India's experiences in digital ID (*Aadhaar*), financial inclusion, and social transfers

Learning note – G20 South Africa delegation to India

2nd - 6th December 2024

MSC
MicroSave Consulting

www.microsave.net

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1. Background and Context

Modular Open Source Identity Platform (MOSIP) is organizing a one-week exposure visit for key officials of the Government of Tanzania to India from September 16-20, 2024. MSC (MicroSave Consulting) will co-host the delegation throughout the week and organize the field visits on September 17, 2024 (the second day of the exposure visit). The key objective of the second day of the exposure visit is to understand the role digital public infrastructure (DPI) is playing in making financial and social inclusion better.

During the exposure visit, the delegation will interact with officials of the Unique Identification Authority of India (UIDAI), which issues *Aadhaar,* and oversee the day-to-day management of *Aadhaar* and other departments. The delegation will also witness how Aadhaar delivers food entitlements to eligible beneficiaries and offers last-mile financial services to the poor, women, and other vulnerable groups.

The visit will help the delegation understand the role of digital identity in development, best practices related to policy and regulations, stakeholder coordination, and other initiatives taken by the Government of India (GoI) to deliver government benefits to its citizens effectively. The exposure visit will broadly cover:

- Role of *Aadhaar* in increasing operational efficiency, reducing delivery costs, and curbing leakages in the transfer of social protection payments through Direct Benefit Transfer (DBT)
- Digitization of food distribution system in India and the role of *Aadhaar* in delivering food entitlement to beneficiaries in an effective manner
- Role of *Aadhaar* in enabling access to formal financial services to millions of unbanked Indians. This also includes banking-related services offered by Business Correspondents (BCs)
- Role of Payments Banks and regulatory compliances in financial inclusion
- Digital payment rails and their usage for the pro-poor segments

2. *Aadhaar* and its role in advancing financial Inclusion in India

A growing body of evidence demonstrates the strong positive relationship between access to formal financial services and economic prospects for poor individuals and communities. Banking the unbanked is a stated priority of the Government of India. As a step toward fulfilling its commitment to Financial Inclusion (FI), the Reserve Bank of India (RBI) introduced standards on "no-frill accounts" in 2005. These basic savings accounts were devised to increase access to bank accounts for a wider population. The accounts had an added emphasis on allowing zero or very low minimum balances in the accounts. Continued efforts from the Reserve Bank of India and other stakeholders have provided significant impetus to India's financial inclusion agenda over the years.

The Economic Survey 2015-16 emphasized that **JAM Trinity**[1] **(Jan Dhan Yojana, *Aadhaar*, and mobile connectivity)** can help the government increase financial inclusion and thereby implement large-scale, technology-enabled, and real-time Direct Benefit Transfers (DBTs) to improve the economic lives of India's poor. The key elements of JAM are detailed below:

2.1 *Aadhaar* – A Unique ID

Aadhaar is a 12-digit random number issued by the Unique Identification Authority of India (UIDAI) to the residents of India after fulfilling the criteria for verification. Any individual, irrespective of age and gender, who is a resident of India, may voluntarily enroll to obtain an *Aadhaar* number. The person willing to enroll has to provide minimal demographic and biometric information during the enrolment process, which is free of cost.

An individual must enroll for *Aadhaar* only once, and only one unique Aadhaar number is issued after de-duplication. *Aadhaar* is envisaged as a strategic policy tool for social and financial inclusion and public sector delivery reforms to increase convenience and promote hassle-free people-centric governance. As of August 2024, more than 1.4 billion[2] *Aadhaar* numbers have been issued to Indian residents.

Aadhaar is distinct from traditional identity systems such as voter identification and ration cards in two important ways: its utility across sectors and use cases and its underlying technology enabling unique identification as explained below:

1. It provides a cross-functional proof of identity (POI) and proof of address (POA), which is valid across states, and sectors. While certain forms of identity, such as the ration card, are accepted as general proofs of identity in India, they were designed to perform a specific function—in this case, to identify individuals to receive a food subsidy. According to the UIDAI, an all-purpose identity proof has the potential to increase user convenience, lower transaction costs for service providers, and reduce the time spent on identity verification.

2. *Aadhaar* is designed to employ individuals' biometrics (fingerprints and IRIS) that are inherently unique. This aids in creating a database with almost no duplicates and accurately verifying identities. Most traditional identity platforms in India are paper-based and suffer from varying degrees of duplicate identities. Duplicates in identity databases can be misused to siphon resources from their intended uses.

[1] The Economic Survey divided JAM into three components-
- *Identification or First-Mile:* Identification of beneficiaries by government
- *Transfer or Middle-Mile:* Transfer of funds to beneficiaries by government
- *Access or Last-Mile:* Access of funds by beneficiaries

[2] Aadhaar dashboard, Unique Identification Authority of India (UIDAI), August 2024

Additionally, paper-based identities are liable to theft and forgery, impeding the accurate authentication of individuals for service delivery. The UIDAI aims to use *Aadhaar* to plug these gaps.

2.2 Pradhan Mantri Jan Dhan Yojana (PMJDY)

PMJDY was launched in August 2014 to provide at least one bank account to each household. The underlying philosophy of the government behind PMJDY was to include low-income and vulnerable groups (generally financially excluded) in the mainstream financial system.

The implementation of PMJDY incorporated the following key aspects to ensure holistic financial inclusion of the financially under-served or excluded-

- Universal access to banking facilities
- Providing basic bank accounts with overdraft facility and *RuPay* (domestic) debit cards to all households
- Financial literacy program to increase uptake of financial products
- Credit guarantee fund to mitigate risks on account of overdraft facility extended to these accounts
- Micro-insurance for all account holders under PMJDY
- Pension schemes for the unorganized sector

To provide universal access to banking facilities, over 600,000 villages were mapped according to each bank's 'Sub-Service Area' (SSA). At least one fixed-point banking outlet caters to every 1,000 to 1,500 households, known as an SSA. The SSAs are covered through a combination of traditional bank branches and fixed-point Business Correspondents/agents known as *Bank Mitras* (BMs), who act as representatives of banks and are equipped to handle customer transactions.

Through significant effort on the part of the public and private sectors, Pradhan Mantri Jan Dhan Yojana (PMJDY or "Jan Dhan") has facilitated the opening of more than 530 million accounts as of August 2024[3], out of which women own ~296 million accounts.

2.3 Mobile connectivity

Apart from the availability of a unique identifier and access to financial services, connectivity was another major pillar that needed strengthening to enhance financial inclusion in India. India needed connectivity and digital payment infrastructure that is readily available in remote rural areas with a single click. This is where an increase in mobile penetration in India supported the cause. India has 1.2 billion phone connections[4] (as of June 2024) and 750 million smartphone users[5] (as of 2021).

[3] Progress report, Pradhan Mantri Jan Dhan Yojana, August 2024
[4] "Highlights of Telecom Subscription Data as on 30th June, 2024", Telecom Regulatory Authority of India, August, 2024
[5] "TMT predictions 2022", Deloitte, February 2022

3. Key digital payments infrastructure in India

The National Payments Corporation of India (NPCI) played a critical role in advancing financial inclusion in India by developing the desired payment solutions and digital infrastructure. The NPCI, promoted by RBI, began with ten core promoter banks. It is an independent organization that administers all retail payment systems in India.

The key payment systems and solutions developed by NPCI to facilitate wider penetration and last-mile transfers are – the RuPay card (a domestic card scheme), *Aadhaar* Enabled Payment System (AEPS), *Aadhaar* Payment Bridge System (APBS), and Unified Payment Interface (UPI). The key characteristics of each of these payment systems are listed below.

3.1 RuPay Card

The RuPay card was launched in March 2012 by the NPCI to offer a domestic, open-loop, multilateral system of payments. “RuPay” is the coinage of two terms Rupee and Payment. NPCI developed a domestic card scheme to address the needs of Indian consumers, merchants, and banks, and has the following benefits:

- **Lower cost and affordability:** Since transaction processing happens domestically; it leads to a lower cost of clearing and settlement for each transaction. This has helped in making the transaction cost affordable and increased the usage of cards in the industry.
- **Customized product offering:** RuPay, a domestic card scheme, offers customized products and services for Indian consumers.
- **Protection of information related to Indian consumers:** Transaction and customer data related to RuPay card transactions reside in India.
- **Provide electronic product options to untapped/unexplored consumer segments:** The right pricing of RuPay products makes it a more economically feasible option for the banks to offer to their customers. In addition, improved financial access and relevant product variants have helped RuPay make its way into the pockets of untapped consumer segments, both in rural and peri-urban India
- **Interoperability between payment channels and products: The** RuPay card is uniquely positioned to offer complete interoperability between various payment channels and products. NPCI currently offers varied solutions across platforms, including ATMs, mobile technology, cheques, etc., and is exceptionally well placed in nurturing RuPay cards across these platforms.

As of FY 2022-23, RuPay holds a significant position in India's card market with over 700 million cards issued [6], including 320 million debit cards. Public sector banks, driven by government schemes, account for 280 million of these debit cards, while private banks contribute over 11 million. RuPay credit cards also captured a 10% market share[6], highlighting the brand's expanding role in the financial sector.

3.2 *Aadhaar* Enabled Payment System (AEPS)

AePS is a bank-led model that uses *Aadhaar*-based authentication to allow interoperable online transactions in *Aadhaar*-linked bank accounts at a micro-ATM or kiosk. A user can avail of basic banking services through a simple three-step process. This includes entering an *Aadhaar* number, selecting the name of an *Aadhaar*-linked bank, and authenticating the transaction via biometrics at any of the Business Correspondent (BC) agent outlets.

[6] “RuPay's market share tops 60% in total cards issued, says RBI report”. Business Standard, January 28, 2021
6 “RuPay dominates India's debit card market but lags in credit cards”, BFSI ET, July 25, 2023
7 “RuPay credit cards see 10% market share surge via UPI integration”, The Hindu, May 24, 2024

AePS picked up significantly in rural geographies, among those who do not have smartphones, require assisted access to services, or receive domestic remittances periodically. With ~460 million average monthly transactions in FY 2023-24, AePS has boosted the pro-poor payments infrastructure in India. The recent growth in AePS usage portrays its key role in assisting cash withdrawal for migrants, daily wagers, and other workers in the informal sector during the COVID-19 pandemic. AePS transactions facilitated domestic remittances and governments' emergency cash transfer programs with an average transaction size of USD 9.38 for FY 2021-22.

Users can make transactions using *Aadhaar* in two ways:

- At BC outlets: Using AePS, a user can perform basic banking transactions at the BC outlet, such as cash deposits, cash withdrawals, intra-bank or interbank fund transfers, balance inquiries, and obtain a mini-statement.
- Using BHIM *Aadhaar* Pay (BAP) at merchant locations: BAP enables merchants to accept payments from customers by using an *Aadhaar* number and verifying biometric information. The hassle-free process enables digital transactions for the LMI segment with limited digital and financial literacy.

AePS transactions have improved access to the rural and underserved segment, driven by cash-in and cash-out (CICO) networks from bank accounts and domestic remittances. BAP eliminates the need for traditional PoS terminals to finalize digital transactions and makes it hassle-free for users with limited digital and financial literacy. Improvements in acceptance infrastructure and authentication mechanisms in AePS have the potential to ease the provision of banking services in underserved, rural areas.

3.3 *Aadhaar* Payment Bridge System (APBS)

APBS is used to disburse government benefits using *Aadhaar* numbers. Various government departments providing subsidies and monetary entitlements to Indian residents use APBS to channel beneficiary payments. Like AEPS, APBS requires beneficiaries' *Aadhaar* numbers to be linked to a bank account.

The *Aadhaar* Payment Bridge System (APBS) uses an *Aadhaar*-enabled infrastructure to facilitate payments from the government to individuals. The government states that APBS is a more efficient way to distribute DBTs because it eliminates the need for intermediaries, thus decreasing the likelihood of leakages and cutting the time between distribution and receipt of payment. The National Payments Corporation of India (NPCI) hosts the system. It requires only basic information for each transfer: the transferee's *Aadhaar* number and the bank to which the *Aadhaar* number is linked. As of September 2022, around USD 315 billion has been transferred directly to beneficiary accounts using APBS.

3.4 Unified Payment Interface (UPI)

UPI is a robust, instant real-time payment system that also offers many banking services and features on one platform. NPCI developed UPI. After the successful pilot launch with 21 member banks in April 2016, banks across the nation began launching their UPI-enabled apps on the Google Play Store in August 2016. Today, the UPI platform is the fastest-growing payment method in India. Real-time payments can be made remotely using a mobile number or virtual payment address (VPA).

UPI is easy, free, and instant. It lets you transact 24/7. The transaction limit in the UPI system was enhanced from INR 100,000 (~USD 1,200) to INR 200,000 (~USD 2,400) in March 2020[7]. However, the final decision to offer this increased limit on UPI transactions lies with the banks. The speed and transparency of UPI ensure faster and smoother payments, making it suitable for any business.

[7] "Statement on Developmental and Regulatory Policies", Reserve Bank of India, December 8, 2021

4. Direct Benefit Transfer (DBT) in India

Direct Benefit Transfer is a major initiative launched by the Government of India in 2013 to re-engineer the existing benefit delivery processes using modern Information and Communication Technology (ICT). This program aims to transfer benefits directly to the beneficiary accounts. The DBT intends to achieve:

- Electronic transfer of benefits, minimizing levels involved in benefit flow
- Reduced delay in payments
- Accurate targeting of the beneficiary
- Curbing pilferage and duplication

DBT aims to ensure better and timely delivery of benefits to people. This marks a paradigm shift in the process of delivering government benefits like wage payments, fuel subsidies, food grain subsidies, etc., directly into the hands of the beneficiaries, speeding up payments, removing leakages, and enhancing financial inclusion. The DBT system, through its customer-friendly processes, ensures last-mile connectivity, allowing actual disbursements to take place at the doorstep of the beneficiaries through a network of banking channels.

As of August 2024, 314 schemes from 53 Ministries of Government of India are running in the DBT mode. In FY 2023-24, benefits (both cash and in-kind) worth USD 83 billion were provided to a total of 1.26 billion beneficiaries. Some of the leading DBT schemes include PAHAL (LPG subsidy), payments under the National Rural Employment Guarantee Act (NREGA), and payments of the National Social Assistance Payment (NSAP) program, including old age pensions, disability pensions, etc.

In addition to cash transfer schemes, the DBT model also uses in-kind subsidy transfer schemes. One notable scheme is the subsidized food distribution using *Aadhaar*. Apart from its extended spread, the definition of DBT has also expanded over the years. Today, DBT encompasses not only direct transfer of cash benefits but also in-kind benefit transfers and transfers to the service providers/enablers within the scheme design.

1. Cash Transfer to Individual Beneficiary E.g.: LPG subsidy

- Subsidy schemes
- Welfare schemes with cash component
- Scholarships
- Pension and Cash Benefits
- Cash Awards

2. In-kind Transfer to Individual Beneficiary. E.g.: Public Distribution System (PDS)

- In-kind goods / products
- Training & skills development

Examples:

- Mid-day meal
- *Swachh Bharat* (Clean India Initiative)

3. Other Transfer/ Processes E.g.: Accredited Social Health Activist (ASHA)

- Payments to service enablers
- Payments to third parties for providing services

Examples:

- *Aanganwadi* (Rural mother and child care center) workers and NGOs

In a nutshell, DBT has progressed to becoming a revolutionary delivery mechanism, enabling the country to leapfrog generations of sub-optimal service delivery and migrate directly to a cutting-edge government delivery system. The DBT has resulted in total savings of around USD 42 billion until March 2023[8] for the government.

[8] "Estimated Gain", DBT Mission, Government of India (accessed August 2024)

4.1 Enabling factors of DBT

DBT's success and implementation across schemes hinges on certain pre-requirements that need to be met before any scheme can be onboarded on DBT.

Level	re-requisites
Beneficiary level	At the beneficiary level, we need- • A unique identifier associated with each individual (achieved through *Aadhaar*) • An individual's bank account associated with each unique beneficiary identifier (pursued through schemes such as Pradhan Mantri Jan Dhan Yojana (PMJDY) and other Financial Inclusion (FI) initiatives)
Organizational level	At the organizational level, we need- • Digitized dynamic beneficiary integrated database interacting with similar databases to avoid duplication
System-level	At the system level, we need- • Payment switch (such as *Aadhaar* Payment Bridge System (APBS)) • Fund management system (such as Public Financial Management System (PFMS)) • Round-the-clock connectivity, and • Enabling laws/infrastructure

India is one of the few cases with a strong convergence of digitized benefit transfers with financial inclusion and payment systems.

5. Rural Distribution – CICO experiments in India: Challenges and Opportunities

Agents or business correspondents (BCs) play a pivotal role in achieving financial inclusion in India. As per the Reserve Bank of India (RBI), there were close to 2 million BC agent outlets in India as of December 2023. Nearly 1.6 million (80%) of these BCs are in rural India. These agents have been conducting ~2.73 billion transactions worth INR 9.86 trillion in the last reported financial year. They continue to clock transactions, drive revenues for their providers annually, and help provide financial services to over 1 billion low and middle-income customers. With a vast geography to cover and a huge population to cater to, agents have now become the backbone of last-mile banking and payment service delivery across India. Agents have helped customers, especially remote communities, with remittances, cash withdrawals, enrolments for direct benefit transfers from the government, and so on. Further, these agents act as an important channel for the delivery of direct benefits from the government to nearly 800 million Indians and were instrumental in delivering social assistance benefits during the COVID-19 pandemic. Over the years, the agent network has evolved tremendously in terms of its business models, particularly during the COVID-19 pandemic.

The appointment of BC agents in India has followed one of two approaches, mostly aligned with regulations. The first approach is for banks to appoint individuals directly from the community as BC agents. The second approach involves appointing firms or organizations to manage agents, called BCNMs (business correspondent network managers) or corporate BCs. Banks typically follow the second approach and appoint corporate BCs to manage their agent network. Further, there are various ways in which agents are segmented in India. For example, CGAP segments them as traditional agents, new-age agents, payment bank agents, and SRLM BCs, whereas MSC segments them as traditional agents, new-age agents, payment bank agents, and GDS (Post Office Gramin Dak Sevak). Each agent type differs based on its business model, relationship with its corporate BC, and technology and devices used.

- **Traditional agents –** These agents are employed by public sector banks in India and are managed by BCNMs, offering banks financial services. They are also called Cash-in Cash-out (CICO) agents since deposits and withdrawals constitute the major portion of their transactions. They are typically exclusive[9] and dedicated[10] and mostly stationary at their kiosk.
- **New-age agents –** These agents are employed by private sector banks in India and managed by corporate BCs or distributor networks. They are mostly non-exclusive[11] and non-dedicated[12] agents offering financial and non-financial services. They use their providers' mobile applications or web interfaces.
- **Payments bank agents –** These agents are employed by their respective payment banks (a differentiated banking entity in India) and are managed by distributor networks. They use laptops and mobile apps to conduct transactions and typically offer add-on services to the payment bank.
- **Post Office Gramin Dak Sevak (GDS) –** These agents operate in a unique model. The Department of Post (DoP) in India manages them, but the India Post Payments Bank (IPPB) employs them. They are exclusive but non-dedicated. They use roving devices such as tablets to conduct transactions.

[9] Agents who provide products and services exclusively for one financial institution
[10] Agents who work exclusively as BCs
[11] Agents who provide products and services for more than one financial institution
[12] BC agents who have other sources of income, such as an agent who is also a shop owner

While agent networks are evolving, their service quality and viability remain a concern. We have evidence such as below:

- In recent research for a leading public sector bank, we found that for withdrawal, 71% preferred to go to the branch as opposed to 13% at agent points. This is a result of poor customer trust in agents.
- In the absence of financing from formal channels, agents depend on high-interest loans to rebalance money. Poor agent economics and limited financing options result in many agents becoming dormant.
- With a limited number of products that an agent can offer and the number of agents increasing - the margins and commissions of kiosk-based agents are getting thinner, with some agents facing a reduction of up to 50% in their commissions.
- BCNMs have tested women agents and acknowledge their efficacy and value. However, organizations are reluctant to take it to scale as there are gaps in knowledge, sensitization, and training on recruiting and managing women agents.

Moreover, as per the Global Findex 2021 report, 43% of unbanked Indian adults cited distance to a financial institution as a barrier to account ownership. Further, a nationally representative survey from Dvara research highlights that 52.6% of users facing withdrawal issues cite distant BC points to access their own money as a key challenge. Evidence such as those listed above and poor outreach of agents results from multiple challenges that CICO agents face despite impressive growth in numbers. However, the challenges indicated above do not similarly impact all the agents. The extent of the impact of these challenges varies depending on the type of agent. This makes it imperative for providers to design customized solutions for agents keeping in mind their type and business model.

6. India Post Payments Bank

A Payment bank is a niche, differentiated bank that can receive deposits and provide remittances but cannot lend money. The main target customers for payment banks are low-income households, small businesses, and migrant laborers. Following are the permissible/non-permissible activities for payment banks as mandated by RBI.

Payments banks can:

- Accept deposits up to INR 200,000 (USD 2,400) and pay interest like a savings bank account.
- Issue debit cards that are usable at ATMs of all banks.
- Transfer money and remittances through mobile phones.
- Distribute third-party financial products like mutual funds and insurance.

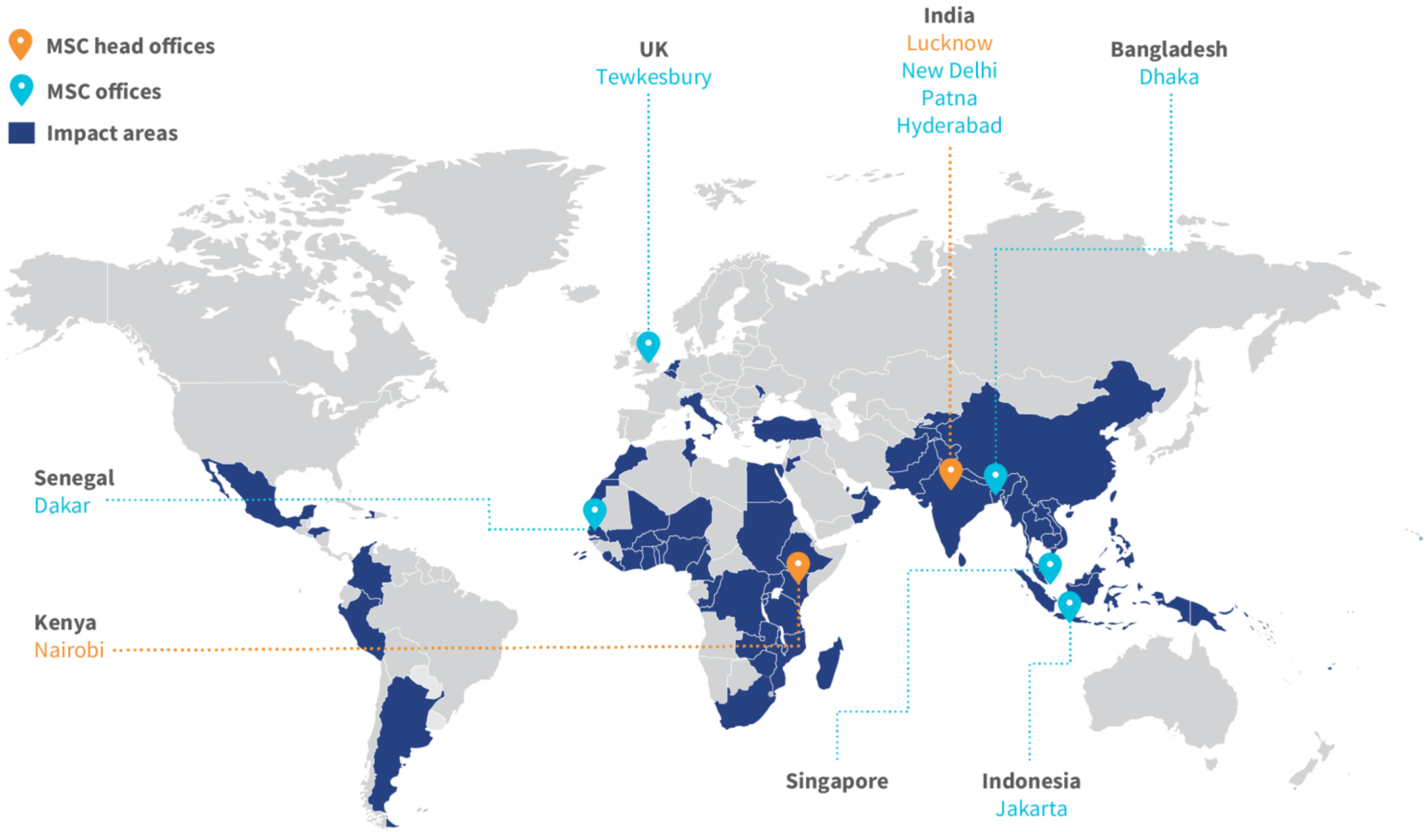
Payments banks cannot:

- Offer loans and issue credit cards to individuals
- Accept time deposits (long-duration fixed or recurring deposits)

The Department of Posts (DoP), set up more than 150 years ago, is the world's most widely distributed postal network, with a current reach (as of March 2023) of 159,251 post offices. 90% of these post offices are in rural areas. Over 138,000 post offices are activated as banking access points across urban and rural India. To deepen financial inclusion in India, the Reserve Bank of India (RBI), in August 2015, licensed several entities to set up payment banks in India. This included a license to the DoP. IPPB was set up on 1 September 2018 as a 100% subsidiary of the[13] Department of Posts (DoP). The DoP offers business correspondent services to IPPB through its vast network of trusted *Grameen Dak Sevaks* (GDS), a colloquial term for postal workers in India.

IPPB's customer base grew from 23.6 million in 2020 to 90 million by March 2024. This does not include a significant customer base of other banks and DoP customers who are offered various financial services through the IPPB network. About 50% of IPPB customers are women. Every month, IPPB can process 280 million financial transactions and these transactions continue to grow.

[13] About IPPB, India Post Payment Bank, September 2022



Asia head office

28/35, Ground Floor, Princeton Business Park, 16 Ashok Marg,
Lucknow, Uttar Pradesh, India 226001
Tel : +91-522-228-8783 | Fax : +91-522-406-3773

Africa head office

Landmark Plaza, 5th Floor, Argwings Kodhek Road
P.O. Box 76436, Yaya 00508, Nairobi, Kenya
Tel: +254-20-272-4801/272-4806

Email: info@microsave.net | Website: www.microsave.net