

## Featured Articles

# Operation of Payment Service Business Based in India

Osamu Okuzawa  
Akemi Komura  
Jayant D'Mello  
Tiju Easow

*OVERVIEW: As part of its global deployment of financial channel solutions, Hitachi, Ltd. added Prizm Payment Services Pvt. Ltd. of India to its portfolio of subsidiaries in March 2014 and is utilizing the business platform it provides to accelerate Hitachi's global expansion. Hitachi Payment Services (formerly Prizm Payment Services) provides payment services using ATM and POS systems, primarily in India. These services are supplied mainly to financial institutions, utilizing a co-creation model that incorporates proprietary data analysis techniques and know-how developed through past experience while also maintaining profitability and efficiency. In the future, Hitachi aims to supply services globally and through a variety of different channels by utilizing its customer base and associated technologies.*

## INTRODUCTION

AS part of its global operations in the field of financial services, Hitachi, Ltd. is seeking to expand its services based on channels such as automated teller machines (ATMs) and the Internet. A central pillar of these operations was its entry into the payment services market in India through the acquisition in March

2014 of Prizm Payment Services Pvt. Ltd., which supplies payment services that include ATM and point of sale (POS) system outsourcing, primarily in India. Prizm Payment Services Pvt. Ltd. changed its name to Hitachi Payment Services Pvt. Ltd. in April 2015.

As its economy develops and incomes grow, the demand for banking services in India is expanding beyond the wealthy to also include the middle classes,

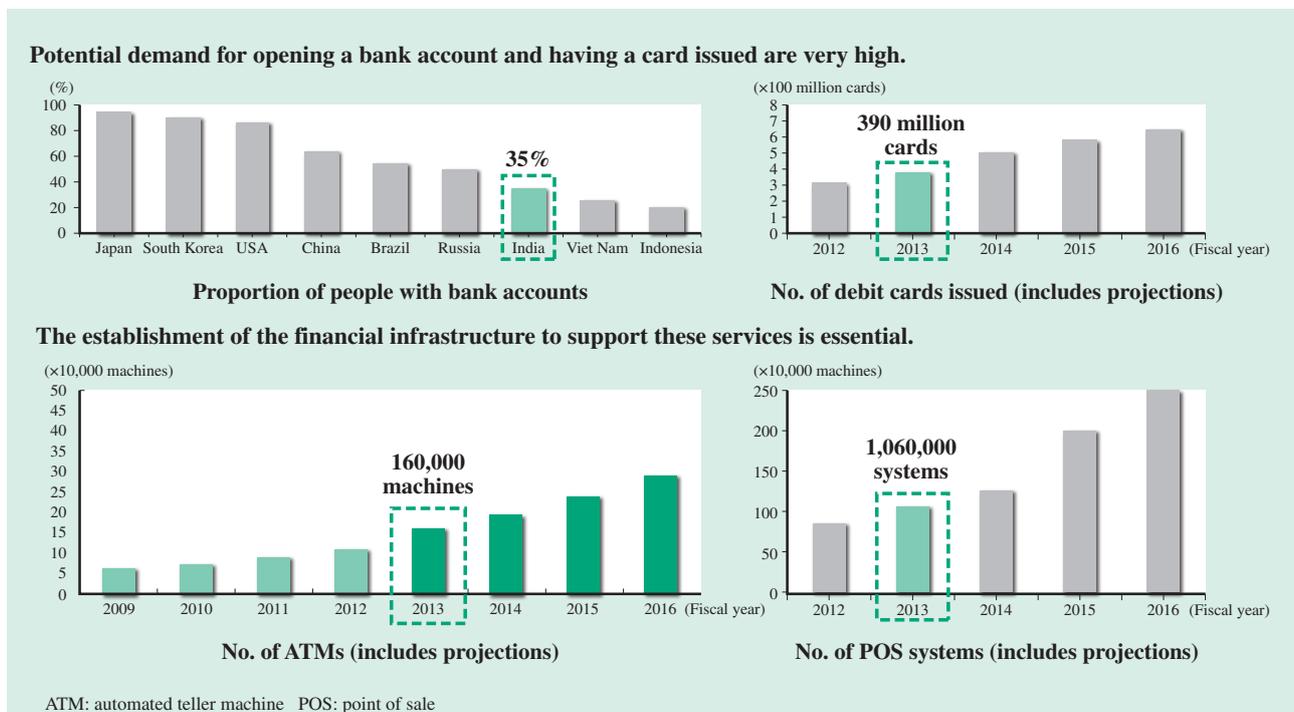


Fig. 1—Financial Services in India.

Compared to developed economies, the proportion of people with bank accounts and the number of cards in use are low. It is anticipated that the number of ATM and POS systems will grow dramatically as banking becomes more widely adopted.

creating an urgent need for the provision of financial and payment infrastructure (see Fig. 1). Currently, only about 35% of the population has a bank account (compared to more than 90% in Japan), and the total number of ATMs at the end of FY2013 (approximately 160,000) was less than one-tenth that of Japan on a per capita basis. Consequently, strong future growth is anticipated.

The Reserve Bank of India (RBI), India’s central bank, has set “financial inclusion” as a policy objective since 2005, and is implementing policies for extending financial services throughout the country, including to rural villages, to increase the proportion of people with bank accounts and the number of ATMs. Recently, rapid progress has been made on establishing a large number of accounts over a short period of time through the Prime Minister’s People Money Scheme [the Pradhan Mantri Jan-Dhan Yojana (PMJDY)] announced in August 2014.

This article describes the services of Hitachi Payment Services, which plays a central role in the global deployment of payment services, and the future outlook for the company.

Its main business consists of ATM and POS system outsourcing services for financial institutions, and it has the top market share for ATMs, with the approximately 35,000 it operates representing about 20% of all ATMs in India. It also operates over 190,000 POS and over 20,000 mobile POS (mPOS) systems, nearly 20% of the market (all figures are as of March 2015 and are based on research by Hitachi Payment Services). The system that links ATM and POS systems to the various bank systems operates from Hitachi Payment Services’ data center.

The RBI’s policy of “financial inclusion” permits the installation and operation by non-banking companies of “White Label ATMs” (WLAs), and Hitachi Payment Services is authorized to participate in this business.

By supplying WLAs and bank ATM services through its Indian service network, Hitachi Payment Services is undertaking a “Social Innovation Business” that contributes to the wider adoption of financial services in India. This is also an essential business for other emerging economies where financial services are underdeveloped, and can be thought of as a social innovation that can be introduced globally.

**OVERVIEW OF HITACHI PAYMENT SERVICES**

Hitachi Payment Services is a payment service provider that was established in March 2008 and has its headquarters in Chennai, India. It has approximately 1,200 employees (as of March 2015). In addition to its headquarters, it also has a sales center in Mumbai and over 12 offices around India. The company has built up a strong customer base in India based on the extensive experience of its founding management team in financial services, providing services nationwide, primarily to major Indian banks.

**FEATURES OF HITACHI PAYMENT SERVICES**

**Service Model**

The ATM services that Hitachi Payment Services supplies take on five different forms depending on the terms of the contract with the customer (see Fig. 2).

The vertical axis in the figure represents progressively higher service levels, with the bottom-most level being a Maintenance Service contract for maintaining a bank’s ATMs. The level above that is the Managed Service contract for handling the day-to-day operation of bank ATMs as well as maintenance. The third level, called the

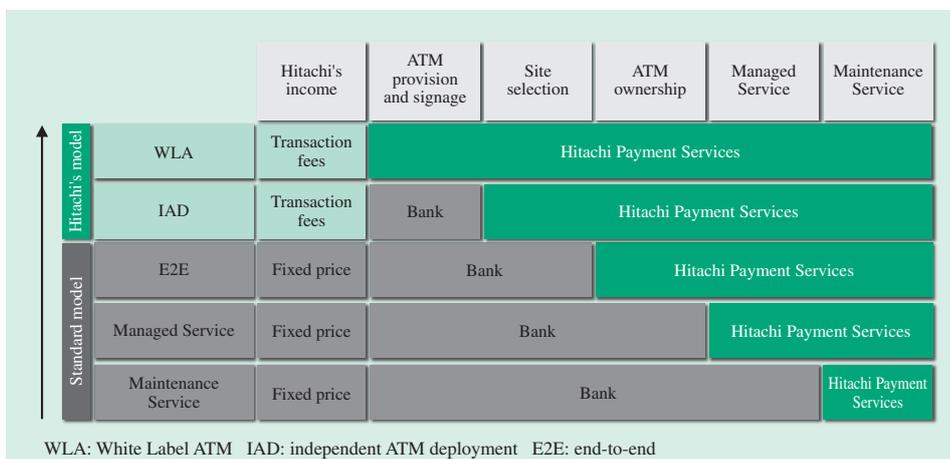


Fig. 2—Hitachi Payment Services ATM Services. Services are offered on a number of levels with different roles for Hitachi Payment Services and the customer (bank). Each of these has a different revenue model.

End-to-End (E2E) contract, involves Hitachi Payment Services owning the ATM assets as well as providing the Managed Service. Level four, Independent ATM Deployment (IAD), is like E2E in that it provides services on the bank's behalf, but in addition to Hitachi Payment Services owning the ATMs, it also selects where to site them. This approach is based on a pay-per-use contract in which income depends on the volume of transactions, such that service income is increased by locating ATMs where they will attract the most transactions. Level 5 corresponds to WLAs for which there is no contract with a bank. These ATMs are installed and operated under Hitachi Payment Services' own brand and generate income by charging transaction fees.

The business consists primarily of operation services in which operation is outsourced to the ATM vendor and maintenance services, which in Japan are usually handled by the financial institution.

### Service Strengths

Among the strengths of Hitachi Payment Services' services are its selection of ATM sites and their performance optimization (see Fig. 3).

Hitachi Payment Services' services include the IAD model and WLAs in which it selects the ATM sites for itself and optimizes their performance.

Site selection is performed on a work bench management system (WBMS) using the following procedure.

(1) Hitachi Payment Services' analysis division analyzes the movements of people based on information about transportation, shopping, and other facilities around the location of interest.

(2) In addition to the above analysis, Hitachi Payment Services selects potential sites with reference to what other ATMs are installed nearby and their available transactions (host/competing bank classification, number of transactions, and so on), and posts these on the WBMS.

(3) Intermediaries based throughout India survey their respective districts and register potential candidates. The candidate details, contract conditions, infrastructure, and other factors are confirmed and provided to Hitachi Payment Services through the WBMS.

(4) Hitachi Payment Services assesses these and initiates an installation project for those candidate sites that pass assessment.

After installation, Hitachi Payment Services undertakes a "performance improvement program" (PIP) that applies the following procedure to all ATMs to optimize their performance.

(5) A profit calculation is performed by calculating daily and monthly sales (fee income) and costs for each ATM.

(6) Error information (symptoms and cause) from each ATM is collected at a center. The information is classified based on whether or not errors are the responsibility of Hitachi Payment Services and the corresponding downtimes are calculated.

(7) ATMs in need of improvement actions are identified from the above profit and downtime information.

(8) The person assigned the job of improving an ATM visits the site to assess the situation.

(9) Improvement actions are determined and then implemented. These may include changes to the external appearance such as labeling or signage, infrastructural improvements such as the installation of a solar panel or uninterruptible power supply (UPS), cost savings such as renegotiating rent, or security improvements.

(10) Performance is monitored after the actions are implemented. If no improvement is achieved, the ATM is moved or taken away.

In this way, service profitability and availability are improved by utilizing data analysis and the nationwide service network and working through a plan, do, check, and act (PDCA) cycle for selecting ATM sites and improving performance.

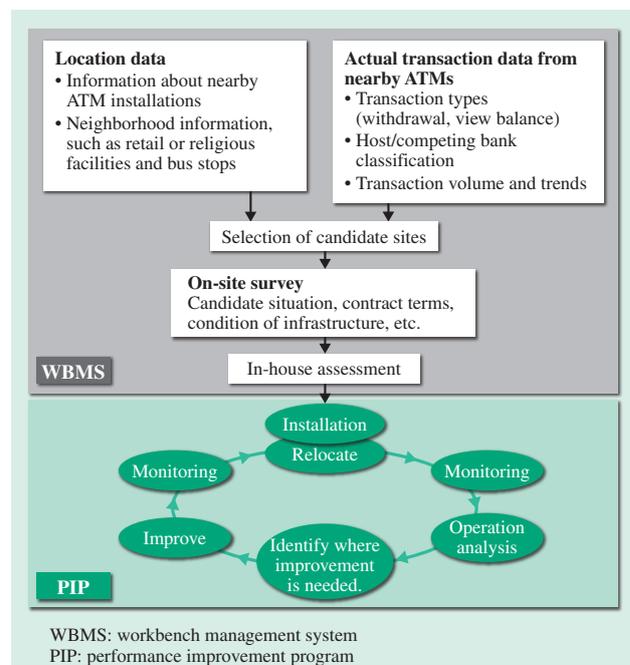


Fig. 3—ATM Site Selection and Performance Optimization. Hitachi Payment Services uses data analysis to determine where to site ATMs, and performs ongoing monitoring after installation to improve performance.

## SERVICE DEPLOYMENT PLAN

### Deployment Outside India

Expansions in financial services such as payments and transfers are currently also occurring in such places as Southeast Asia and the Middle East. Meanwhile, there is also demand from financial institutions for system outsourcing to cut costs. Accordingly, Hitachi Payment Services is considering expanding its business model for ATM services and POS system services to other countries in the future.

Because business conditions such as market size and regulations vary from country to country in relation to such things as how to enter the market and the choice of partners, it is essential to proceed in a way that is appropriate to the new market. Hitachi Payment Services is also looking to partner with other businesses from outside the financial sector.

### Synergies with Hitachi

(1) Cash recycling ATM installation and improvements to operation processes

While cash recycling ATMs that can accept and dispense cash are common in Japan, overseas, the term ATM typically refers to cash dispensers (CDs).

Hitachi has the leading share (as of December 2013, based on research by Retail Banking Research) of the Chinese market for cash recycling ATMs, a technology that was pioneered in Japan, and is also seeking to expand its markets and the scale of its business in other countries.

The benefits of making greater use of cash recycling ATMs include making efficient use of banknotes by dispensing deposited notes, and the consequent savings on operating costs. The key to increased use lies in the effective application of the operational know-how that has been built up in Japan and China. In the Indian market, the installation of cash deposit machines\* (CDMs) is anticipated to increase rapidly for the time being as a result of RBI security measures, with a subsequent move to cash recycling ATMs anticipated to follow in the future. To facilitate the introduction and wider use of cash recycling ATMs, studies of a system suitable for use with Hitachi Payment Services' services and an operations business were launched in June 2014.

In terms of the system, a study has commenced into infrastructure that is suitable for delivering both solutions and services based on the integration of

an existing system from Hitachi-Omron Terminal Solutions, Corp. with the Hitachi Payment Services system. With regard to service delivery in particular, this will be structured so as to include support for automated equipment from other vendors (including CDs, CDMs, and cash recycling ATMs).

The operation study will include plans for revisions to cash counting and reconciliation practices, and more advanced functions for predicting transaction volume through a switch from CDs to cash recycling ATMs. Because advanced banknote recognition technology and banknote feeding technology are required to use the cash recycling operation (dispensing of deposited notes), particularly in countries with a high risk of counterfeit banknotes or deliberately altered banknotes, and countries with a large number of worn banknotes, the plan is to establish an effective operating model that incorporates the technologies and know-how of Hitachi-Omron Terminal Solutions.

This enables the establishment of a business that can cover all aspects of ATM use, combining the business of Hitachi-Omron Terminal Solutions, which seeks to increase sales of cash recycling ATMs and offer solutions in addition to equipment sales, with the business of Hitachi Payment Services, which purchases machines and offers services across their entire life cycle. From this platform, Hitachi will achieve the business expansion that formed part of its initial plans and involves extending operations overseas from the base in India.

(2) Coordination with payment solutions from other industries

Hitachi is considering seeking to make a further contribution to social innovation and expand operations by using Hitachi Payment Services' payment service as a base and incorporating other payment solutions from within Hitachi (see Fig. 4).

One example is a card-based ticketing solution for public transportation<sup>(2)</sup>.

Emerging economies such as India are building public infrastructure such as railways, airports, and roads. In India in particular, the construction of metro lines is planned or has already commenced in numerous cities, and this includes the introduction of new payment methods such as smartcards. For the electronic money market, the aim is to combine Hitachi Payment Services' payment service platform with Hitachi's electronic money solutions (including a smartcard transportation ticketing system) to implement electronic money services in emerging economies. Because the issuing of electronic money

\* Use of a cash recycling ATM for deposits only.

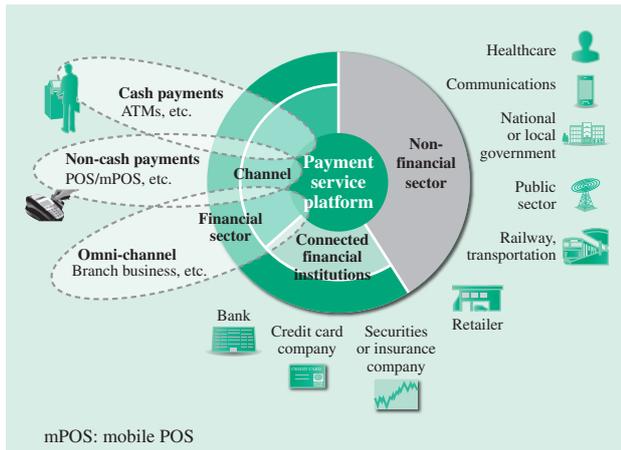


Fig. 4—Spread of Payment Services.

Hitachi anticipates that payment services will expand from the ATM and POS/mPOS services currently provided by Hitachi Payment Services to include collaboration with financial institution branches, retail, transportation, government and various other sectors.

involves financial institutions, it is closely related to Hitachi Payment Services' past business activities and its customer base.

The second example is a loyalty program.

Already in use in Japan, the loyalty program solution<sup>(3)</sup> from Hitachi Solutions, Ltd. is both a tool for offering promotions to end users and a marketing tool for retailers. Use of loyalty programs is becoming more widespread in India, creating a need for systems that are easy for both users and loyalty program administrators to use. Through integration with this solution, it is possible to offer loyalty programs, such as for encouraging ATM use or for retailers that use

POS systems, by utilizing Hitachi Payment Services' payment platform to collate and manage loyalty program points.

By combining these highly reliable systems built by Hitachi with services already in practical use in India, the aim is to deploy solutions globally.

## CONCLUSIONS

This article has given an overview and described the features of the payment services provided by Hitachi Payment Services, an Indian company that is playing a major role in the global deployment of financial channel solutions.

Through collaboration with different parts of Hitachi, the aim is to make services deeper and broader, and to expand operations not only in India but throughout the world. In this way, Hitachi intends to contribute to social innovation by implementing payment services that offer seamless payments through a variety of channels, including other industries such as retail or transportation.

## REFERENCES

- (1) K. Tanaka et al., "Global Deployment of Cash Management Solution with Core Role for Banknote-recycling ATMs," *Hitachi Review* **63**, pp. 364–368 (Aug. 2014).
- (2) Smartcard Management Systems, Infrastructure Systems, Hitachi,  
[http://www.hitachi.com/businesses/infrastructure/product\\_solution/mobility/passenger\\_information/smart\\_card.html](http://www.hitachi.com/businesses/infrastructure/product_solution/mobility/passenger_information/smart_card.html)
- (3) Points Management System, Hitachi Solutions, Ltd.,  
<http://www.hitachi-solutions.co.jp/pointinfinity/> in Japanese.

## ABOUT THE AUTHORS



**Osamu Okuzawa**

*Payment Services Business Planning, Financial Channel Solutions and Payment Services Division, Information & Telecommunication Systems Company, Hitachi, Ltd. He is currently engaged in the business and solution planning of payment services. Mr. Okuzawa is a member of the Information Processing Society of Japan (IPSI).*



**Akemi Komura**

*Solution Planning Department, Payment Services Business Planning, Financial Channel Solutions and Payment Services Division, Information & Telecommunication Systems Company, Hitachi, Ltd. She is currently engaged in the solution planning of payment services.*



**Jayant D'Mello**

*Hitachi Payment Services Pvt. Ltd. He is the Director of the ATM business and Emerging Payments and International.*



**Tiju Easow**

*Hitachi Payment Services Pvt. Ltd. He is the Vice President of marketing.*