Technology led Monetary Transactions leading to Financial Inclusion

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20th National Conference on e-Governance
10th January 2016
Vishakhapatnam

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Content

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- Digital Explosion in Urban India

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What's new in Today's India?

Cashless Economy is reshaping India : My Phone, My Bank and My Wallet…

HUMAN REVOLUTION - BEING DIGITAL

BUILDING THE NEXT GENERATION THROUGH CASHLESS ECONOMY

Pillars of Financial Inclusion

Bank Accounts

Social Security Insurance Schemes

Credit Facility

Jan Dhan

PMJJBY

PMSBY

Crop Insurance

Mudra

Cash

Less Cash

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Digital Explosion in Urban India

Around 167 Mn left unbanked in India…

(In million)

557 — 2011

415 — 2014

167 — 2016
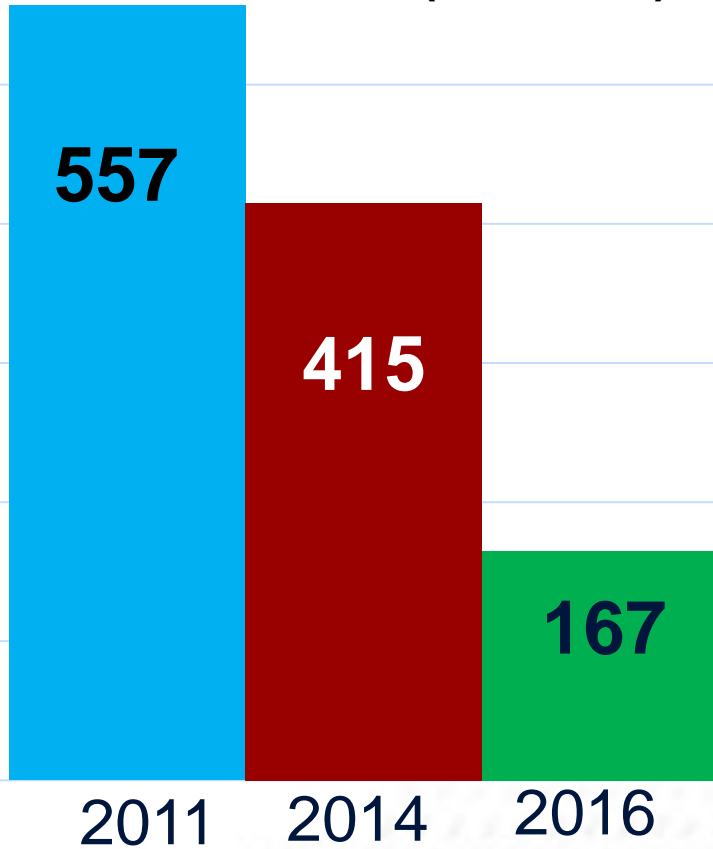
1 B+
Mobile subscribers

1.08 B+
AADHAR
Aadhar enrolments

340 M+
Smart phone users

460 M+
Internet users

Source: http://pmjdy.gov.in/ and PwC Report

Shift from Paper-based to Electronic Transactions: Urban

Paper Clearing transactions (Rs Bn)
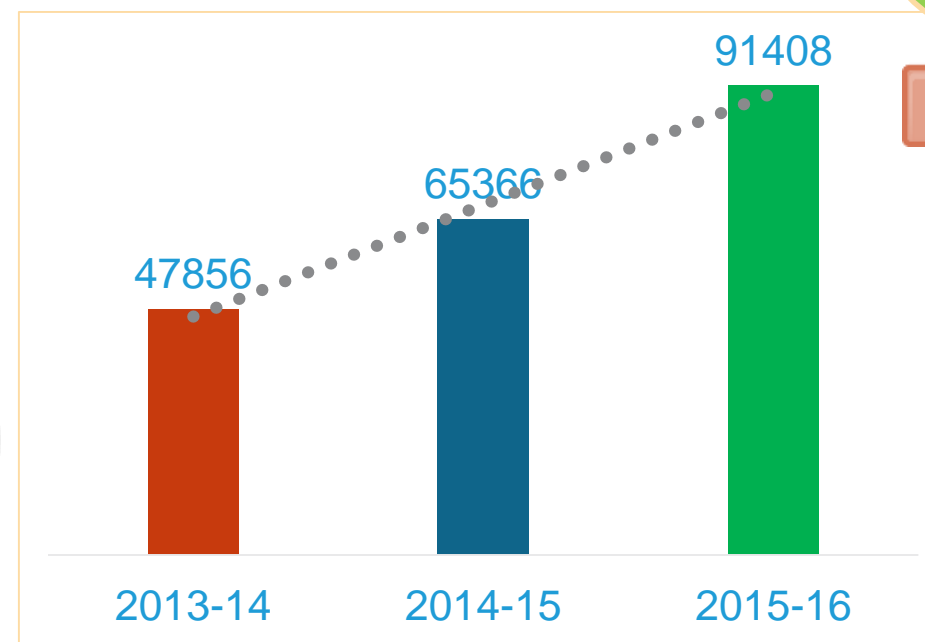
- 6 %
CAGR

93316
2013-14

85439
2014-15

81861
2015-16

Paper based clearing transactions like Cheque are on the decline

Retail Electronic Clearing transactions (Rs Bn)

+38 %
CAGR

47856
2013-14

65366
2014-15

91408
2015-16
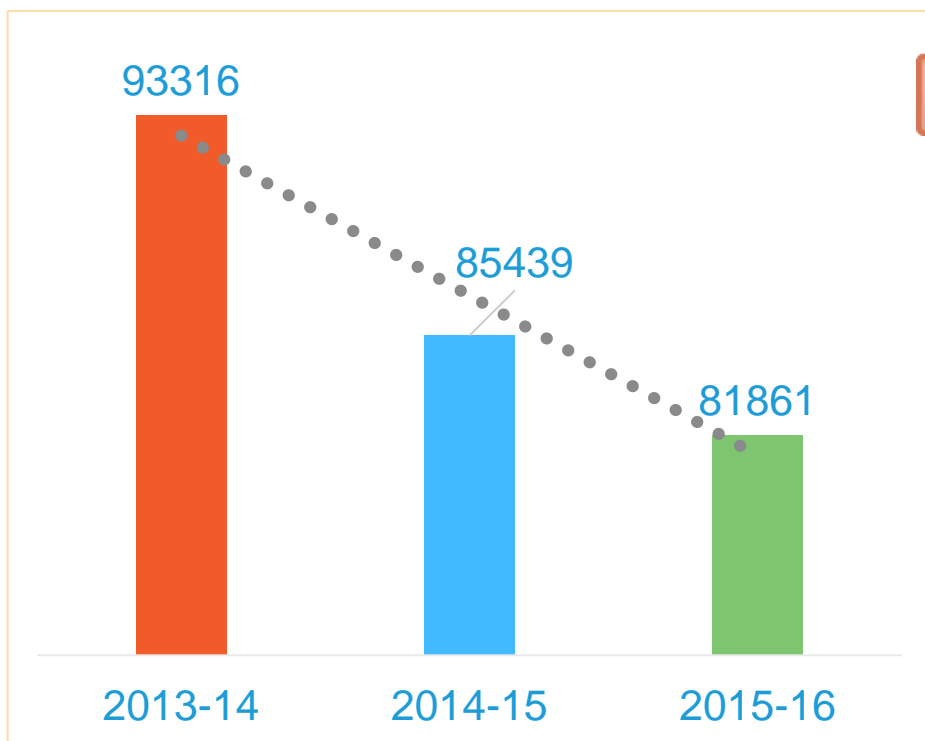
Paper Clearing transactions include Cheque Truncation System, MICR Clearing

Retail Electronic Clearing transactions include ECS, EFT/NEFT, IMPS, NACH

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Gaps in Bringing Rural India under Digital Explosion

- Rural India is yet to be brought under technological revolution due to:
  - ✓ Lack of digital awareness
  - ✓ Lack of understanding of current plans under financial services

- Low Infrastructure:
  - ✓ Only160 m broadband users out of total 1.3 b population. Only 120 m rural Indians have internet connectivity
  - ✓ Average speed of broadband is only 3.5 Mbps. High speed is above affordability
  - ✓ Unavailability of affordable quality power
  - ✓ Sparse population in difficult terrain
  - ✓ Lack of regional content

Cost needs to be put under check to boost ultra broadband infrastructure

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Effects of de-monetization in Financial Inclusion

Post Demonetization in **Urban**

- Added 5 mn users
- Registered 7mn + txns worth 120 Cr in a day.
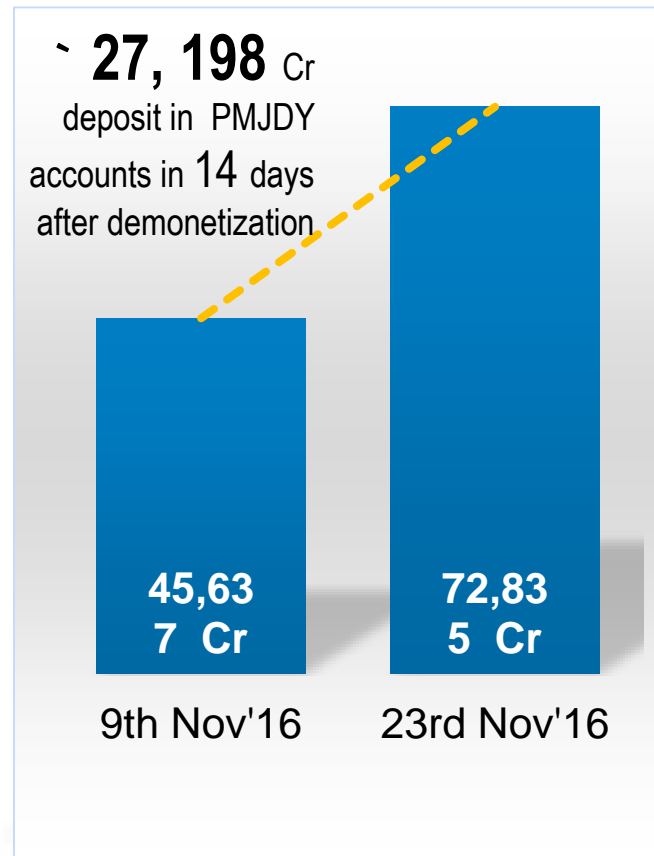
- 12x jump in average balance.

- 1500% increase in recharge in 12 - 15 hrs on Nov10 - 2016.
- Decline in COD payment from 70% to 30%

Post Demonetization in **Rural**

`27, 198 Cr deposit in PMJDY accounts in 14 days after demonetization

45,637 Cr	72,835 Cr
9th Nov'16	23rd Nov'16

Where is the acceptance infrastructure to use Digital money ?

Acceptance Infrastructure highly skewed towards Urban

Delhi, for instance, has 9,070 ATMs, more than Rajasthan, the largest state in terms of size.

Unorganized, cash based rural sector the worst hit.

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Growth Drivers to Boost Technology Led Monetary Transaction

- Applications of Artificial Intelligence (AI) in Credit Processing

- Applications of Blockchain Technology to reach to unreached through Distributed Ledger Technology

- Banking Through Social Media through Robotic Software

- Mobile Wallets/ Payment Banks

- M2M (Machine to Machine) Communication

- Integration of Technologies (eg FMC 2.0: Fixed+Mobile+Content)

- Near Field Communication

- USSD Facility

Few Use Cases of Technology Led Monetary Transactions

Applications of AI in Credit Processing
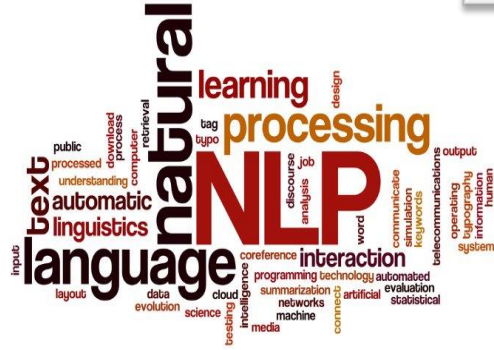
Image Processing

- Document Verification
- Auto generation of reasons for rejection

Video Processing

- Fraud Prevention

Natural Language Processing

- Kind of questions they ask
- Extraction of additional information from their answers
- Tone analysis

I too can speak...

Speech to Text

- Indian accents
- Indian Languages

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Applications of Blockchain Technology in Banking

Distributed Shared Ledger
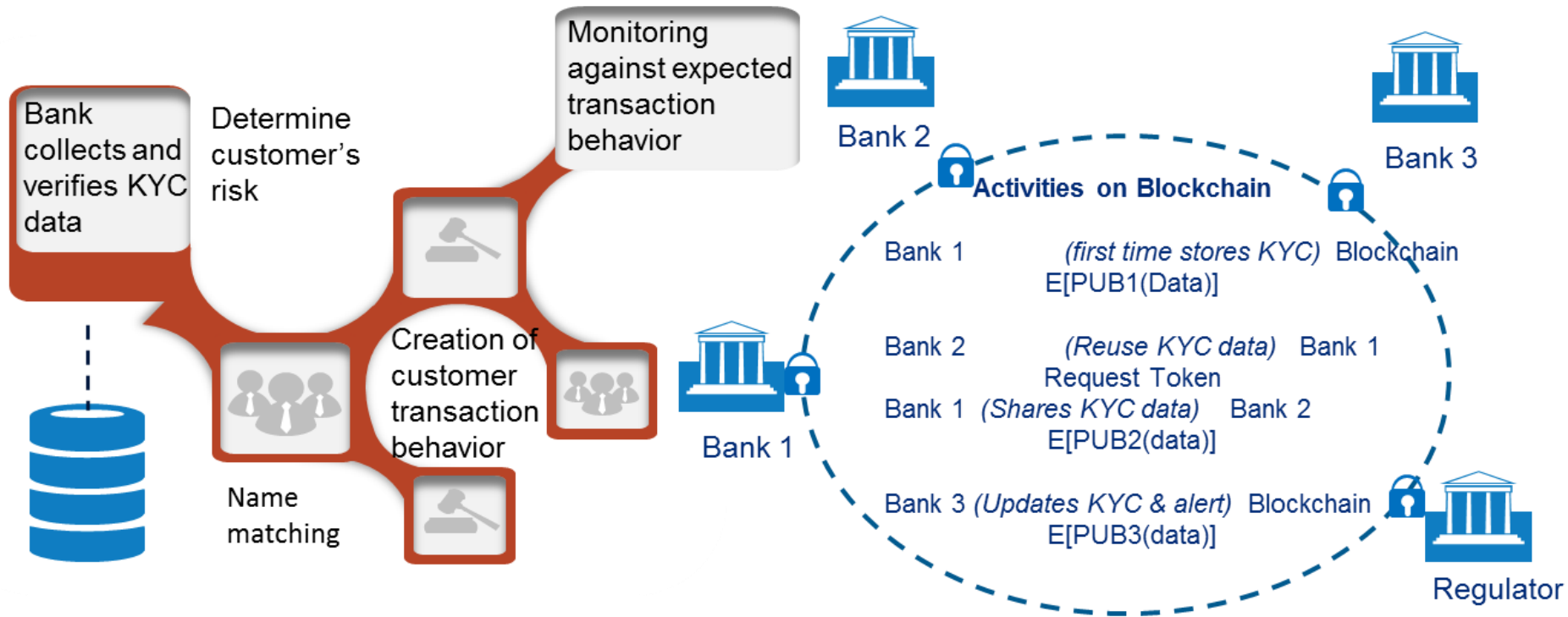
Greater Security and Faster Settlement

Low Cost and Increased Transparency

Saves Operational Costs

electronic transaction-processing and record-keeping system that allows to track information through a secure network, where third-party verification is not needed

Future financial infrastructure through distributed ledger technology would be a powerful tool to deepen Financial Inclusion

Applications of Blockchain Technology for KYC

Activities on Blockchain

Bank 1   *(first time stores KYC)*   Blockchain
$E[PUB1(Data)]$

Bank 2   *(Reuse KYC data)*   Bank 1
Request Token

Bank 1   *(Shares KYC data)*   Bank 2
$E[PUB2(data)]$

Bank 3 *(Updates KYC & alert)*   Blockchain
$E[PUB3(data)]$

Bank collects and verifies KYC data

Determine customer's risk

Monitoring against expected transaction behavior

Creation of customer transaction behavior

Name matching

Bank 2

Bank 3

Bank 1

Regulator

Benefits

Ease of verification

Audit trail available since inception

Saves operational costs and increase revenue

Prerequisite   Align All Banks to join Blockchain and share each instance of KYC on Blockchain

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Software Robotics: Banking through Social Media

Twitter **Facebook** **WhattsApp**

India has 118 million active social media accounts of which 100 million are mobile users

Software robots captures and interpret information from systems, recognize patterns and run business across multiple applications : data entry, validation, message creation, reconciliations, currency exchange processing

Business Processes

- Retail
- Agri-business
- Treasury
- Trade & Forex
- Human Resource

Software Robotics Platform

- AI
- Facial
- Voice Recognition
- Natural Language Processing
- Machine Learning

- **Works on one-time password (OTP) and through first following bank's Twitter handle account and using messages**
- **Users can view account balance by using hashtags**

  - Software robots reduces response time to customers by up to 60%
  - Increased accuracy to 100%
  - Improves bank's productivity and efficiency
  - Security is in line with RBI guidelines

Source: icicibank.com

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Few Use Cases of Government Initiatives

- India Post : Financial Systems Integration (FSI) Program

- India Post: Rural Systems Integration (RSI) Program

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India Post: Financial Systems Integration (FSI)

Goods and Services

Parcel & Mail   Life Insurance

Banking   Remittance

↓

New Goods and Services

Social Security		
Banking	Remittance	Loans
Insurance	Pensions	Subsidies

e-Governance	Healthcare
Utility Bills Licenses	National Portable Health Records
Taxes Aadhaar	

e-Commerce	Retail

INDIA POST
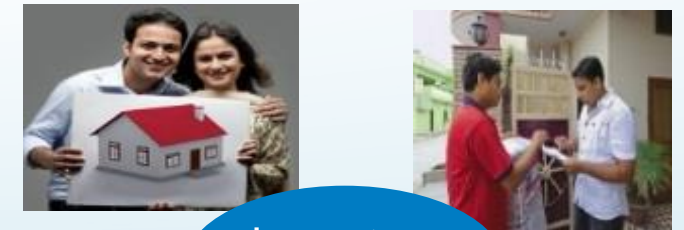Supply chain for services and goods

After Digitization

AADHAAR

Migrants, Seniors, Unbanked

↓

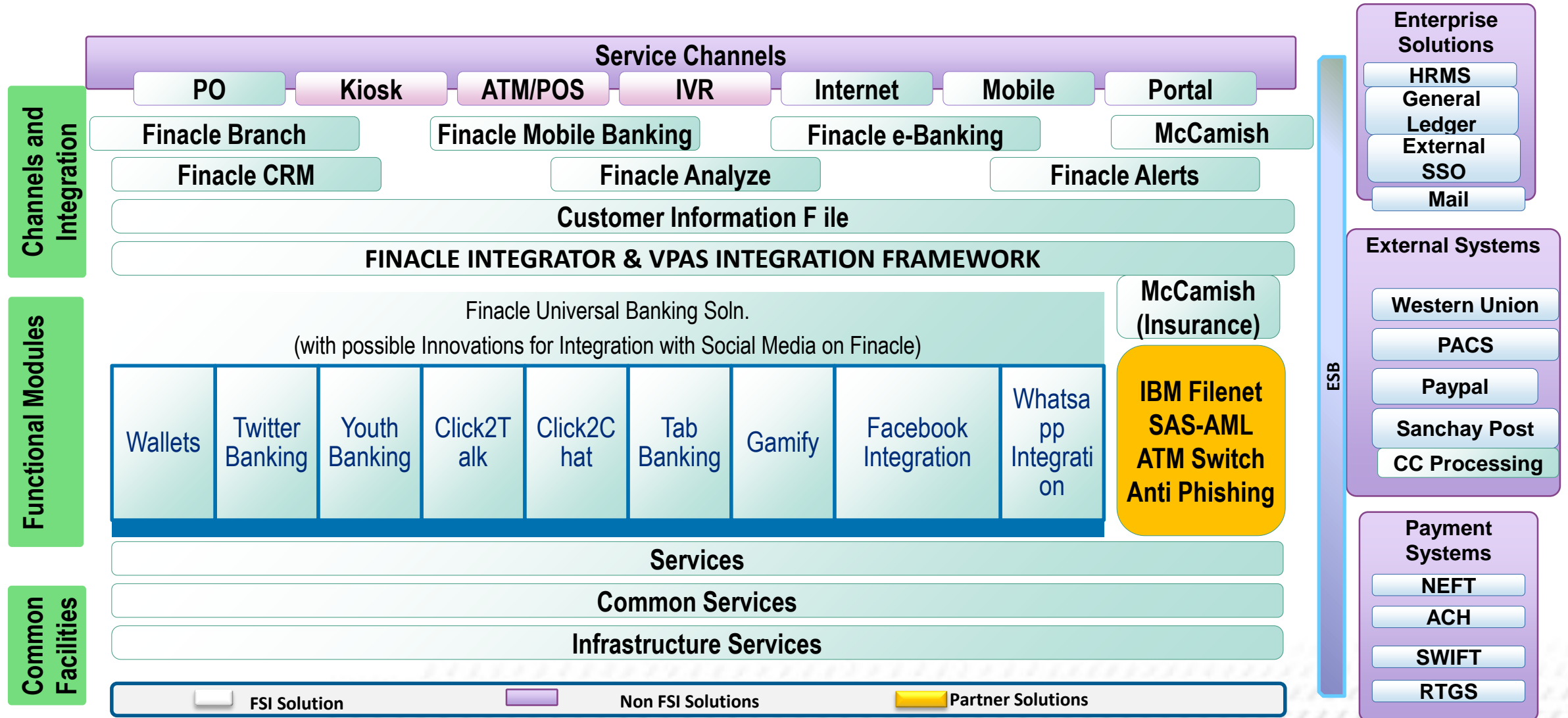**More Citizens**

Impact on Society

Existing customers
Online Shoppers
Urban + Rural Middle Class / Taxpayers

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India Post: Financial Systems Integration (FSI) Landscape

India Post: Rural Systems Integration (RSI)

RSI (Rural System Integration) program aims to provide technology solution through RICT handheld device supplied to BPMs (Branch Post Master) of India Post

Rural Post Offices - BEING DIGITAL

Enables 130,000 Extra Departmental Post Offices to improve level of services being offered to rural customers

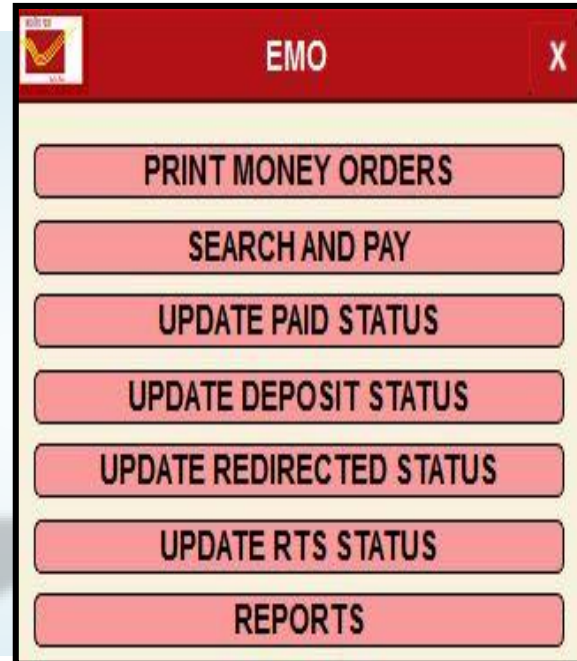One BO covers avg population of 5k+, 20+sq km area

RSI Applications

MGNREGS

eMO

BPM Device Management

Service Delivery Platform (SDP)

RSI: electronic Money Order (eMO) Disbursement

EMO	X
PRINT MONEY ORDERS	
SEARCH AND PAY	
UPDATE PAID STATUS	
UPDATE DEPOSIT STATUS	
UPDATE REDIRECTED STATUS	
UPDATE RTS STATUS	
REPORTS	

BPM logs into Device using RSI Biometrics

eMO Client App Menu

eMO Disbursement List

Delivery Agent

eMO Disbursement

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RSI: MGNREGS Disbursement

BPM Logs into Device

MGNREGS Client App Menu

Beneficiary Biometric validation

FSI CBS - Finacle Update

Wage Disbursement
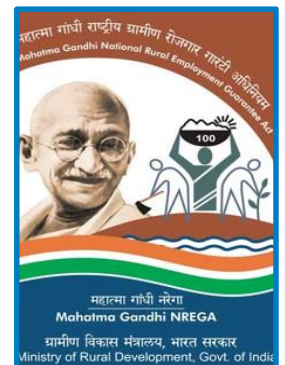
Central Application

Sync

Beneficiary Enrolment Details
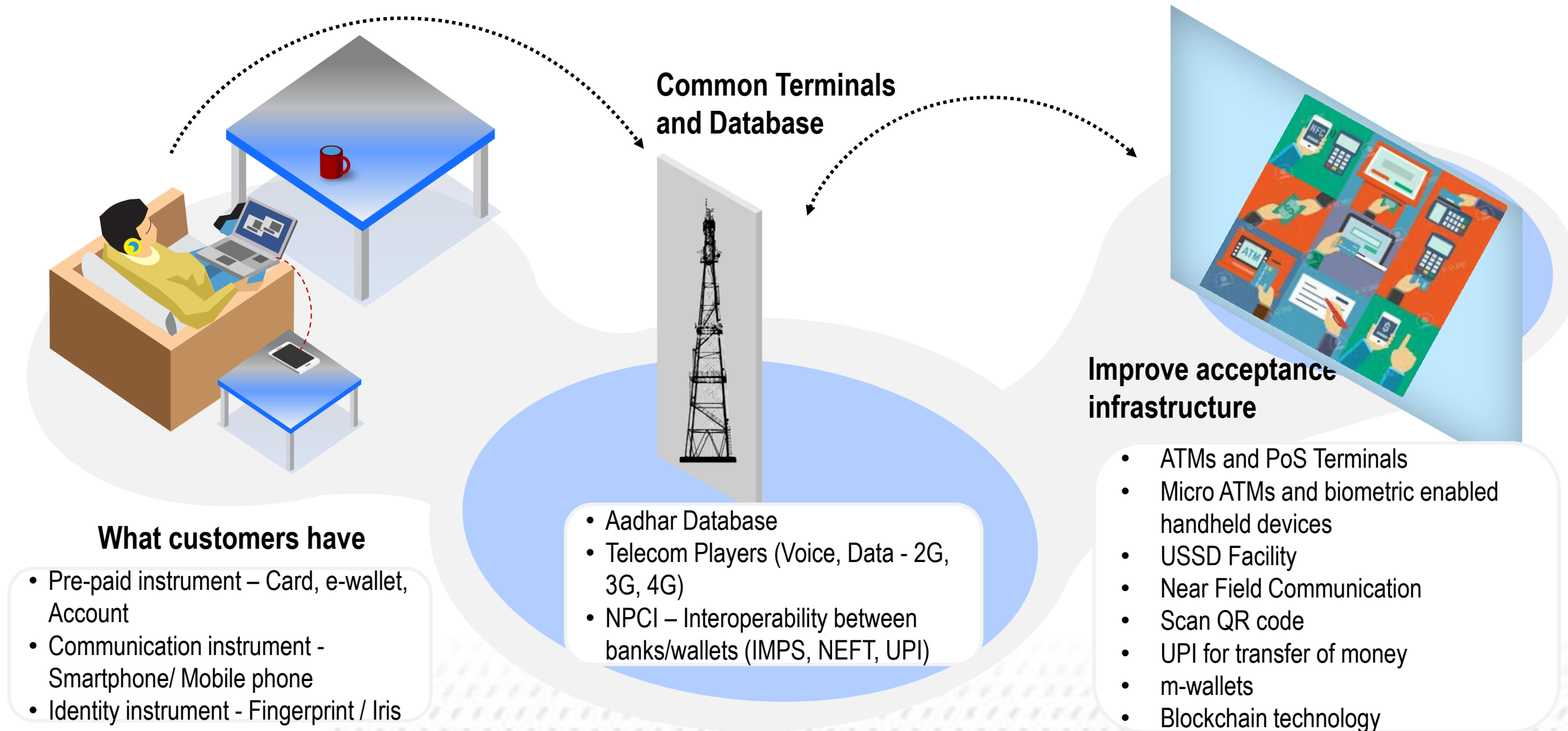
Beneficiary Wage Disbursement Details

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Social and Business Impact of FSI/RSI Programs

- Core Banking Solution – Anywhere Anytime Banking

- Wider reach – Connects 130,000 Branch Post Offices

- Better services – Accountability, Right Beneficiary, Fast & Accurate

- Financial Inclusion – Banking to Unbanked

- Empower Rural Post Offices through technology – **Minimum Government and Maximum Governance**

- Growth through new lines of business and increased revenue in DOP

Benefits of social welfare reach to beneficiaries in right proportion & right time

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Few Recommendations

Distribution Technologies for Simplified Transactions

Common Terminals and Database

Improve acceptance infrastructure

What customers have

- Pre-paid instrument – Card, e-wallet, Account
- Communication instrument - Smartphone/ Mobile phone
- Identity instrument - Fingerprint / Iris

- Aadhar Database
- Telecom Players (Voice, Data - 2G, 3G, 4G)
- NPCI – Interoperability between banks/wallets (IMPS, NEFT, UPI)

- ATMs and PoS Terminals
- Micro ATMs and biometric enabled handheld devices
- USSD Facility
- Near Field Communication
- Scan QR code
- UPI for transfer of money
- m-wallets
- Blockchain technology

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Recommendations to Boost Financial Inclusion

1

Incentives for e-Payments

Instead of Convenience charges, Govt. should offer incentives to people to use electronic payments across the channels – POS, internet and mobile. Govt. should recover the cost through other benefits.

2

Mandate Govt. transactions to e-payments

All govt. agencies should accept electronic payments. There should be a mandate that all payments made by Govt. above certain amount should be through e-payments.

3

Incentivize Banks

Govt. should also bring other subsidies such as Food subsidy, Fertilizer subsidy under DBT to bank accounts. It will help the banks to increase CASA.

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Recommendations to Boost Financial Inclusion

4

Improve Financial Awareness

Financial awareness needs to be increased. People are not aware of many available financial products like USSD banking, Scan QR code, insurance cover in PMJDY, etc.

5

Incentivize Post Masters and BCs.

BCs and Post Masters need to be incentivized for the products, services he provides. Enhance ranged of products/services they can provide. There are 6 lac+ villages. Appoint 2 BCs per village and pay them the basic wages under MGNREGA.

6

Improve inter-operability

Multiple players should act together. Inter-operability of the services should be improved between BCs, Post Officers, Telecom players.

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Recommendations to Boost Financial Inclusion

7   **Intuitive Ux/UI Design to eliminate language barriers**

Language is the next barrier to include untapped portion of Financial Inclusion. Easy intuitive UI/ Ux can eliminate the language barriers

8   **Support Aggregators & Fin-tech Players**

Govt. should support the startups by providing ease of doing business and make start-up friendly policies.

Regulation and aggregation in the unorganized industries lead to electronic payments. Eg. Bookmyshow – Movie tickets, Paytm – Recharge,

Fin-tech players taking the lead in bringing under-banked population online. Eg. mRUPEE/ItzCash and Oxygen, Airtel Money, Vodafone M-Pesa

9   **Discourage Cash-On-Delivery**

Restricting the Cash on Delivery only to new users and formal, transparent return policy by e-commerce companies could lead to further growth.

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Future of Digital Payments

- Digital payments in India expected to touch US$ 500 billion by 2020 and contribute 15% of GDP

- Contribution of non-cash mode of payments, expected to be doubling to 40% of the customer payment segment by 2020

- Indian m-wallet market is expected to grow at a compounded annual growth rate (CAGR) of 141% to reach INR 30,000 crore by the end of 2021-22

- Only 1.2 million point-of-sale (POS) terminals in India, for example, compared to 13 million in the US (2 POS devices to be deployed in 1 lakh villages with population of less than 10,000)

Financial Inclusion → Meets Social Needs

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Thank You

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