

Technology-enabled last-mile delivery of banking services

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Abstract

The purpose of this research paper is to study the technology-enabled last-mile delivery of banking services in India. The motivation of this paper is to outline the evolution of banking services in India and how they have drastically changed in the past few decades. As India goes hand in hand with the latest technological advancements across the globe, it's important to reflect the changes in all sections of Indian society. The banking sector in 2010 India was limited to a specific strata of society. The banking services were extensively used by only the top tier urban population. This was because the banking access channels were limited and the economy was largely cash based. The rural hinterlands and underprivileged didn't even have something as basic as a zero-balance bank account.

Aligned with the Indian government's 2014 agenda for financial inclusivity of the unbanked population led rise to unconventional methods of delivering financial services. With technology-enabled last-mile delivery of banking services, the remote areas and a majority of the uneducated population now have access and can exercise power over their finances. People who have zero financial literacy are also slowly moving towards financial independence. There has been repurposing of existing trusted delivery channels like India Post Payments Bank (IPPB) to serve an alternate yet the important duty of banking services. All this is possible only because of the efforts and developments in the technology to make doorstep banking a reality. The use of advanced Point of Sale (POS) machines, UPI, Aadhaar identification has made the doorstep banking process more secure and reliable.

Keyword(s): Last-mile delivery, banking services, technology-enabled last-mile delivery of banking services, point of sale (POS) machine.

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Introduction

The government over the years has been successful in giving millions of underbanked and unbanked citizens a bank account – this financial inclusion has come at a cost. Accessibility to bank branches and ATMs which the urban population takes for granted, is a distant endeavor for the large rural population of the country. The ATM and bank branches are miles away in case of remote villages and access to them are a challenge. Where ATMs are available, there are long queues and the people are not financially literate. As per the 2018 World Bank Report, India has 21.74 ATMs per 1,00,000 Adults. As per a TOI report dated 25th May 2018 “With banks burdened by NPAs and stressed assets, ATM expansion has not increased in the past three years. From March 2015 to March 2018, installed ATMs saw an increase of 46% in metro and urban centres, and 22% in rural areas.”

Financial illiteracy and illiteracy in general is another major issue that is a limiting factor for millions of Indians from deriving benefits accruing out of financial inclusion. What is a good solution for this problem? Last-mile delivery which is technology-enabled which will authorize and create a confidential medium for banking services – if you cannot come to the bank, the bank will come to you.

Many remote places in India are still lacking basic financial infrastructure and due to this, they are losing out on the benefits that the government has laid out for them. Citizens below the poverty line have always suffered from a lack of such services and benefits. They have to go through various middlemen to get their benefits.

The remote areas, literacy rate of the rural individuals and the aged citizens needed a banking revolution. The focused effort to enhance financial inclusion were taken by the government in 2014. In this paper, we will trace the advancements in the last mile delivery of banking services.

Objectives of the study

- To study the emergence of last-mile delivery of banking services.
- To study how technology can make the process more enhanced.
- To study the contribution of Indian post payment banks in financial inclusion.

Methodology

This is a conceptual and descriptive research paper based on a secondary source of data. The data is collected from national and international journals, newspaper, published government reports, RBI report, websites etc. Secondary research involves reviewing past data and re-analyzing or interpreting it. Secondary research helps in understanding what happened and what is happening in present.

Evolution of banking in India

Measuring the success of financial inclusion purely based on the number of account holders in the percentage of poor people is hardly a true representation. To appropriately measure the degree of financial inclusion the people need to have active participation in financial services such as credit, savings, insurance, and investments will help us ascertain the extent of financial inclusiveness.

In September 2013, Reserve Bank of India appointed the Nachiket Mor Committee which suggested a distinguished banking structure to extend the full range of financial services to all sections of society. The recommendations that the Nachiket Mor Committee put forward might have seemed too ambitious back in 2014. Yet, now as most of it is implemented it has proven to be one of the biggest banking revolutions in the country.

The six vision statements of the Nachiket Mor Committee for complete financial inclusion were as follows:

1. Universal Electronic Bank Account (UEBA)
2. Ubiquitous Access to Payment Services and Deposit Products at Reasonable Charges

3. Sufficient Access to Affordable Formal Credit
4. Universal Access to a Range of Deposit and Investment Products at Reasonable Charges
5. Universal Access to a Range of Insurance and Risk Management Products at Reasonable Charges
6. Right to Suitability

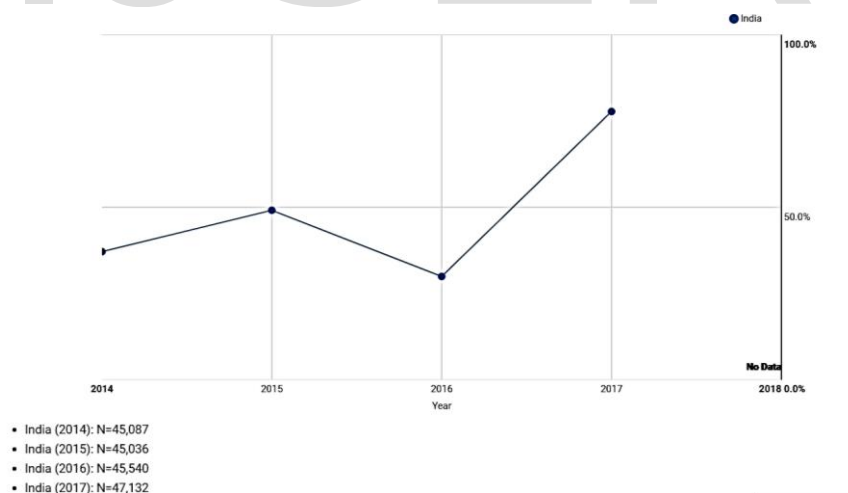
To expand the wings of financial inclusion, the penetration of agent banking is on the sole basis of trust development and excellent customer relationship. It also involves the protection of customer data, quality of delivery of financial services and cash accessibility.

Prime Minister Narendra Modi declared the “Pradhan Mantri Jan-Dhan Yojana” (PMJDY) scheme to deliver over 75 million Indian unbanked citizens with null balance bank accounts. This scheme was declared in August 2014 and was designed to fight the increasing black money in the Indian economy. The bank accounts paved a way for Indian citizens to take control of their finances and to deliver government policies like insurance, pension, credit and a whole array of monetarist services. Due to the PMJDY scheme, the economically included population has grown from 54 per cent to 81 per cent in the period of 2014 to 2018.

Before the demonetization in November 2016, India was a cash reliant economy. The Indian government decided to remove all 500 and 1000 rupee notes from circulation without prior notice. The demonetization movement removed almost 86 per cent of cash from India which was 90 per cent cash-dependent.

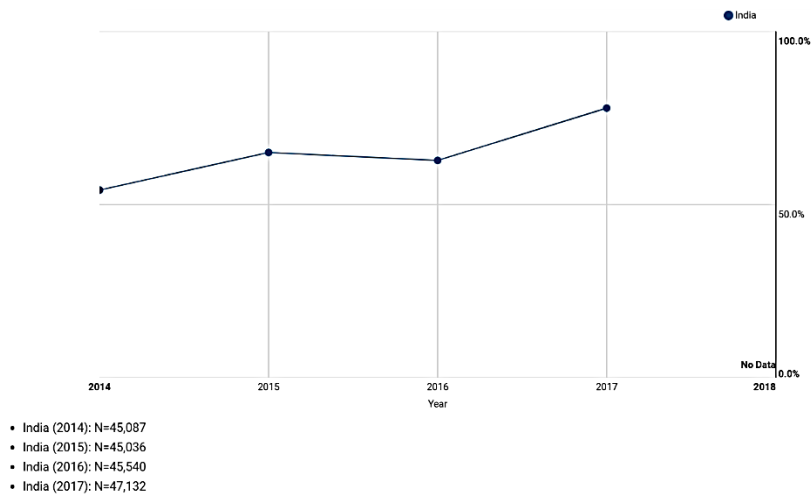
For effective financial inclusion, the basic requirement is the population having registered bank accounts. Over 79 per cent of Indian adults had an approved bank account in 2018. Along with the “Pradhan Mantri Jan-Dhan Yojana” (PMJDY), the Indian government has sanctioned initiatives to better the quality of financial services digitally. This was done through the Aadhaar card biometric identification. The government has since then taken steps to improve the distribution of benefits by linking the Aadhaar cards with SIM cards, mobile phones and most importantly financial services. The access to financial institutions for the underbanked inhabitants like women, below poverty individuals, rural people was the result of the financial inclusion PMJDY scheme.

Figure 1: Digital inclusion graph for India from 2014 to 2018



Source: The Financial Inclusion Insights Program, InterMedia.

Figure 2: Financial inclusion graph for India from 2014 to 2018



Source: The Financial Inclusion Insights Program, InterMedia.

The plans to include all citizens also comes ahead of the increase in digital transactions over the years. Acceptance of the digitized payment modes is still low, as the nether parts of Indian society are still underbanked.

Owing to the growth of the Indian population the financial inclusion was long overdue. With a population of over 138 crores as of 2020, India contributes to 17 per cent of the world population. Over 65 per cent of the Indian population resides in rural areas. The need to establish reliable channels for the rural population to move over to financial institutions for handling finances was greatly needed.

The need to consider how to repurpose existing channels like the Indian postal delivery to set up trusted mediums for the illiterate, remotely located and aged citizens of India an easier solution for their banking woes.

The advancement of POS machines has also increased between 2014 and 2018. The POS machines with biometric checking can prove to be instrumental in tech-enabled last-mile delivery. The postal networks of India are so embedded in the society that it would be easy to penetrate and provide essential financial services.

Role of India Post Payments Bank (IPPB)

India Post payments bank (IPPB) has been instrumental in making financial services accessible to all. The financial services that IPPB provides give financial power to the zero balance bank accounts. Their efforts to make the population of India more financially literate has not gone unnoticed. The customers can enjoy the banking services at their doorstep more than 300,000 postmen and Grameen Dak Sevaks.

Some of the services that IPPB offers are:

Fee and Fund Transfer: One of the best things about having an IPPB account is that the patrons can choose from a wide range of payment services to send money to family and kin. IPPB offers services like Real Time Gross Settlement (RTGS), National Electronic Funds Transfer (NEFT) and Immediate Payment Service (IMPS). The payment services provide the customers with a no-stress easy method to handle their finances.

Bill Payment: The people can utilize bill payment services to pay for their utilities. Bill payments to merchants are also possible through the IPPB account.

The Direct Benefit Transfer (DBT): The Government of India declared the direct benefit transfer policy in 2013. The scheme was aimed at moving subsidies directly to the beneficiary's account without any corruption in the middle. Indian citizens with an IPPB account could benefit from the DBT easily and efficiently. The steps for verifying as a valid DBT beneficiary are extremely simple. A simple link of the IPPB savings account to the Aadhaar card is all it

takes. The DBT money will be deposited in their IPPB account and the account can be managed from the nearest post office.

Indian Post Payments Bank is responsible for bettering the rural and semi-urban banking setup by 2.5 times than any other bank in India. The IPPB is evidence that the Indian Government has advanced plans to further its financial inclusion of 2014.

IPPB has successfully managed to get over two crore customers from 2018 to 2020. With such a huge number of accounts and beneficiaries, IPPB has portrayed the true possibility of financial inclusion. IPPB has facilitated over 1.36 lakh post offices and enabled around 1.9 lakh postmen. The three-fold pay increase for the Grameen Dak Sevaks and the postmen is justification to the efforts they are putting in. IPPB couldn't have set up a better precedent for doorstep financial services to the underbanked population.

The biggest digital literacy program to have undertaken in the financial history of India was pioneered by IPPB. They have spent over one crore man-hours to train and certify postmen, postal assistants and Grameen Dak Sevaks as banking supplier. Neighbourhood postman becomes your reliable financial service provider.

The further increase in the connectivity and to get more Indians under the financial inclusion wing, the Indian government declared Aadhaar Enabled Payment System in September 2019. A customer can enjoy all the services of a normal bank account like deposit and withdrawing cash, funds transfer, balance check and much more with easiness. These services are provided irrespective of the bank that manages the customer's account, this makes the last mile delivery more inclusive.

IPPB has turned out to be the biggest interoperable banking service provider to the citizens of India having an account with any bank. The patrons need to simply complete an Aadhaar identification along with fingerprint scan to avail the financial services offered by IPPB. This is the power of modern technology.

First steps are always the most difficult. However, IPPB has helped the financially backward community in remote areas to take the first steps to financial independence. The convenience of carrying out transactions through trusted channels like the India Post makes IPPB stand out as the leading last-mile delivery banking service provider.

The main objective of IPPB is to empower the destitute parts of society. IPPB has delivered savings accounts to migrant labourers, small businesses, low-income families and unorganized sector employees. The financial inclusion plan of the Modi government has made actual waves with the IPPB doorstep payment services.

How technology enabled the last-mile delivery of banking services in India?

In 2020, a developing country like India is contributing as the second largest country on the planet. In 2019, the digital economy in India was growing 1.5 times faster than the global average. The mobile transactions have increased exponentially from 2014 through 2020. India as a nation has been certainly catching up to consumer needs by providing ease of digital transactions.

There are several reasons why technology-enabled last-mile delivery has been possible in India like:

- Better internet connection
- Cheaper data rates
- The advanced technology of POS machines
- Financial inclusion
- Availability of repurposing delivery channel

The quality of financial services has been enriched by e-commerce while also improving the possibility of scalability and better operating productivity. However, the inclusivity in institutional finance access remains a no-show as around 54 per cent of the population is still not a part of official financial institutions, a NABARD study of 2018 said. RBI 2013 reports show that over 90 per cent of the small businesses had zero links to proper financial bodies. Additionally, over 60 per cent of the rural and metropolitan population don't even have an active bank account, to begin with.

There are two models which have driven financial inclusion through digital or mobile banking in India:

1. Financial service providers having a partnership with mobile network providers to deliver mobile financial services. To extend the drive of banking the unbanked, financial service providers tying up with mobile network providers has led to low-cost solutions for the delivery of financial services. An example of this would be, Musoni was the first completely cash independent microfinance organization in the world in which patrons could repay and receive their finances via Safaricom’s M-PESA interface system.
2. A mutual partnership between financial service providers and payment banks to pull in more access points. The Aadhaar-enabled payment system (AePS) supported by the unified payment interface (UPI) has played a crucial role.

Digital payments along with efficient credit system will enterprise financial inclusion. It will help make the new business model more robust, secure and scalable. For extending the reach of financial services machine learning and artificial intelligence can prove to be essential. Additionally, ML and AI can also help in the penetration of financial services to the hinterlands. Table 1 illustrates the proliferation driven by the PMJY scheme.

Table 1: Pradhan Mantri Jan Dhan Yojana Beneficiaries as on 20 May 2020

Bank Name / Type	Number of Beneficiaries at rural/semiurban centre bank branches	Number of Beneficiaries at urban metro centre bank branches	No Of Rural-Urban Female Beneficiaries	Number of Total Beneficiaries	Deposits in Accounts(In Crore)	Number of Rupay Debit Cards issued to beneficiaries
Public Sector Banks	18.01	12.76	16.65	30.77	104306.46	24.70
Regional Rural Banks	5.70	1.01	3.83	6.71	25102.85	3.28
Private Sector Banks	0.71	0.54	0.67	1.25	3908.59	1.14
Grand Total	24.42	14.31	21.16	38.73	133317.91	29.13

Source: <https://www.pmjdy.gov.in/account>

Role of Unified Payments Interface (UPI): Unified Payments Interface (UPI) is a system in which multiple bank accounts are accessible through a single mobile application. This helps to merge all banking features, merchant payments and smooth fund transfers under one roof. UPI also tailors to ‘Peer to Peer’ collect request which can be paid as per convenience and requirement.

What is the future of technology-enabled banking?

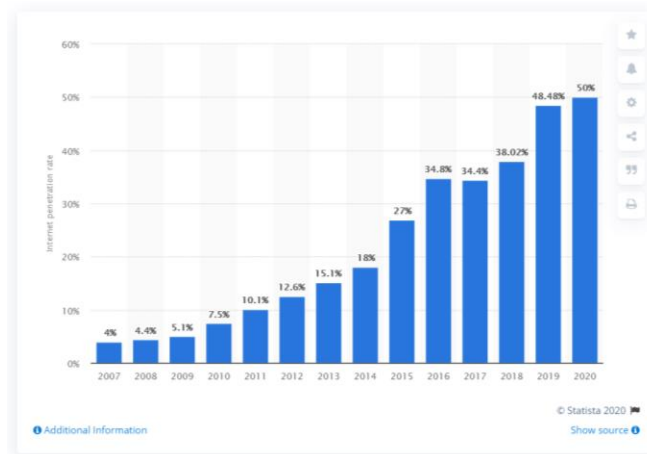
The realm of technology is ever so dynamic and changing. The advancements and innovations are so rapid that it’s often difficult to catch up on the latest trends. While it’s easier for developed nations to implement such practices on a larger scale, India, on the other hand, has always been on the forefront for digitizing the nation.

The smartphone penetration in Indian society has been on the rise since affordable mobile phones have entered the market. However, a majority of phone use is for making calls. There is a fear set in the minds of the impecunious people towards online threats. That’s the reason why most people don’t go for mobile transactions.

Repurposing of existing channels which are most trusted by rural individuals like the India Post has redefined the banking sector. Inclusivity and empowerment of the underbanked population have never happened at such a scale. There is enough reason to believe that a majority of the Indian population will be dependent on these channels for a very long time. Not only because they are convenient, but also owing to the nature of the population in India.

Doorstep banking services have modernized the technology aspect to cater to the thousands of underprivileged citizens. As India faces more such revolutions in the digital space, all the citizens must be at the same pace with financial independence and benefits.

Figure 3: Internet penetration rate in India from 2007 to 2020



Source: Statista (<https://www.statista.com/statistics/792074/india-internet-penetration-rate/>)

Internet usage in India plays an important role in determining the accessibility of mobile financial services. India currently stands second in the largest online market with 560 million users. Even though there are so many internet users, the internet penetration rate is shockingly around 50 per cent in 2020. This means that only half of the vast 1.37 billion Indians had access to the internet in 2020. Internet accessibility has considerably increased from 2015 when it was around 27 per cent.

Internet accessibility depends on a lot of factors which include socio-economic divide and gender. In 2019, it was estimated that there were 290 million Indian rural internet users as opposed to the 337 million urban users. Also to note here is that a majority of the internet users are male, this gender gap is more shocking as you compare it with rural hinterlands.

The increase in the availability of cheap data rates and government policies under Digital India are the driving forces behind mobile internet access. The policies and initiatives under the Digital India campaign are moving towards making mobile phones the prime internet access device. The 4G networks are most widely used across urban and rural India in 2019.

Effect of Coronavirus pandemic: Banking services

Technology-enabled last-mile delivery of banking services is even more relevant in the current 2020 scenario. India is fighting a battle to eradicate and curb the spread of the deadly coronavirus. In the situation where India is facing quarantine and nationwide shutdown, banking services are increasingly difficult to access. The banks are deemed to be essential services, continue to operate at reduced strength.

The coronavirus pandemic has posed many challenges, especially with regards to survival. Many people are stranded in unknown cities. Their way back home is also not definite.

Indian Post Payments Bank (IPPB) has proven to be a boon in these trying times. Nationwide lockdown across India was declared on March 24. Ahead of the COVID-19 outbreak, up until March 31st, IPPB had over 6.5 lakh transactions. During the lockdown, another 34 lakh payment transactions were made through Post Office Savings Bank.

As rightly said by Ravi Shankar Prasad, Union Minister for communications, electronics & IT, and law & justice, IPPB is revolutionizing the financial landscape of India with the interoperable doorstep banking services. The last mile connectivity to people from all the sections of society has truly made financial inclusivity possible.

Banking operations were already to a minimum and the unorganized sector is getting affected. Most of the labourers don't even have bank accounts, to begin with. Amidst the lockdown period, IPPB in areas like Madurai saw a

significant increase in opening of bank accounts. The unorganized sector workers who are registered with the Labor department were eligible to receive COVID-19 relief.

In a mere 10 day period from 12th May, Madurai district saw over 20,600 bank accounts opened with IPPB. Of the one lakh individuals that were eligible for the COVID relief, 30% of them didn't even have bank accounts, to begin with. IPPB has actively taken steps to register the workers so that they can benefit from the COVID relief provided by the Labor Department.

Since the start of the lockdown, India Post has channelled over Rs 720 crore to over 38 lakh people. This was possible through the Aadhaar Enabled Payments System. In the course of the nationwide lockdown which started on March 24th Post office Saving Bank has carried out around 2.7 crore transactions which are worth more than Rs 40,000 crore. Meanwhile, IPPB transactions stand at 1.3 crore involving Rs 2,854 crore.

Conclusion

It's a matter of time and calculated effort that makes all the difference. As India springs into financial inclusion with full steam, it's important to reflect that these changes are equally beneficial for all sections of society. The IPPB's groundbreaking efforts in making basic financial services accessible to the underprivileged are most commendable.

The proliferation of smartphones and affordable data plans has made way for the growth of mobile banking services. The recommendations made by the Nachiket Mor Committee (2013) have helped the government map out a comprehensive approach to the diverse socio-economic needs of India. The financial inclusion has empowered many small and local businesses, deprived families, aged citizens and unorganized sector employees with benefits. These benefits are so easy to access through the doorstep banking revolution implemented by India Post Payments Bank (IPPB).

The technology-enabled last-mile delivery of banking services encapsulates the very essence of financial inclusion. Repurposing and strengthening customer relations through the already wide and deep-rooted India Post network was the best approach to deliver financial literacy to the impoverished parts of the society. Technology-enabled banking services like secure Aadhaar identification, online mobile banking services, UPI are all stepping stones to a Digital India.

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