CELENT

CASE STUDY

INDIA POST: BANKING SYSTEM MODERNIZATION
WINNER OF CELENT MODEL BANK 2017 AWARD FOR FINANCIAL INCLUSION

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CASE STUDY AT A GLANCE

FINANCIAL INSTITUTION	India Post
INITIATIVE	Banking System Modernization
SYNOPSIS	India Post has played a crucial role in the country's socioeconomic development for more than 150 years, providing financial services to more than 550 million bank account holders across its large network of post offices. In order to promote greater access to financial services for India's rural poor, India Post has implemented a new core banking system across more than 25,000 of its locations, replacing the manual paper-based account processing methods previously in use. When project implementation is complete across its entire network, India Post will operate the largest branch network in the entire world, with 150,000 branches. (In contrast, the largest bank in the world by assets, China's Industrial and Commercial Bank, operates 16,200 branches.)
TIMELINES	• October 2012: Project start date • January 2015: Completion of Pilot (124 locations) • December 2015: Completion of Phase 1 (2,200 locations) • June 2016: Completion of Phase 2 (25,000 locations)
KEY BENEFITS	• Introduction of modern banking services to 25,000 post offices throughout India • Digitization of more than 650 million accounts, allowing for introduction of new services such as online and mobile banking
KEY VENDORS	Edgeverve subsidiary of Infosys (Infosys)

CELENT PERSPECTIVE

- India Post's implementation of a new core banking system (CBS) platform was a massive project aimed at extending the reach and improving the quality of banking services available to the more than 800 million citizens living in India's rural areas.
- A critical objective of the project was to digitize the paper-based account data of India Post maintained in its 150,000 branches and onboard the accounts to the new CBS platform, allowing for the introduction of new services in the rural areas.
- As a result of this project, India Post now operates the largest branch network in India and is on track to run the largest branch banking operation in the world.

DETAILED DESCRIPTION

Introduction

The Department of Posts of the India's Ministry of Communications & Information Technology (India Post) is a ubiquitous part of the rural landscape of India. The first post office is said to have been established in Kolkata in 1727, and since its founding in 1854, India Post has grown to more than 150,000 post offices in every region of India, 90% (139,222) of which are located in rural areas.

Considering that India Post operates ten times the number of post offices than there are police stations in India (15,555 in 2016), it becomes clear that the Indian post office network is a strategic asset of the Government of India in achieving the goal of providing modern banking services to the majority of its citizens that live in rural areas.

Table 1: India Post Bank Snapshot

ITEM	INDIA POST BANK
HQ AND KEY GEOGRAPHIES	Delhi, India 150,000 post offices throughout India
YEAR FOUNDED	1854
KEY METRICS	Assets: US$23.4 billion Branches: 150,000 Employees: 460,500

Source: India Post / Public Sources

According to India Post, the average post office serves an area of just 12.7 square miles and serves approximately 8,000 residents (only 6,300 residents for the rural post offices). For comparative purposes, the United States Post Office (USPS), which handled nearly half of the 300 billion in global mail volume in 2017, currently maintains less than 36,000 post office locations, equating to one post office per 107 square miles and serving an average of 9,628 residents. To put this in a banking perspective, ICBC which is the largest bank in the world by assets, currently maintains roughly 16,000 branches across all of China.

The reach of India Post's 199,295 in-office and network distribution employees is greatly increased by the 261,000 Gramin Dak Sewak (GDS), or postal carriers, that extend India Post's physical footprint by serving rural areas. The GDS are considered a key asset in achieving "The Last Mile Reach" in serving all citizens including the low-income families living outside the urbanized areas of India.

Over its many years of operation, the level of automation in India Post's rural post offices significantly lagged India's general banking standards, and as a result in 2008 Project Arrow was launched by India Post to bring the aesthetics and technology standards of its post offices up to a modern standard. In addition to a refurbishment of India Post's top 1,000 post offices, Project Arrow included a five-year initiative to roll out computerization throughout the entire India Post network.

Part of the Project Arrow defined scope was "to enable Post Offices to play a larger role in the social and economic transformation of the country by taking up new roles and challenges," and Project Arrow set the stage for the core banking transformation project that was to follow, a project aimed at driving financial inclusion through the use of a modern CBS platform.

Opportunity

India Post is no stranger to banking, having established a postal savings program in 1882 in order to enable small savings. By the turn of the 20th century, India Post was the sole agent for these small savings accounts, which were in particular utilized by the rural poor. In the 1980s and 1990s, this postal savings bank took on the role of administering government-provided welfare payments.

While the legacy savings bank did much to promote financial inclusion by providing service through its large network of post offices, the impact of the savings bank program was limited by virtue of its use of antiquated and largely manual processing methods. With account records held for the most part on paper ledgers and spotty telecoms connectivity between post offices, the ability of account holders to perform transactions was limited to the local branch where an account was originally opened.

Furthermore, the nonexistence of an automated account processing system all but excluded the use of digital banking solutions like online and mobile banking, and from a customer's perspective a personal visit to the branch was the only way to transact business. While it is true that services like money orders and even electronic money orders were available for some years in those branches that had received basic network connectivity, the funding of these transactions still took place through the manual updating of a paper account ledger.

As a result of these technological limitations, India Post realized that it had significant room for improvement relative to its potential reach to the unbanked and underbanked in India. In March of 2010, the postal bank maintained 88.6 million basic savings accounts and 225.3 million accounts overall (including accounts relating to the administration of government social security programs).

This is obviously a very large number, but when one considers that India had a population of 1.2 billion in 2010, roughly 800 million (70%) of whom were living in the rural areas served by India Post, financial inclusion has a long way to go. Table 2 contrasts the penetration of bank accounts in the United States, Europe, and India in general and within rural areas, confirming the financial inclusion gap that persists in India.

Table 2: Financial Inclusion in Select World Markets (2014)

COUNTRY	BANK ACCOUNT PENETRATION: OVERALL	BANK ACCOUNT PENETRATION: RURAL
UNITED STATES	93.58%	93.21%
EUROPE	94.84%	94.75%
INDIA	52.75	49.78%

Source: World Bank Global Findex

If India Post were to cut the penetration gap in half and achieve 75% rural bank account penetration, the resulting 250 million new bank accounts would more than double the number of accounts to be serviced by India Post. Clearly, India Post needed a new CBS platform that would unify its millions of accounts across the postal system, provide room for growth in the future, and extend modern digital banking services beyond the current limits of the urban and affluent customers of the banking system.

The IT Modernization Project 2012 (the Project) was initiated in India Post in order to fully automate the banking operations of the Post Office, allowing for the more efficient and effective operation of the existing banking services, the addition of new products and services including digital banking, and importantly the ability of customers to transact across the entire India Post network.

Solution

With Project Arrow having successfully computerized the entire India Post network, in 2012 the Indian government appropriated funding for a multi-year project to implement a modern CBS platform that would eventually reach to all of its 150,000 plus local post offices. The new project, dubbed "India Post 2012," aimed to implement a new systemwide CBS platform to replace the in-house developed Sanchaya Post system (Sanchaya is the Hindi word for savings) used locally by some post offices and the manual recordkeeping systems used by many more rural post offices.

Additionally, the new CBS platform would replace many of the 56 varied and siloed applications used at India Post's head office and in the field, replacing them with a single integrated system to support the account growth that India Post hoped to achieve in promoting financial inclusion in the rural areas of India. The new IT infrastructure would be supposed by a new data center facility utilizing modern application hosting and support technologies.

In August 2012, the Edgeverve subsidiary of Infosys (Infosys) won a competitive tender process for a project estimated at Rs 700 crore to supply the new CBS platform using its Finacle solution. Contracts were negotiated, and India Post and Infosys celebrated the official launch of the project on October 1, 2012, with the project scope and implementation plan completed very quickly, by December 31, 2012.

Since project management system connectivity throughout the India Post network of offices was one of the objectives to be achieved by *India Post 2012*, the project leadership team used Google Sites to create several public websites containing key project data (Figure 2), and progress in the field was measured through the use of Google forms.

Figure 2: Project Management Courtesy of Google Sites
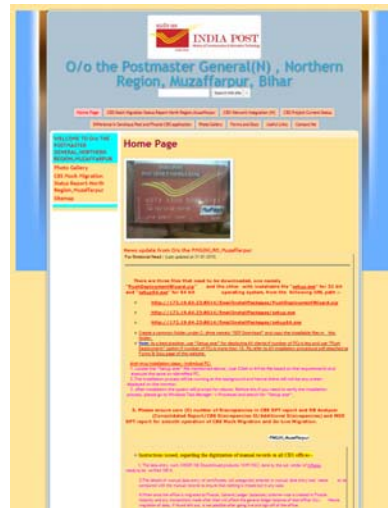
Source: https://sites.google.com/site/cbsmonitoringpmgoffice/

The lack of an existing CBS platform meant that systems migration was not a key issue; rather the centralization of locally held account data from the Sanchaya Post system and manual ledger cards would be the issue.

The single biggest challenge in implementing the Finacle CBS platform was the need to digitize the paper account ledgers that accounted for more than 70 million of India Post's 225 million accounts across more than 25,000 individual post offices. In order to tackle this massive challenge, Infosys hired 220 subcontractors across India, who in turn mobilized an army of more than 10,000 data entry operators to visit each rural post office, including India's famous floating post office on Dal Lake in the Kashmir region.

Figure 3: India Post's Floating Post Office (Dal Lake, Kashmir)

Source: http://www.commons.wikimedia.org

Even with this massive labor force, the digitization of India Post's paper ledgers was complicated. Individual books were kept for each of the 38 individual products in use by the local post offices, and many of the books were very old (more than 10 years), making the paper itself fragile to the touch, and finally in many cases entries were made in the local dialect.

Only a third of India's population speaks the official language of Hindi, and there are 22 other major languages written in 13 different script sets and an additional 720 dialects, so language

barriers were a major challenge. Infosys created a custom vendor management portal for India Post to accept 30,000 batches of digitized account data, allow India Post personnel to validate and accept the data, and allow for Infosys's data entry subcontractors to get paid for their work.

India Post's new CBS platform is Finacle version 10, which is hosted in India Post's new Delhi-based data center and was implemented in a high-availability and scalable hosting environment utilizing a Radware load balancer. Each of India Post's 38 legacy savings products were implemented in the new system using Finacle's product factory, eliminating the need to introduce one-off customizations to support legacy products (Figure 4).

Figure 4: India Post Core Banking System Architecture
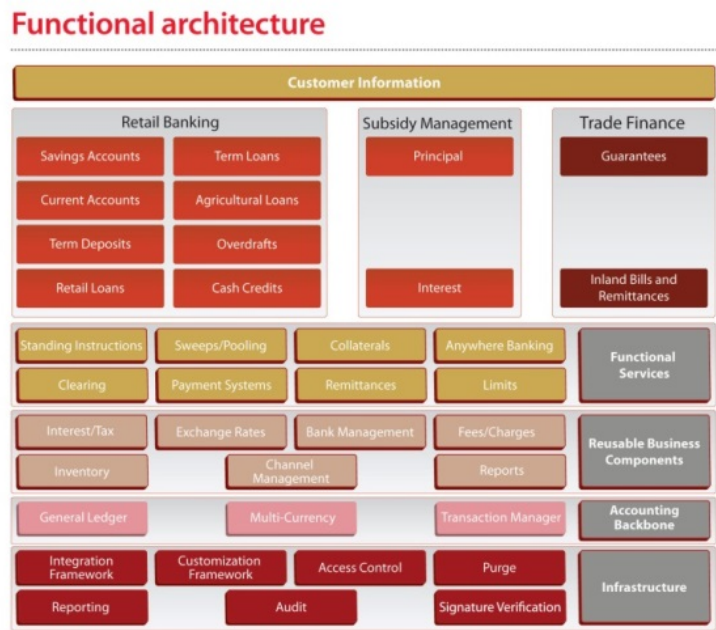
Source: Infosys

Finacle 11E is critical to India Post's planned use of new micro-ATMs (Figure 5) in the future that feature a biometric reader, several card readers to support magstripe and chip-based transactions, a camera that supports both photos and document scanning, mobile data connectivity, and, if that were not enough, a solar panel to allow the device to be recharged in the field where there is typically no running electricity.

Taken together, the resulting portability of India Post's new micro-ATMs is upon implementation expected to allow modern banking transactions to take place at the most remote post offices as well as supporting what India Post refers to as "door-step" banking conducted by their legion of 261,000 walking and bike-riding GDS staff.

Crucial in the future acceptance of the new micro-ATMs is the integration with the government's new Aadhaar system, which is a national identity program that equips nearly every citizen with a unique government identification card and number. While very few of the rural poor possess an ATM card, nearly every one of them carry a Aadhaar card, and so the planned integration of India Post's micro-ATMs with the Aadhaar system allows their clients to withdraw funds and perform other transactions using their Aadhaar card and a thumbprint.

The expected role of the mobile GDS staff in allowing for banking transactions to take place at the customer's own residence in the future is also expected to allow India Post in discharging its

Know Your Customer obligations without requiring rural residents to travel to a post office that may be many miles away.

Results, Lessons Learned, and Future Plans

To date, the Finacle CBS platform has been rolled out to more than 25,000 post offices in three phases: an initial pilot phase including 124 mostly urban post offices, a Phase 1 covering around 2,200 post offices (effectively a pilot for the rural areas), and finally Phase 2 that was a broader rollout to nearly 23,000 additional rural post offices. India Post's first ATM was launched in March, 2016 and by the end of the year more than 1,000 ATMs were installed throughout the network (primarily in urban areas).

With the completion of Phase 2 in November, 2016, India Post now operates the largest network of bank branches in India, surpassing State Bank of India's 16,000 branches. With 650 million accounts representing more than 550 million customers now implemented, Infosys believes that India Post is the largest single financial institution in the world running on a real-time banking solution. In addition to the impact of the new CBS platform on branch operations, the Finacle implementation allowed India Post to introduce new modern online banking and mobile banking applications in early 2017.

The greater agility that India Post has gained by using a modern CBS platform has allowed it to support a number of existing government-sponsored social welfare schemes like the Pradhan Mantri Yojana – Jan Dhan, which is a financial inclusion program of the central government, and new programs, like the recently introduced Sukanya Samridhi account (SSA) savings program for the parents of young girls, which was implemented by India Post within a month of their announcement by the government.

In the last six weeks of 2016 alone, India Post grew deposits by more than INR 450 billion as the Indian government instituted a snap program on November 8 to withdraw small bills from circulation, resulting in mass deposits of soon-to-be obsolete currency in banks. At the present time, more than 30% of India Post's transactions have been initiated through alternative means (other than the post offices), pointing to the significant potential of India Post's other digital banking services.

While to date the India Post 2012 program has been successful, it has not been without its challenges. During Phase I of the rollout, India Post was overwhelmed by the number of support tickets it received — 1,000 in a single month for only 2,200 branches — and feared the level of technical support that would be needed when the system was rolled out to all branches.

Table 3: India Post Project Metrics (2016)

ITEM	METRIC
CUSTOMERS	550+ million
ACCOUNTS	658.7 million
BRANCHES	25,283
ATMS / MICRO-ATMS	1,000 / 130,000+
USERS TRAINED	40,000+

Source: India Post / Infosys

In analyzing the initial volume of support tickets, Infosys found that 90% of the open tickets related to request for additional user assistance, not problems in the operation of the system itself. In response, India Post significantly beefed up its FAQ document, made it more readily available to all users, and made the FAQ a living document that is continually updated based on the content of new tickets and other feedback. Due to these improvements, India Post was able to continue the rollout to 22,000 more branches in Phase 2 while seeing a 25% *decrease* in new help desk tickets.

Finally, India Post continues to navigate the learning curve with the new system, and it has made some changes to its hosting environment. A day-and-a-half system outage in early August 2016 during the Rakshabandhan holiday rush allowed India Post to reexamine its system redundancy and disaster recovery policies. This will undoubtedly serve India Post well in the future, as inevitably as the number of post offices served by the new CBS platform grows, not only average workloads but also peak workloads will increase significantly.

The success to date in implementing Finacle across the current base of 25,000 post offices and more than 550 million customers has not only established India Post as an emerging force in bringing banking services to the rural poor, but positions India Post as the largest operator of banking facilities in the entire world.

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