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The Future of India’s Digital Payments and Cashless Economy | July 2019

The Future of India's Digital Payments and Cashless Economy

Contents

Foreword - CII

Ashutosh Chadha
Chairman
Digital & Cashless Economy
Conference 2019 and
Vice President & Head South Asia
Public Policy & Government Affairs
Mastercard

The Reserve Bank of India and the Government have provided a clear vision for encouraging digitization of payments and enhancing financial inclusion for India in the coming 3 years.

In this theme paper, we have sought to drive the discussion forward by bringing to attention certain highlights of the RBI Vision 2019 – 2021 for Payment and Settlement Systems in India, as well as inputs from RBI committees such as the Committee on Deepening of Digital Payments (CDDP). The RBI envisages to achieve "a highly digital and cash-lite society" through the goal posts of competition, cost effectiveness, convenience and confidence (4Cs).

It is critical that all stakeholders namely, the Government, RBI as well as the industry come together to deliberate on recommendations from a policy, program and implementation perspective to enable the goals of a less cash society are met.

Without doubt this will provide a great impetus to Digital India, driving transparency and efficiency and greater contribution to our GDP growth.

Foreword – Panacea Infosec

Ajay Kaushik
CEO and Founder
Panacea Infosec Pvt Ltd

Citizen empowerment via a digital economy is the key agenda for the Government. These coming five years will be critical in transforming India from a cash-first to a less-cash society.

The entire digital payments ecosystem needs to be optimized to drive financial inclusion: regulators, banks, payment providers, processors, merchants and customers.

In the CII-Panacea Infosec paper titled 'The Future of India's Digital Payments and Cashless Economy', we explore India's digital payments landscape in the context of the Reserve Bank of India and Government's initiatives which seek to address the issues of financial inclusion and market readiness to reach all Indians.

We also explore recommendations aimed at meeting the RBI Vision 2021 goals and how national initiatives such as smart cities can serve as catalysts for citizens to move from cash-first to less-cash modes.

Introduction

"Our dream is that there should be a cashless society.
This is correct that 100% cashless society is never possible. But we can make a start with less-cash society, then cashless society will not be a far-off destination"

- Narendra Modi, Hon Prime Minister of India (Mann Ki Baat, Nov 2016)

India is at the cusp of a digital revolution which will fundamentally transform the way people live, work, communicate and socialize. The Government has provided the necessary thrust to people to shift to digital platforms to fulfil its vision of a digital economy. Initiatives of the Indian Government such as Digital India will help provide the digital infrastructure that is required to transform India into a digitally empowered society and knowledge economy.

The Ministry of Electronics and Information Technology (MeitY) envisions "Paperless, Faceless and Cashless" payments services across the country with a common e-governance infrastructure providing end-to-end transactional experiences for citizens, businesses and government. The foundation for the successful implementation of various services is now ready in the form of UID, Jan Dhan accounts, mobile connections, digital wallets, payment banks, BharatQR and unified payment interface among others.

The Smart Cities Mission builds on the digital platform to add convenience, mitigate inefficiencies, and provide transparency to citizen services. To ease such a transition, the Govt of India has launched multiple initiatives to encourage cities to reduce cash usage. The cities in turn, incentivize digital payments to encourage citizens to reduce cash usage.

However, in order to ensure the aforementioned benefits reach even the most far-flung areas of the country, further ground work needs to be done. Payment innovations need to move beyond smart apps, enable offline transactions and cover previously uncovered geographical areas, to function as gateways to true Digital Financial Inclusion.

The RBI Vision 2019 – 2021 for Payment and Settlement Systems in India lays out clear guidelines of new policies to enhance competition, reduce costs, create convenience, financial inclusion, and build confidence in digital payments. In this theme paper, we discuss how these 4 critical goals can be reached, the challenges faced by stakeholders, as well as recommendations addressing these challenges, including inputs of the High-Level Committee on Deepening of Digital Payments.

Current State of Digital Payments in India

The Digital Payments ecosystem in India has made tremendous progress in recent years. This growth has been driven by the availability of payment services from the Government and banking sector. Additionally, digital payments have emerged as the means for receiving Government benefit payments and salaries in the organized sector. The Committee on Deepening of Digital Payments (CDDP) notes that over the past 5 years, the utilization of digital payments has increased tenfold.

The Reserve Bank of India (RBI), as well as the Ministry of Electronics and Information Technology (MeitY) collect and publish data pertaining to payment systems. MeitY being the Nodal Agency for Digi Dhan Mission includes digital payment elements like RTGS, NEFT, NACH, IMPS, BHIM UPI, BHIM Aadhaar, NETC, AEPS, Credit Cards, Debit Cards, PPIs, Mobile Banking, Internet Banking, Closed System PPIs and Others.

The RBI collects data for the systems along with Paper Payment Systems [Cheque Truncation System (CTS), Express Cheque Clearing System (ECCS)]. With the data from these organizations, a simple metric can be utilized to measure India's Per Capita Transaction Volumes.

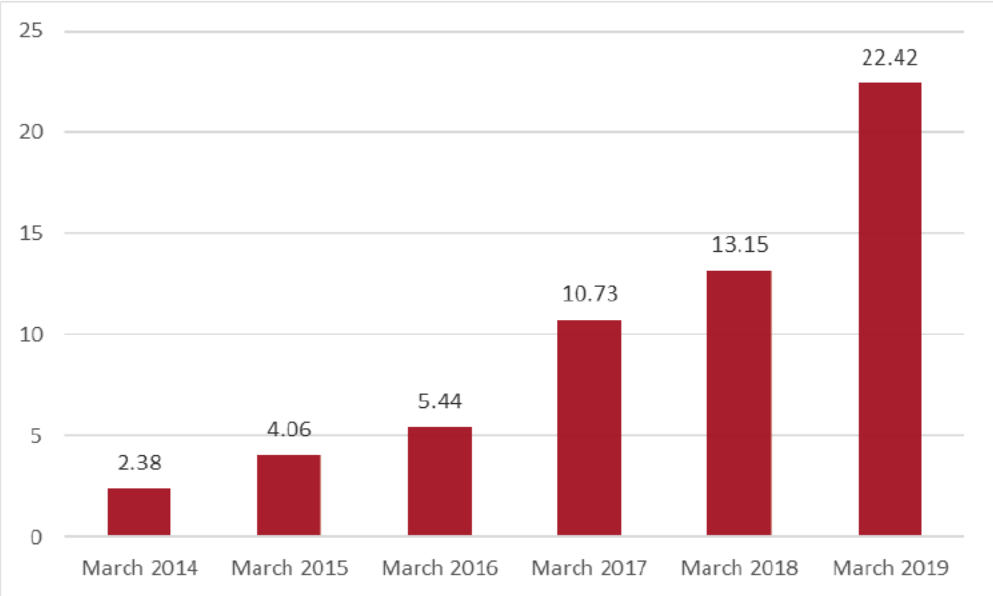


Figure 1: Digital Payments Per Capita (India)[1]

Seeing as the number of Digital Transactions Per Capita was 22 as of March 2019, India's digital payment ecosystem is still in a relatively nascent stage. It is expected that the growth will continue an additional tenfold (10x) in the coming three years. This would increase per capita digital transactions from the current 22 to 220.

[1] Sec 2.2, Digital Transaction Metrics, High Level Report on Deepening of Digital Payments, RBI

While India's growth in this sector is impressive by itself, it stands to reason that we measure it with the growth of other countries as well. As can been seen in the table below, comparable Asian economies such as China and Indonesia have consistently been ahead of India in their digital payment adoption rates.

No. of cashless transactions per capita			
Country	2015	2016	2017
Singapore	727.90	759.00	782.40
Sweden	428.80	481.40	497.90
USA	420.90	442.60	473.60
Euro Area	156.90	172.60	186.80
Russia	99.50	132.80	178.50
Brazil	137.60	139.40	148.50
China	48.90	70.40	96.70
South Africa	68.70	78.00	79.20
Indonesia	23.40	28.40	34.00

Table 1: Digital Transactions Per Capita Per Annum[2]

We wish to highlight the CDDP's recommended target metrics for the coming 3 years. The metrics and their respective targets can be seen below. These targets represent an ambitious but achievable set of goals for India's payments sector.

Metric	Target (3 Years)
Per Capita Digital Transactions (Correlates to digital transaction volume / month)	10X [From 22 in March 2019 to 220 in March 2022]
Digital Transaction Value / GDP	2X [From 769% in 2018-19 to 1500% in 2021-22]
Number of digital payment users (Active in the month)	3X [From 100 M to 300 M in 3 Years]
CIC / GDP ratio	No specific target. However, CIC should grow slower than GDP + inflation. As a result, in 5 years, this ratio should go down by 3-4% and tend towards the global average (7%)

Table 2: 2021-2022 Year Targets[2]

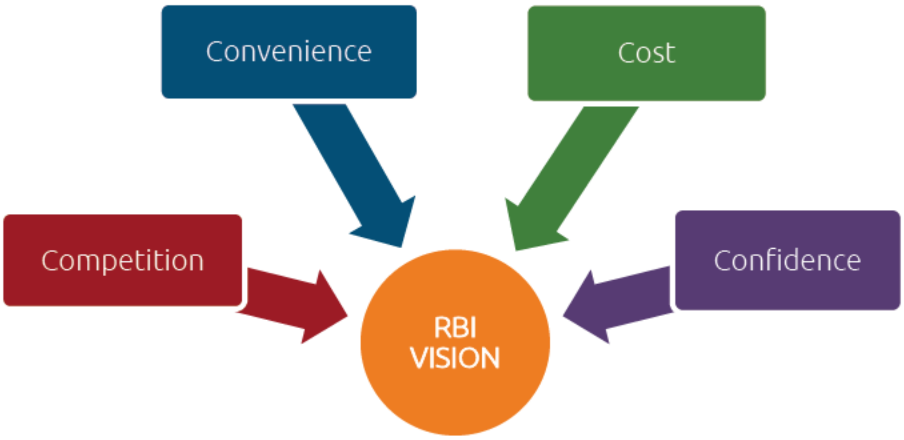
In summary, India's growth in terms of digital financial systems has been exponential over the past few years. However, in comparison to the level of adoption internationally, the country has a long way ahead. Thankfully, the RBI and the Government can utilize 3-Year Target metrics to monitor growth and guide the economy towards Digital Financial System maturity.

[2] High Level Report on Deepening of Digital Payments, RBI

RBI Vision 2019 – 2021 for Payment and Settlement Systems in India

The Reserve Bank of India (RBI) has envisaged an Indian economy wherein citizens from all strata of society can utilize the technology at their disposal to safely conduct financial transactions anytime, from anywhere in the country without being encumbered by the availability of cash. With this prediction, RBI released a vision document, 'Payment and Settlement Systems in India: Vision 2019 - 2021', for ensuring safe, secure, convenient, quick and affordable e-payment systems as it expects the number of digital transactions to increase more than four times to 8,707 crore in December 2021.

Its core theme of 'Empowering Exceptional (E)payment Experience' envisages to achieve "a highly digital and cash-lite society" through the goal posts of Competition, Cost effectiveness, Convenience and Confidence (4Cs). These goal posts may be expanded as follows:



Competition: Establishment of regulatory frameworks to test innovations before introduction into the market, adherence to benchmarks and regulating entry of new providers in the market.

Cost: Regulating costs to maintain balance in the market while providing a bouquet of cost-effective solutions to the end user.

Convenience: Presence of multiple payment modes at government and user level facilitating choice of the most convenient payment method anytime, anywhere.

Confidence: 'No Compromise' approach to security measures through the entire customer experience ensures confidence in the digital payment systems and addressing end user issues effectively.

Each of the four goals shall be explored in this paper, along with challenges in reaching those goals, and recommendations to meet the challenges.

Goal 1 - Enhancing Competition in India's Payments Landscape

In order to ensure that there is richness of solutions within the market, it is important to provide players with a competitive environment that encourages innovation. Therefore, certain steps need to be taken in this direction. With this in view, a review of payment systems, the creation of a Regulatory Sandbox, Self-Regulatory Organizations, and Regulating Entry of New Players will be looked at.

Review of Payment Systems

A review should be conducted on a regular basis to measure the performance of existing high value payment systems such as UPI, AEPS, APBS, PPI, etc. Such reviews would consider the status of the market, customer response, rate of fraud etc. This data would serve to provide insight on both issuance and acceptance sides of the payments market and identify any imbalance on either side. Additional areas that needs to be regularly analyzed are related to quality of service, ease of use as well as the ability to ensure frictionless experiences.

Regulatory Sandbox

The Payments industry is dynamic in nature. Technological developments enable Payment Service Providers to create more features and services in shorter durations of time. However, the effectiveness of such innovations needs to be tested and understood before being launched at a large scale. And such innovations need to be measured against some benchmarks. Therefore, products and services need to be measured in a proving ground to ensure only the best reach the market. The RBI Working Group on Fintech[3] recommends the creation of a Regulatory Sandbox to test financial products within a controlled environment before a large-scale launch.

[3]RBI Working Group on Fintech Report:
https://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/WGFR68AA1890D7334D8F8F72CC2399A27F4A.PDF

A Regulatory Sandbox would facilitate payment innovations while reducing risks and creating opportunities for consumers to have access to more advanced and efficient payment systems. The presence of such an environment would encourage both existing players as well as new entrants to continuously compete, innovate and serve a wider bouquet of services to customers.

Self-Regulatory Organizations

As the payments industry matures, there is a growing need for a regulatory body. In order to ensure effective regulatory oversight, a Self-Regulatory Organization (SRO) may need to be formulated. Such an SRO would act as a bi-directional channel between the regulators and the industry. The organization shall work towards establishing standards, benchmarks and promoting best practices for customer protection, security, etc. This would drive the velocity of innovative policies that are more in touch with the fast-moving ground realities.

Regulating Entry of New Players

The Indian payments landscape has come to be dominated by only a few payment operators despite an abundance of payment systems. This raises concerns regarding too much market share being concentrated with a few entities, consequently opening the discussion for increasing competition.
Keeping in mind the potential impacts to the financial stability of the market, the framework for evaluating new entrants would need to be reviewed. Such a framework outlines the minimum requirements which need to be met for an entity to be granted permission to act as payment system. Both bank and non-bank entities can be evaluated based on their capabilities and risk.

Desirable requirements stated by the RBI in their Policy Paper titled "Authorization of New Retail Payment Systems[4]" are:

a) physical presence in the country
b) impeccable track record, and
c) being likely to conform to the best overall standards including those pertaining to customer service and efficiency.

[4] Policy Paper on Authorization of New Retail Payment Systems - https://m.rbi.org.in/scripts/PublicationReportDetails.aspx?UrlPage=&ID=918

Recommendations for Cooperative Competition

Improving the Ecosystem through Review	• Payment Providers + Regulators • Precise market data = Accurate Market representation • Identify and solve issues preemptively
Utilising the Regulatory Sandbox	• Testing ground for Payment products • Demonstrate product effectiveness • Improve consumer experience and engagement • Expand to incumbent organisations
Setting the Standard through SROs	• Establish world class standards, benchmarks, best practices • Streamline user experiences

- **Improve the Ecosystem through Review:** Payment Providers are encouraged to support the regulator in conducting regular reviews of the ecosystem through providing the most precise data about their card issuance, infrastructure, usage, and other parameters to ensure the actual state of the market is represented and any issues can be identified and resolved preemptively.
- **Utilizing the Regulatory Sandbox:** Payment providers should fully utilize the sandbox environment to demonstrate the effectiveness of their products in improving consumer experience and retaining user engagement with digital services.
- **Setting the Standard through SROs:** Industry members are encouraged to leverage the SRO to establish leading standards, benchmarks and best practices for the industry, as well as streamlining consumer processes to ensure India's payment industry is at par with global leaders.

Goal 2 - Boost Adoption

Since it is the RBI's goal to boost adoption, therefore the cost of transacting in cash should be made higher to the cost of transacting digitally. Secondly, there should be a concerted effort to ensure that there is a wider proliferation of opportunities for customers and merchants to transact electronically.

Market forces need to be leveraged to ensure there is wider expansion of these services. Usage of cash is typically defined not just because of cost, but also due to resistance and the attitudes of consumers and merchants. Large merchant establishments, while offering multiple digital payment options, are faced with customers wanting to pay cash.

Smaller establishments, on the contrary, need to be compensated for the possible cost of digital payments due to the lower ticket sizes, as well as inherent resistance and concerns about adopting electronic payments.

Costs Involved in Adopting Multiple Card/Wallet Payment Systems

While implementing any electronic payment system, there is a cost involved called the MDR (Merchant Discount Rate). Incentives are necessary for any business to grow and digital payments are no exception. Banks / payment aggregators and service providers incur substantial costs on acquisition of new merchants, servicing the existing merchants, due diligence costs, managing fraud losses, compliances, AML, dispute management system and associated costs in managing the entire infrastructure.

The Indian acceptance infrastructure has quadrupled from 1.2 MN acceptance locations to 5 MN acceptance locations in the last three years. A significant part of this growth can be attributed to the vibrant and thriving merchant acceptance ecosystem that comprises of the acquiring banks, merchants, and other entities like payment facilitators.

Over the last 3 years, more than 60% of new acceptance locations have been contributed by the Payment facilitators, who have been innovating in this space and have also attracted Fintech investments in the country. Artificially intervening here could have a disastrous impact on the acceptance and fintech ecosystem in the country.

When payment wallet providers and new payment banks sign up merchants across the country, there is massive duplicate effort when they have to install and display different QR codes at a merchant location for each of the payment networks. Instead, an interoperable solution such as BharatQR can be promoted, which consists of a single QR code that has common specifications for not just card transactions but also for BHIM UPI.

Recent Steps Taken to Reduce Transaction Charges

In order to provide an impetus to the digital payments drive, the Reserve Bank of India (RBI) has waived off all charges on fund transfer through Real Time Gross Settlement System (RTGS) and National Electronic Funds Transfer (NEFT) System from July 1st, 2019.

The RBI has further decided that processing charges and time varying charges levied on banks by RBI for outward transactions through the RTGS, along with the processing charges for transactions processed in NEFT will be waived by the central bank. The RBI had also asked banks to pass on the benefits to customers from the same day.

As a result, India's largest public sector bank, the State Bank of India has recently taken multiple actions to waive IMPS, NEFT and RTGS charges for all customers. SBI announced that it will not levy transaction charges through RTGS and NEFT for YONO, internet banking and mobile banking customers from July 1st, 2019. SBI will also waive IMPS (immediate payment service) charges for these customers from August 1st, 2019.

Potential Interventions to Improve Adoption

Address Cost Issues

- Reimburse MDR costs for small establishments
- Disincentivise usage of cash in larger establishments
- Enable usage of one QR code

Market forces to determine interchange fees

- Incentivise merchant sign-up for Acquirer Banks
- Allow market forces to determine interchange fees
- Disincentivise ATM cash withdrawals

Participation of Non-Banks

- Non-Banks as Associate members of payment systems can enhance acceptance infrastructure

Incentivising Merchants and Customers

- Incentivize Merchants incentives for offering one or more digital payment modes
- Incentivize customers for using digital payments
- Import duties on POS machines may be waived
- GST on digital payments may be reduced

Establishing Acceptance Development Fund

- ADF to subsidise acquirers for deploying PoS accepting infrastructure in poorly served areas
- More merchants developed and onboarded
- Increased usage of digital payments

Goal 3 - Creating Convenience and Financial Inclusion

Government Payments

There have been significant developments in government transactions as majority of Central Government payments are now digital. Ministry of Electronics and Information Technology (MeitY) has issued Guidelines on Adoption of Electronic Payments and Receipts (EPR)[5] and the Ministry of Finance (MoF) has issued a memorandum that departmental payments to vendors are to be conducted via digital payments[6].

Central and State Governments have integrated their e-payment and e-receipt modules with RBI's e-Kuber System. This has created a standardized, secure model for governments to handle their payments and receipts with minimal reconciliation. The e-Payment model facilitates State Governments to directly credit beneficiary accounts via NEFT. The e-Receipt model enables RBI to collect receipts via agency banks or directly through NEFT/RTGS. Similarly, State Governments also offer multiple payment options to their customers on their respective portals.

Direct Benefit Transfer has emerged as an important component in several schemes facilitating Government departments in handling transfers directly to beneficiaries of the scheme. However, attention needs to be paid to returns management, increasing awareness of the formalities, and reducing processing errors.

Government tax collection has also been brought onto digital platforms. The collection of Goods and Services Tax (GST) has been integrated into the e-Kuber system. NEFT/RTGS payments allow tax to be credited into Government accounts on the same day. Similarly, electronic collection of customs is already underway on the Indian Customs Electronic Commerce Interchange Gateway (ICEGATE). These systems have significantly streamlined the previously laborious process of payments and receipt in governments.

However, the provision of such systems also raises unique challenges:

- **Archaic Accounting Rules**: These do not currently serve the issues arising from digital transactions, like returns, reconciliations etc.
- **Transaction Costs**: The Government should ideally bear the costs associated with digital payments in order to encourage usage among customers. The RBI has recently taken positive

[5] Guidelines for Adoption of Electronic Payments and Receipts (EPR), MeitY:
http://cashlessindia.gov.in/Guidelines%20for%20adoption%20of%20EPR%20-%209Nov2016.pdf
[6] Ministry of Finance Memorandum:
http://cashlessindia.gov.in/MoF_Payment_suppliers_Govt_Departments_Epayments_above_Rs5K.pdf

steps in this direction, by waiving off all charges on fund transfers NEFT, RTGS and IMPS, as well as removing MDR for transactions done via debit cards in a bid to boost digital transactions.

National Common Mobility Card (NCMC)

The National Common Mobility Card (NCMC) can be used on metro, buses and suburban railways, as well as to pay for parking and tolls and in shops. Dubbed 'One Nation One Card', the contactless card system is India's first domestically developed transit platform and was unveiled by Prime Minister Narendra Modi while inaugurating the first phase of the Ahmedabad metro service.

According to the Ministry of Housing & Urban Affairs[7], "The customers need not carry multiple cards for different usage. Further, the super quick contactless transactions will improve the seamless experience. This will also help in higher digital payments penetration, savings on closed loop card lifecycle management cost and reduced operating cost. The rich data insights may be used by operators for business intelligence leading to efficient operation."

Financial Inclusion

The RBI defines Financial Inclusion as the "process of ensuring access to appropriate financial products and services needed by all sections of the society in general and vulnerable groups such as weaker sections and low income groups in particular, at an affordable cost in a fair and transparent manner by regulated, mainstream institutional players."

There is a large section of society that is denied benefits from the digital payment systems. This is due to a variety of different factors, some of which shall be covered as follows:

- **Language**: India is a land of multiple languages and dialects. Several areas of the country have local languages and do not speak Hindi or English. In order to reach citizens in such areas, digital payments services provided to them must be in their local language.
- **Gender**: The marginalization of women in the financial system is detrimental to society at large. As per a World Bank Survey in 2017, 42.8% of Indian male aged 15+ own a debit card while 22.3% of Indian females own a debit card. This disparity becomes deeper when looking at use cases involving online transactions.
- **Disability**: Disabled citizens in India face hurdles daily when availing public services and facilities. When it comes to digital services, the visually challenged especially are unable to fully utilize them. While the Rights of Persons with Disabilities Act, 2017 ensures that physical spaces comply with accessibility standards, the same cannot be said for digital products and services.

[7] MoHUA Press Release: http://pib.nic.in/PressReleaseIframePage.aspx?PRID=1567452

Regulators need to ensure that payment service providers meet such accessibility criteria in order to bring the benefits of digitization to a neglected section of society.

Reaching Rural India

A substantial part of the rural population, especially in remote areas, still does not possess smartphones and thus depends upon feature phones. Even if they do possess smartphones, unreliable internet connectivity does not make them ideal for usage in financial transactions. Consequently, the population staying in these areas remain deprived of the benefits afforded by digital financial systems.

To address this, Government of India offers USSD based Financial Services. Through the payment service *99#, users can pay a small fee and conduct financial transactions without internet connectivity on feature phones. However, in order to make this service more attractive to rural users, innovation is required in terms of features on offer and service plans at minimal cost. Bank and non-bank payment providers should focus on these citizens and enable them to reap the benefits.

Financial Institutions for Inclusion - Business Correspondents

In the early 2000s, The RBI allowed banks to reach under-served or unserved areas through a network of intermediaries. The objective of such a model was increasing the reach of the banking sector in hard to reach corners of the country, consequently leading to higher financial inclusion. These intermediaries are known as Business Correspondents. Business Correspondents act as a proxy for the bank and provide products and services to the users on the bank's behalf.

The Business Correspondent model has been successful in countries around the world. Nations like Sri Lanka, Tanzania, Nigeria, Chile, Brazil and Zimbabwe have successful implementations which can be learned from. For example, in Zimbabwe alone, Business Correspondents networks have brought on approximately 31% of the country's population as customers while increasing monthly transaction volume to $200 Million.

In India however, the Business Correspondent model has been a mixed experience. While the number of agents in the network has grown over the years, and there are success stories, many challenges[8] still hinder the model's effectiveness.

- **Insufficient Remunerations**: Present remunerations and earnings lead to high attrition rate among Business Correspondents.

[8] Brainstorming session by BCFI: http://bcfi.org.in/wp-content/uploads/2019/04/BCFI-DFS-Brainstorming-Session-on-FI-Submission-of-Problems-Solutions-150419.pdf

- **Lack of eKYC**: Inability to onboard agents and customers through eKYC leads to excessive manual work, reducing productivity.
- **Application of GST:** The application of 18% GST on Business Correspondent transactions and services hinders the goal of Financial Inclusion.

These challenges need to be addressed in a timely manner so that the financial inclusion strategy isn't rendered ineffective. As the Business Correspondents can reach a large segment of the population, they can introduce their customers to digital payments much more effectively than bank branches. Additionally, in order to ensure that users have multiple payment options, Business Correspondents can be issued licenses from multiple banks.

Challenges to Financial Inclusion

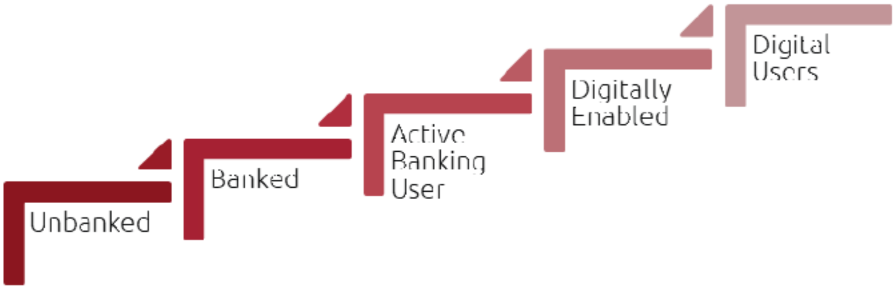
- Undignified Treatment of Government Scheme beneficiaries who tend to be economically disadvantaged.
- Government insistence on separate accounts for every scheme raises the burden on banks and beneficiaries.
- Distance from banking access points and cash-in-cash-out facilities.
- Need to map all financial institutions to identify areas for new branches and outreach.
- Lack of financial literacy among customers and inability to understand financial products.
- Lack of opportunities to pay G2G, G2C, C2G financial transactions digitally.

Recommendations for Driving Financial Inclusion

In order to better manage the digital ecosystem and its adoption, the RBI requires a regular data stream containing attributes such as Population, Users, Infrastructure and Usage. Such data must be precise and ample enough to analyse the impact of programs and shed light on the viability of existing infrastructure.

To track customer awareness, effectiveness of financial literacy campaigns, and identify areas/populations with their respective level of digital inclusiveness, a comprehensive **Financial Inclusion Index** can be prepared. Such an index may serve to highlight issues and direct decision making in the right direction. Some of the parameters that can form the basis of the index are:

- Fraction of population with bank accounts.
- Fraction of women with bank accounts
- Fraction of accounts with mobile/internet banking enabled, etc.



Maturity Index for Financial Inclusion

To further address the financial inclusion challenges, systematic efforts would be required in terms of addressing language and accessibility barriers, reduction of USSD charges, engaging small merchants, increasing rates of Aadhaar seeding and other challenges at the SLBC level. Finally, the Business Correspondent model and its potential for bringing digital services to the far reaches of the country cannot be ignored. Challenges impeding the model in gaining traction should be addressed as soon as possible.

Further, the government should mandate all G2G, G2C, C2G payments to occur through electronic means – thus utility bills, education, health, transport and other citizen centric engagements should be incentivized if paid for electronically.

Goal 4 - Building Customer and Merchant Confidence

Business Continuity for Digital Payments

Consumer confidence in the payment systems is of high importance. Currency in Circulation (CIC) already acts as a roadblock on the adoption of digital payments. If the system were to be down or unreachable, due to disasters or other such occurrences, the need for cash would be felt more acutely. Inability to restore the services would erode consumer confidence and raise questions about its reliability.

Recommendation:

As digital payment services become more prevalent and far flung areas are brought into the fold, it is imperative that the supporting infrastructure be resilient. It is advised that State and National Disaster Management Agencies establish, maintain and monitor robust infrastructure in areas prone to disasters. Additionally, the agencies and service providers need to cooperate to facilitate smooth digital payment services in the hour of need.

Current Failure Rates

As newer customers venture into digital payments, it is important to provide them good experiences with the services. Failure in services and inability to provide a good experience hinders adoption. Bad experiences turn customers away from digital payment services and towards the comfort of using cash. Such failures can be due to Technical Declines or Business Declines. Technical Declines may occur due to the system's inability to handle new traffic and load. Business Declines occur largely due to lack of an intuitive user interface not and/or lack of guiding material leading to user errors.

Recommendation:

Technical Failures can be mitigated through adopting system design focused on efficiency, scalability and resilience. There needs to be a dedicated target for the reduction of technical decline. Business

Failure can be rectified by implementing a simple, easy to use interface coupled with easy to follow instruction guides for users.

Addressing Grievances

Grievance Redressal is an important factor in payment system adoption. If user complaints are not handled in a prompt, efficient manner users may stop using services altogether. Furthermore, they may discourage others from adopting the services also. As of now, the majority of complaints received by banks and PPIs are via email or online portal. While, most are resolved in a few days without escalation to the ombudsman, they do incur a high cost[9]. This is largely due to high level of manual intervention involved in complaint resolution. If rising number of digital payment users are to be supported, it is crucial to make the redressal system robust and capable of handling large volumes of complaints.

Recommendation:

There is a need for an advanced Online Dispute Resolution (ODR) system for faster, convenient complaint redressal. The ODR should combine machine learning and human based intervention with an option to appeal to the ombudsman. It should facilitate user complaint input from all touchpoints such as ATMs, POS, SMS, etc. which may be used to resolve the issue through automation.

Education & Capacity Building

As more users adopt digital payments, it is critical that they be made aware about the benefits and dangers of the system. Users should be aware of their rights, complaint redressal process and importance of data privacy. In addition to educating users, the system should be able to support the influx of users through support staff and making system design scalable and resilient to threats.

Recommendation:

While many awareness programs have been initiated by the Govt of India such as DigiShala[10] and via Common Service Centers (CSCs), State Level Bankers Committee (SLBC) and District Level Coordination Committee (DLCC) organizations should ensure such programs are tailored to their specific regions. Awareness programs should also include latest frauds and remediation steps. PSPs and banks should build their own capacity by training staff on offerings and how to educate users.

[9] RBI Banking Ombudsman Scheme Annual Report, 2017-18

[10] Cashless India website, Ministry of Electronics and Information Technology (MeitY), GoI, webpage: Capacity Building and Awareness

Cybersecurity Challenges and Fraud Management

With newer payment technologies being included in the banking and payment ecosystem, the payment system will see a significant increase in the new, sophisticated and complex threats emerging out to exploit these technologies. Moreover, cyberthreats will only rise as India is seeing a shift towards a cashless economy. The CERT-In handled 2,08,456 incidents in 2018 compared to 49,455 incidents in 2015, i.e. more than 4 times in last 3 years. The types of cyber security incidents such as phishing, scanning, website intrusions and defacements, virus code and denial of service attacks will continue to grow. The absence of robust cyber security laws in India is a major threat to the country's dream of a cash-less economy. The dream would not be realised until a robust comprehensive and progressive cyber security strategy is created and enforced at the national level.

Fraud Management and mitigation is a huge factor in retaining customer confidence. Frauds should be identified as soon as possible and their impact on customers should be minimal, if not negligible. To strengthen the confidence in the payment systems and minimize instances of fraud, there is a need to monitor the types of fraud that may be taking place in various payment systems.

Recommendation:

As of now, RBI has rules for limited customer liability during frauds and banks routinely report their findings to RBI. However, as the payment services scale up, the efforts to check fraud should as well. To track frauds, regulators should create a central fraud registry accessible to stakeholders for evaluating user fraud risk. Customers should be empowered to report fraud through the Grievance Redressal system. Finally, correctly identifying perpetrators, taking swift action against them and publicizing the same will go a long way in instilling confidence.

Conclusion

Through this paper and this conference, we are focusing on the digital payments milestones established by the Government of India and the RBI. We have also explored the important steps taken to guide the economy towards Digital Financial System maturity in the coming three years.

We are aiming to spark informed discussion on the readiness of the entire payment ecosystem to meet the vision of "a highly digital and cash-lite society".

It is the challenge and opportunity for all stakeholders to meet the key goals of enhancing competition in India’s payments landscape, reducing costs to boost adoption, creating convenience and financial inclusion, and building market confidence.

Abbreviations

AEPS	Aadhaar Enabled Payment System
APBS	Aadhaar Payment Bridge System
ATM	Automated Teller Machine
BC	Business Correspondent
BHIM UPI	Bharat Interface For Money
CDDP	Committee on Deepening of Digital Payments
CIC	Currency In Circulation
CSC	Common Service Centers
CTS	Cheque Truncation System
DLCC	District Level Coordination Committee
ECCS	Express Cheque Clearing System
eKYC	Electronic Know Your Customer
EPR	Electronic Payments and Receipts
GDP	Gross Domestic Product
GST	Goods and Services Tax
ICEGATE	Indian Customs Electronic Commerce / Electronic Data Interchange Gateway
IMPS	Immediate Payment Service
KYC	Know Your Customer
MDR	Merchant Discount Rate
MeitY	Ministry of Electronics and Information Technology
MoF	Ministry of Finance
NACH	National Automated Clearing House
NCMC	National Common Mobility Card
NEFT	National Electronic Funds Transfer
NETC	National Electronic Toll Collection (Also called Fastag)
NPCI	National Payments Corporation of India
ODR	Online Dispute Resolution
POS	Point of Sale
PPI	Prepaid Payment Instruments
PSP	Payment Service Provider
RBI	Reserve Bank of India
RTGS	Real Time Gross Settlement System
SLBC	State Level Bankers Committee
SMS	Short Message Service
SRO	Self Regulatory Organization
UID	Unique Identification
UPI	Unified Payments Interface
USSD	Unstructured Supplementary Service Data

References

Brainstorming session by BCFI: http://bcfi.org.in/wp-content/uploads/2019/04/BCFI-DFS-Brainstorming-Session-on-FI-Submission-of-Problems-Solutions-150419.pdf

Cashless India website, Ministry of Electronics and Information Technology (MeitY), GoI, webpage: http://cashlessindia.gov.in/

Guidelines for Adoption of Electronic Payments and Receipts (EPR), MeitY: http://cashlessindia.gov.in/Guidelines%20for%20adoption%20of%20EPR%20-%209Nov2016.pdf

High Level Report on Deepening of Digital Payments, RBI

Ministry of Finance Memorandum: http://cashlessindia.gov.in/MoF_Payment_suppliers_Govt_Departments_Epayments_above_Rs5K.pdf

MoHUA Press Release: http://pib.nic.in/PressReleaseIframePage.aspx?PRID=1567452

Policy Paper on Authorisation of New Retail Payment Systems - https://m.rbi.org.in/scripts/PublicationReportDetails.aspx?UrlPage=&ID=918

RBI Banking Ombudsman Scheme Annual Report, 2017-18

RBI Working Group on Fintech Report: https://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/WGFR68AA1890D7334D8F8F72CC2399A27F4A.PDF

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The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the development of India, partnering industry, Government, and civil society, through advisory and consultative processes.

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CII Address

Confederation of Indian Industry
(Northern Region) - Sub-Regional Office
Plot No. 249-F, Sector-18, Udyog Vihar, Phase IV, Gurugram - 122 015
T: +91-0124-4014073 • F: +91-0124-4014070
E: ciinr@cii.in / deepak.sidha@cii.in • W: www.cii.in

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Panacea Geospatial is a sister company to Panacea Infosec, building Geographic Information Systems (GIS) technology that is disrupting the multi-billion geospatial technology sector. Panacea Geospatial is engaged in multiple national-level Smart City and National-level GIS projects with the Government of India.

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Panacea Infosec - Contacts

Ajay Kaushik
CEO
Panacea Infosec Pvt Ltd
Phone: +91-98109 44187
Email: ajay@panaceainfosec.com

Apurva Krishna Malviya
Country Head – Business Development
Panacea Infosec Pvt Ltd
Phone: +91-96500 28323 / +91-92057 86094
Email: apurva@panaceainfosec.com

Address: 226, Pocket A-2, Dwarka Sector 17, New Delhi, India

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Confederation of India Industry

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Panacea INFOSEC

Plot No.226, Pocket A2, Sector 17
Dwarka, New Delhi, India 110075
T: +91-92057 86094, +91-114 9403170
E: apurva@panaceainfosec.com /
info@panaceainfosec.com
W: www.panaceainfosec.com

CII
Confederation of Indian Industry

(Northern Region) - Sub-Regional Office
Plot No. 249-F, Sector-18, Udyog Vihar,
Phase IV Gurugram - 122 015 (Haryana)
T: +91-0124-4014073 • F: +91-0124-4014070
E: ciinr@cii.in / deepak.sidha@cii.in
W: www.cii.in