



POLICY BRIEF NOVEMBER 2015

Service Quality Standards in Telecom Connectivity for Financial Inclusion

Key Takeaways

The emphasis of financial inclusion in India has largely been on the banking and financial services footprint. There is broad consensus that delivering a cost-effective financial services landscape will leverage technology and telecom connectivity. However, the critical role of telcos is not adequately highlighted in the public space, and more importantly, does not reflect in the monitoring dashboards of the Pradhan Mantri Jan Dhan Yojana (PMJDY) Mission Directorate, which bears on its shoulders the brunt of delivery and reporting progress on India's ambitious drive toward financial inclusion. This policy brief focuses on this equally important piece that has received relatively less attention: the state of telecom infrastructure and service quality to enable transactions, transfers and withdrawals of funds, without which financial inclusion will be a non-starter in areas with low or nil connectivity.

There are Five aspects that the PMJDY Mission should consider toward strengthening the financial inclusion architecture:

1. Put in place a unified, harmonised database of the financial inclusion footprint, in terms of outlets, service points, devices, connectivity and agent networks, aggregated and monitored by a single source.
2. Recognise that internet and broadband footprint and quality of service need to be monitored directly under the PMJDY. In consultation with the Telecom Regulatory Authority of India (TRAI), National Payments Corporation of India (NPCI), Unique

Identification Authority of India (UIDAI), and others, the Department of Financial Services (DFS) should notify the minimum telecom service requirements for devices for conducting mobile financial transactions.

3. Include in its monitoring framework these relevant metrics: coverage maps showing the present status of internet/broadband penetration, quality of telecom coverage – represented by uptime, transaction times and transaction failure data, for each enlisted Sub Service Area (SSA). This will enable a conjoint mapping of device penetration across Bank Mitra (Business correspondents or BC) outlets and requisite telecom connectivity to enable successful financial transactions.
4. Identify, along with TRAI, appropriate metrics for service quality appropriate for mobile financial transactions, like 'transaction drops' (equivalent to 'call drops' in voice telephony nomenclature). Data on service quality can be requisitioned under a financial inclusion section included in the quarterly review reports of telecom service penetration and quality.
5. Ensure through TRAI a more granular reporting by service providers of telecom footprint and data service quality aligned to Sub Service Area (SSA) level, and regularly update the availability and level of telecom connectivity (2G, 3G) at a granular (sub-service area) level, ideally building a GIS heat map of telecom towers, data service quality profiles and transaction quality at the locations of 'Bank Mitras' (business correspondents or BC) across India.

Financial Inclusion Footprint

The Pradhan Mantri Jan Dhan Yojana's (PMJDY) monitoring focus has been primarily on the footprint of banking and agents, for which the unit of coverage is the Sub Service Area (SSA), a contiguous area representing a population of 1500 households. The PMJDY website mentions a total of 226,197 SSAs (<http://pmjdy.gov.in/statewise-statistics>).

The key coverage metrics for financial inclusion currently are:

- Number of PMJDY accounts, or banking penetration (Data given bank wise, state wise including zero balance accounts regularly, available at <http://pmjdy.gov.in/account-statistics-country.aspx>)

- Number of SSAs having functional Bank Mitra points (No detailed granular data released here yet on PMJDY website)
- Number of Bank Mitra points having requisite retail PoS devices enabled for RuPay, Aadhar Enabled Payment System (AEPS) and e-KYC (<http://pmjdy.gov.in/MITRAINFRA.aspx>)

The PMJDY monitors and reports Bank Mitra Infrastructure Readiness in significant detail for its Rural Bank Mitras, including a GIS locator. The Reserve Bank of India (RBI), on the other hand, provides data at the national level and its Annual Report 2014-15 reports 504,142 branchless mode outlets in villages, with no granular information regarding their location details, activity levels etc. With the absence of granular data on the number of agents,

Table-1: Position of Bank Mitra Infrastructure as on 16/10/2015

Number of Banks reported	62
Number of BC agents deployed	126023
No. of Device Capable under AEPS Transaction	102619
No. of Device Capable under RuPay Card Based Transaction	24621
No. of Device Capable under EKYC Transaction	92775

Source: PMJDY



Table-2: Financial Inclusion Infrastructure Readiness as on 16.10.2015

No. of Bank Mitra Deployed	No. of Devices Capable under AEPS Transaction	No. of Devices Capable under RuPay Card Based Transaction	No. of Devices Capable under EKYC Transaction
126023	102619 (81.4%)	24621 (19.5%)	92775 (73.6%)

Source: PMJDY

active agents, transactions at the agent level etc., the extent of agent dormancy or transaction readiness is unclear in the RBI dataset. It is important that the two main apex bodies monitoring the retail footprint of financial inclusion – the DFS and the RBI- coordinate towards a harmonised database that provides a clear and full picture of the actual financial inclusion footprint in the country.

However, this is still an incomplete picture of readiness for financial inclusion: for the key missing element is the information on existence and adequacy of telecom service coverage and quality mapped at the locations of these Bank Mitra or BC outlets. Unfortunately, the metrics of coverage used in financial inclusion do not correspond with those used to map India's telecom footprint.

First, tele-density is reported for 22 service areas (states, large metros, and groups of states), the telecom nomenclature does not

link up with the PMJDY's unit of measurement- the Sub Service Areas (SSA), covering habitations of 1500 households, spread over 3-4 villages. Tele-density data at SSA level is presently not available on the public domain, and not even available to the industry associations such as COAI, mainly because telcos are required to report aggregated data for the 22 service areas. Moreover, conventional telecom metrics – urban and rural tele-density – fall short in explaining adequacy for financial transactions, especially the authentication process for withdrawal of transfer of funds using mobile phones. The national tele-density of 77.3% and urban coverage of more than 100% in every service area can be a misleading statistic: even rural tele-density of 47.8% masks the huge disparities across states, weighed down by the low numbers in Bihar, Madhya Pradesh, Odisha, Assam, and East Uttar Pradesh.

Second, and more important, tele-density is inadequate in capturing the requirements for technology platforms on which financial

Figure-1: Tele-density Rural India

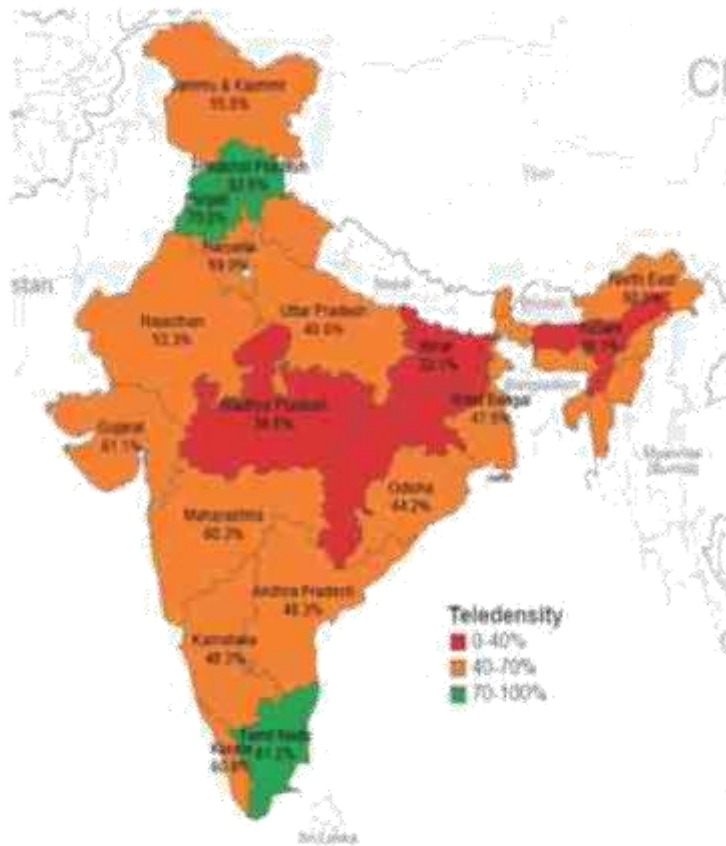
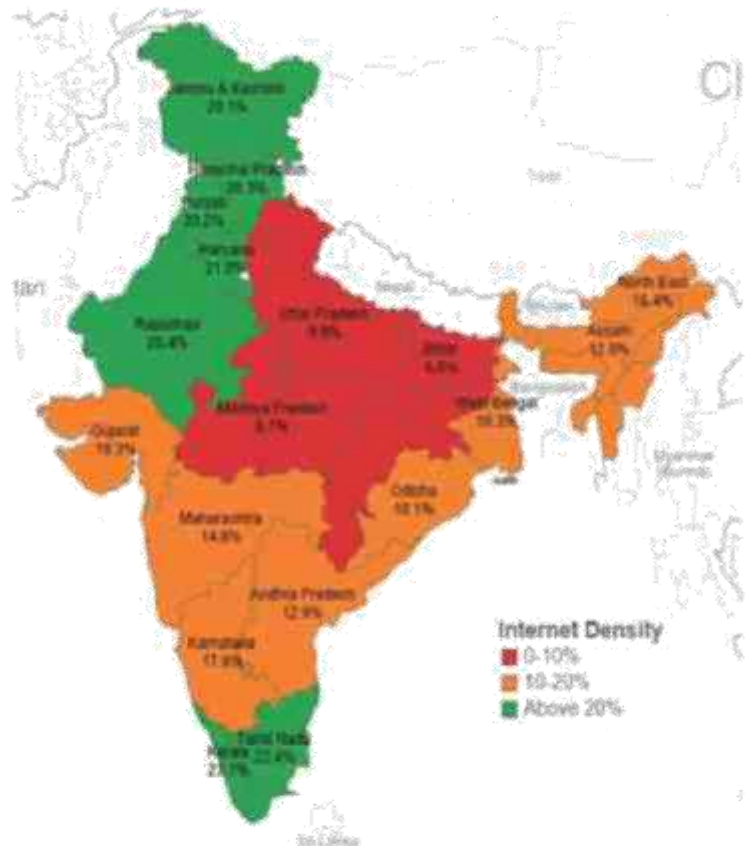


Figure-2: Internet Density Rural India





inclusion landscape is being built: electronic payment, NEFT, RTGS, mobile banking, IMPS, and (courts permitting) Aadhaar Enabled Payment Systems (AEPS). Thus the more relevant metric for financial inclusion is the availability and quality of wireless internet/broadband services sufficient for carrying out basic financial transactions using the platforms mentioned above. These call for measuring data services and not voice, through metrics such as transaction times, transaction failure rates due to data drops, signal drops, minimum assured data bandwidth, etc. At the same time, it is also important to ascertain whether financial transactions are being conducted in service points where there is requisite connectivity.

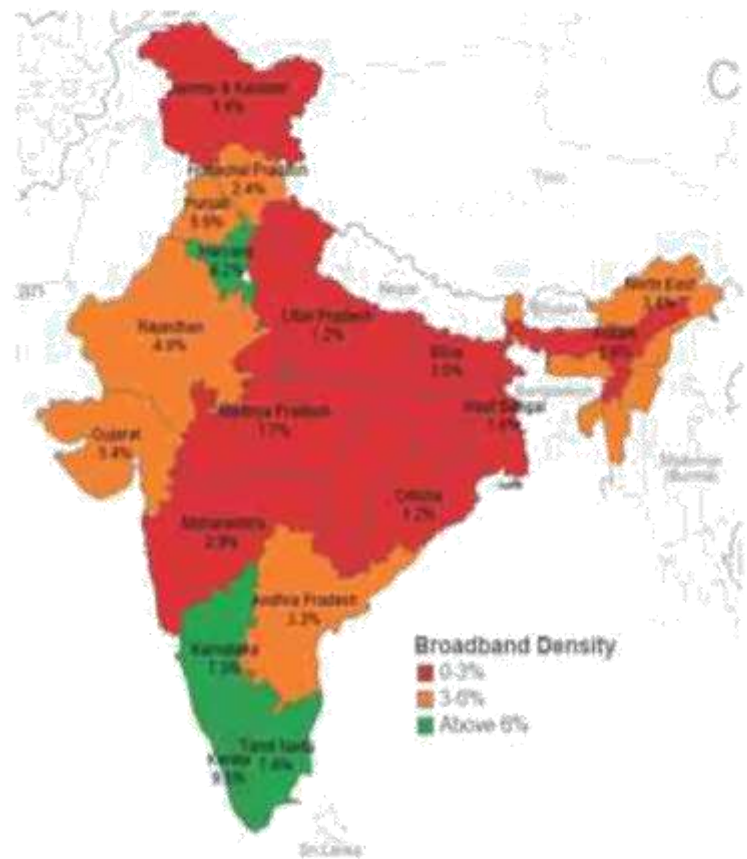
The Right Telecom Metrics for Financial Inclusion

TRAI data for March 2015 reveals all India internet subscriptions of 302 million, 11% over the previous quarter. Of these, 283 million were wireless – almost 99% being through phone and dongles – and 19 million wired connections. Broadband subscriptions (minimum download speed of 512 kbps) are significant, 99 million compared against 203 narrowband subscribers.

Internet/broadband density (number of subscriptions per population) gives us the realistic picture of the last-mile challenges to financial inclusion. Crunching these numbers, internet density in rural India is an unimpressive 12.89% and even lower for broadband: 2.94%. Even for urban India, broadband density is only 19%, compared to 143% tele-density. Interestingly, the mobile phone and dongle are the main modes of Internet connection, accounting for 84% of broadband and 98% of narrowband connectivity.

What this means for financial inclusion is that, even with a 100% population coverage in terms of bank accounts and the creation of customer support points accessible to habitations with a population of 1500 households and above, appropriate telecom service to enable data transactions still lags behind.

Figure-3: Broadband Density Rural India



Note: Data for maps sourced from Quarterly Monitoring Reports, TRAI. Telecom Service Areas: Madhya Pradesh includes Chhattisgarh, Uttar Pradesh includes Uttarakhand, Bihar includes Jharkhand, North-East includes Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, West Bengal includes Sikkim etc.

Table-3: Internet and Broadband Coverage data, March 2015 (Millions)

	Population	Wireless Subscribers	Mobile Density	Internet Subscribers	Internet Density	Broadband Subscribers	Broadband Density
All India	1255.3	969.89	77.27%	302.35	24.08%	99.20	7.90%
Rural	866.9	414.18	47.78%	111.76	12.89%	25.51	2.94%
Urban	388.4	555.71	143.08%	190.60	49.09%	73.69	18.97%

Source: Quarterly Monitoring Report, TRAI

While it can be debated that the low numbers could also reflect low uptake and demand, the fact remains that telecom sector has always been supply driven and uptake follows the availability of the services. Therefore, we would tend to argue that the low uptake is reflective of the inadequate service availability and insufficient quality for mobile financial transactions. The debate can only be settled with the availability of granular data on the type and quality of data services at the level of SSAs, which is the thrust of this brief.

Thus, the ubiquity of the mobile phone itself is not a sufficient condition for readiness toward financial transactions: a fundamental

premise for mobile banking, payment bank services, and other innovative services such as the AEPS and IMPS.

Quality of Service Benchmarks

While network coverage is essential for conducting financial transactions using mobile devices, equally if not even more important is the quality of connectivity. The rising frequency of call and data drops, network congestion and non-uniform and fluctuating signal strength have been a cause of consumer concern in recent years. Indeed, all field surveys have shown the poor quality and



non-availability of quality connectivity as a challenge in operating retail PoS devices for financial transactions. The rising magnitude of the problem has resulted in new regulatory actions to improve the Quality of Service provided by wireless service providers.

TRAI monitors quarterly several parameters reflecting the Quality of Service (QoS) for 2G and 3G services by each licensee. These include:

- Accumulated downtime (benchmark $\leq 2\%$)
- Call set up success rate (benchmark $\geq 95\%$)
- Connection retainability - TCH Congestion ((benchmark $\leq 2\%$)
- Call drop rate (benchmark $\leq 2\%$)
- Connections with good quality (benchmark $\geq 95\%$)
- Congestion at Point of Interconnection (benchmark $\leq 0.5\%$)
- Accessibility of call centre/ customer care (benchmark $\geq 95\%$)
- Calls answered by operators within 90 seconds (benchmark $\geq 95\%$)

According to the latest data (March 2015), in 2G services, of the 184 licensees monitored, 23 were below benchmark in call drops and 62 were below benchmark levels in customer care accessibility, these being the two most important requirements in completing transactions and trouble shooting in case of transaction failure. In 3G services, of 94 licensees monitored, 11 were below benchmark in network availability; and 15 were below standard in connection retainability (worst call drops). Recently, the Department of Telecommunications has sought time-bound commitments from all licensees for upgrading the service standards and has also raised the penalties for substandard services on the monitored parameters.

Meanwhile, there are other supplementary initiatives to improve the connectivity in rural areas and bridge the digital divide across rural India. The National Optic Fibre Network (NOFN), funded by the Universal Service Obligation Fund (USOF), implemented by three central Public Sector Undertakings – Bharat Sanchar Nigam Limited, Power Grid Corporation of India Limited and Raitel - intends to connect over 50,000 Gram Panchayats in the first phase, which will open up new avenues for access service providers like mobile operators, cable TV operators etc. to launch next generation services and spur creation of local employment opportunities encompassing e-commerce and IT outsourcing, as well as e-banking, e-health and e-education'. The remaining 2,00,000 Gram Panchayats are to be covered in a phased manner, hopefully by December 2016.

With all these developments, tracking the quality of telecom services comes across as an important element toward financial inclusion and needs to be included in the overall monitoring framework of the PMJDY Mission Directorate.

The Way Forward

As a first step, there needs to be a unified, harmonised database of the financial inclusion footprint, in terms of outlets, service points, devices, connectivity and agent networks, aggregated and monitored by a single source.

Secondly, there needs to be recognition that internet and broadband footprint and quality of service need to be monitored directly under the PMJDY. The DFS needs to notify (in consultation with TRAI, NPCI, UIDAI and others) the minimum telecom service requirements for devices for conducting mobile financial transactions. This will enable a mapping of device penetration across BC outlets and the requisite telecom connectivity to enable successful financial transactions, and lead to the need for metrics like 'transaction drops' equivalent to 'call drops' in the voice nomenclature.

Thirdly, there needs to be a more granular reporting by service providers to allow a direct mapping of availability and quality of coverage at the SSA level. Conversely, deciding the location of BC outlets should also take into account the availability of requisite wireless services in the SSA. PMJDY should include in its monitoring framework these relevant metrics: coverage maps showing the present status of internet/broadband penetration, quality of telecom coverage – represented by uptime, transaction times and transaction failure data, for each enlisted SSA. The service quality data can be requisitioned through TRAI and a financial inclusion section can even be included in the latter's quarterly review reports as an addendum, given that this initiative directly supports the cause of financial inclusion.

Fourthly, TRAI quarterly monitoring does not mandate reporting data at the district, block or sub service area levels; such granular assessments only be reported by individual telcos, based on tower footprints mapped to the location grids of BC outlets. Thus, an appropriate protocol needs to be put in place for telcos to provide coverage maps for voice and data services in order to enable the PMJDY to generate GIS based heat-maps for telecom coverage and BC outlets on a regular basis.

These few steps will go a long way in accelerating the last mile progress toward financial inclusion.

For what is measured is usually achieved.

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