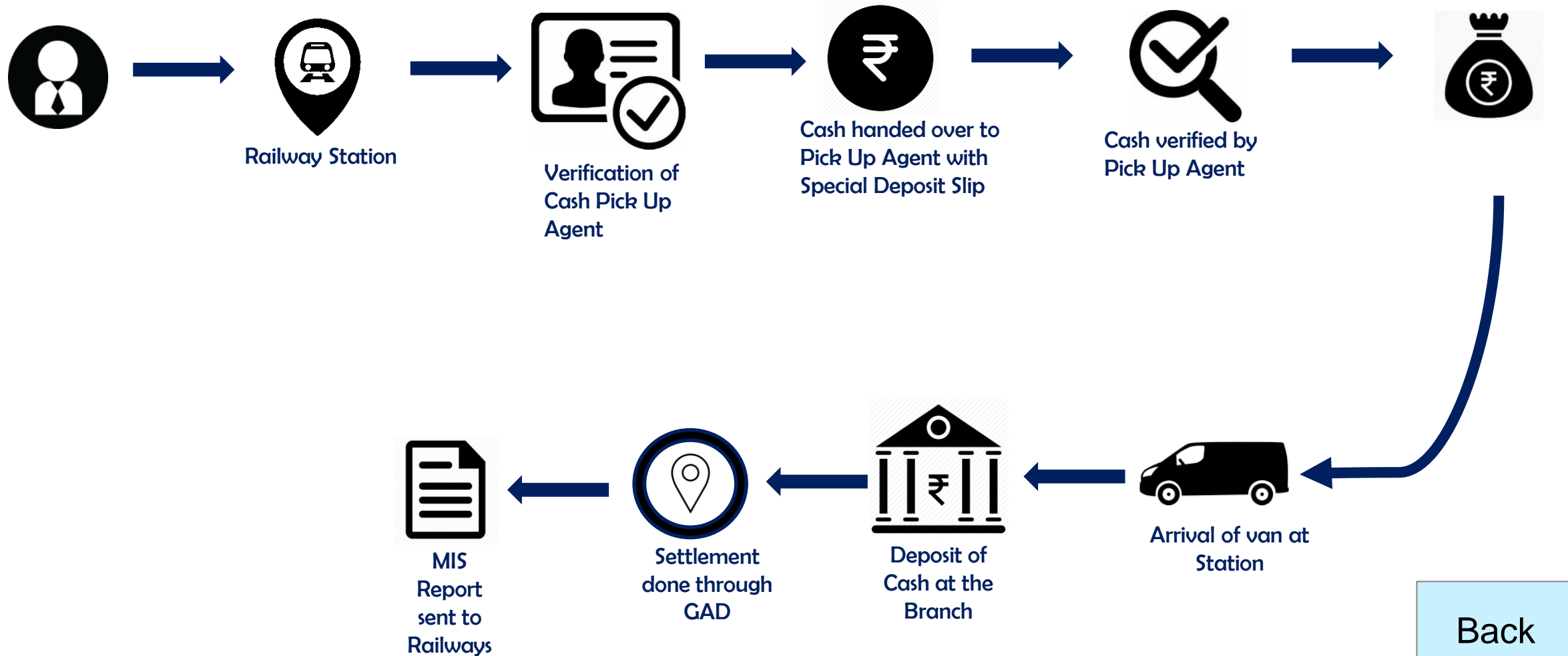
# SBI Digital Payments Landscape...



# C. SBI Cash Pick: Zone-wise Coverage for Indian Railways

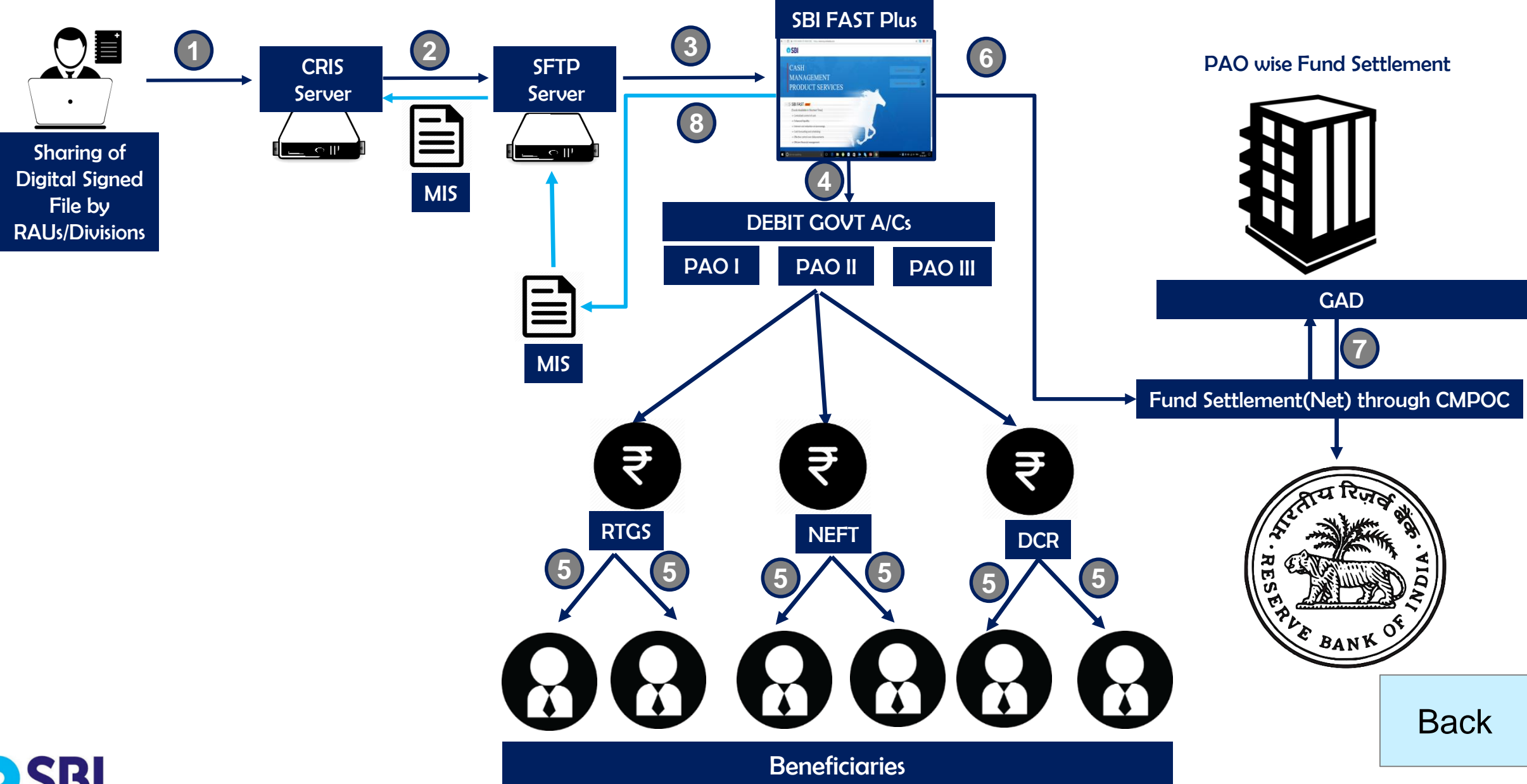


# C-1. Process Flow of Cash Pick Up for Indian Railways





# C-2. Process Flow for Centralized Integrated Payment Solution



Back