Technology led Monetary Transactions leading to Financial Inclusion

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Content

- What’s New in Today’s India
- Digital Explosion in Urban India
- Gaps in Bringing Rural India under Digital Explosion
- Growth Drivers to boost Technology Led Monetary Transactions
- Initiatives by Government on Technology Led Monetary Transactions
- Few Recommendations
What’s new in Today’s India?

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

Pillars of Financial Inclusion

- Bank Accounts
  - Jan Dhan

- Social Security Insurance Schemes
  - PMJJBY
  - PMSBY
  - Crop Insurance

- Credit Facility
  - Mudra
Digital Explosion in Urban India

Around 167 Mn left unbanked in India...

Source: http://pmjdy.gov.in/ and PwC Report
Shift from Paper-based to Electronic Transactions: Urban

Paper Clearing transactions (Rs Bn)

<table>
<thead>
<tr>
<th>Year</th>
<th>Paper Clearing transactions (Rs Bn)</th>
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<tbody>
<tr>
<td>2013-14</td>
<td>93316</td>
</tr>
<tr>
<td>2014-15</td>
<td>85439</td>
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<tr>
<td>2015-16</td>
<td>81861</td>
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</table>

-6% CAGR

Paper Clearing transactions include Cheque Truncation System, MICR Clearing

Retail Electronic Clearing transactions (Rs Bn)

<table>
<thead>
<tr>
<th>Year</th>
<th>Retail Electronic Clearing transactions (Rs Bn)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013-14</td>
<td>47856</td>
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<tr>
<td>2014-15</td>
<td>65366</td>
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<td>2015-16</td>
<td>91408</td>
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</tbody>
</table>

+38% CAGR

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

Paper based clearing transactions like Cheque are on the decline
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:
  ✓ Only 160 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

Source: Rising Connected Consumer in Rural India: BCG Report and #IndiabroaderwayForum
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

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.

Source: BGR, Business Standard, Business Insider

Source: DnaIndia, PMJDY, Indian Express
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

Speech to Text
- Indian accents
- Indian Languages
Applications of Blockchain Technology in Banking

- Distributed Shared Ledger
- Greater Security and Faster Settlement
- Low Cost and Increased Transparency
- Saves Operational Costs

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

electronic transaction-processing and record-keeping system that allows to track information through a secure network, where third-party verification is not needed.
Applications of Blockchain Technology for KYC

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
Software Robotics: Banking through Social Media

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

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

**Business Processes**
- Retail
- Agri-business
- Treasury
- Trade & Forex
- Human Resource

**Software Robotics Platform**
- AI
- Facial Recognition
- 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 reduce 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
Few Use Cases of Government Initiatives

- India Post : Financial Systems Integration (FSI) Program
- India Post: Rural Systems Integration (RSI) Program
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
- Utility Bills
- Licenses
- National Portable Health Records
- Aadhaar

e-Commerce
- Taxes
- Retail

INDIA POST
Supply chain for services and goods

After Digitization

Migrants, Seniors, Unbanked
More Citizens

Impact on Society
Existing customers
Online Shoppers
Urban + Rural Middle Class / Taxpayers
India Post: Financial Systems Integration (FSI) Landscape

Service Channels
- PO
- Kiosk
- ATM/POS
- IVR
- Internet
- Mobile
- Portal

Channels and Integration
- Finacle Branch
- Finacle Mobile Banking
- Finacle e-Banking
- McCamish
- Finacle CRM
- Finacle Analyze
- Finacle Alerts

Customer Information File
- FINACLE INTEGRATOR & VPAS INTEGRATION FRAMEWORK

Functional Modules
- Wallets
- Twitter Banking
- Youth Banking
- Click2Talk
- Click2Chat
- Tab Banking
- Gamify
- Facebook Integration
- WhatsApp Integration
- IBM Filenet
- SAS-AML
- ATM Switch
- Anti Phishing

Common Services
- Common Services

Services
- General Ledger
- External SSO
- Mail

Payments Systems
- Western Union
- PACS
- Paypal
- Sanchay Post
- CC Processing

FSI Solutions
- NEFT
- ACH
- SWIFT
- RTGS

Non FSI Solutions
- Partner Solutions

Common Facilities
- FSI Solution
- Non FSI Solutions
- Partner Solutions

FINACLE INTEGRATOR & VPAS INTEGRATION FRAMEWORK

IBM Filenet
SAS-AML
ATM Switch
Anti Phishing

Finacle Universal Banking Soln.
(with possible Innovations for Integration with Social Media on Finacle)

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

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.

Rural Post Offices - BEING DIGITAL

RSI Applications
- MGNREGS
- eMO
- BPM Device Management

Service Delivery Platform (SDP)
RSI: electronic Money Order (eMO) Disbursement

BPM logs into Device using RSI Biometrics

eMO Client App Menu

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

eMO Disbursement List

Delivery Agent

eMO Disbursement
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
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
Few Recommendations
What customers have

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

Common Terminals and Database

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

Improve acceptance infrastructure

- 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

Distribution Technologies for Simplified Transactions
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.
**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.
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.
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)

Source: Data as per IBEF and Gadgetsnow website. Times of India, dated 9th Dec’16
Thank You