March 2021

Promoting and incentivising manufacturing of PoS terminals in India



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Message from FICCI



Sudhakar Ramasubramanian
Advisor, FICCI Fintech Committee

Digital payments were gaining traction in India even before the COVID-19 crisis. Demonetisation kickstarted the large-scale adoption of digital payments in India in 2016, and the Government's efforts over time have kept the momentum going. The turn of events in 2020 accelerated the growth trajectory of digital payments as they were perceived as safe and convenient modes of payment. The sudden growth in e-commerce sales and online retail added to this trend. The Reserve Bank of India's (RBI) recently launched Digital Payments Index grew from 153.47 in 2019 to 207.84 in 2020.[i] While this is a composite score that reflects many facets of the digital payments ecosystem, it also reaffirms the permanent and strong shift that we are witnessing.

The growth of digital payments as a safe and convenient medium for financial transactions makes it necessary to strengthen the acceptance infrastructure across the country. Data from the RBI shows that the PoS acceptance infrastructure in India is currently concentrated in tier 1 and 2 cities.[ii] The RBI has recently announced the creation of a Payments Infrastructure Development Fund (PIDF) to encourage acquirers to deploy PoS infrastructure in tier 3–6 centres and north-eastern states. As the deployment of acceptance infrastructure gains pace, there will be a jump in demand for PoS machines.

PoS machines have evolved from just accepting debit and credit cards to allowing payments through NFC-enabled contactless cards, generating quick response (QR) codes for accepting payments and leveraging Unified Payments Interface (UPI). Further, PoS providers are also offering value-added services that support merchants to run successful businesses and take care of their payment requirements. These services include accounting and inventory management, payroll management, merchant financing and disbursing loans to customers. The market is also witnessing the growth of soft-PoS that offers a range of benefits and can complement PoS terminals well.

Currently, India is highly dependent on imports for PoS terminals. Given the growing demand and the country's focus on Aatmanirbhar Bharat (self-reliant India) to promote domestic manufacturing, this is one sector with a lot of potential. However, capitalising on this potential will require significant support from the Government.

FICCI and PwC have prepared this detailed report to highlight the possibilities on offer for manufacturing PoS terminals in India as well as outline the support required from the Government to boost the domestic manufacturing ecosystem. Several rounds of consultation were held with different ecosystem players while preparing this report, and the report lists out a set of suggestions for the Government's consideration on the basis of the recommendations received. We hope that this report will be useful to policymakers who are working towards promoting indigenisation of high import-dependency items.

I would like to thank the team at FICCI Secretariat and our colleagues from PwC for undertaking detailed research and bringing out this timely report. I would also like to thank all the industry stakeholders for contributing with their highly relevant and important inputs.

i https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=50901

ii SBI data

Message from PwC



Abhijit Majumdar
Partner and Technology Strategy Leader
PwC India

India has witnessed a 300% rise in the adoption of PoS terminals over the last five years. As of March 2020, more than five million such terminals are already in circulation.[iii] A significant change in the buying patterns of consumers post demonetisation and a need for contactless payment alternatives during the COVID-19 pandemic have fuelled the growth of acceptance and adoption of PoS terminals in the country.

Given that India has a large rural population with low access to smartphones and digital literacy, real-time payments may not be able to bridge the gap between cash and cashless payments. This gap can be addressed only with the help of debit/credit cards and the corresponding PoS infrastructure. On the other hand, the upcoming launch of 5G networks in urban centres will give rise to newer use cases for adoption of next-gen PoS terminals that utilise methods and technologies like facial recognition, connected devices and wearables. Adoption amongst the rural population and introduction of 5G will lead to sustained growth of PoS terminals across the country's rural and urban landscapes.

India is primarily an importer of PoS terminals with limited domestic manufacturing capacity. Raw materials and other components required for manufacturing PoS terminals are still largely procured from other countries, while value is added locally in the form of assembling the components. The domestic manufacturing industry faces high logistics and compliance costs, an inverted duty structure, overreliance on other nations for import of components and long supply chains. Despite these structural disadvantages, a few domestic manufacturers have, encouragingly, established a niche for themselves over the last few years by ensuring superior product quality and customisations.

The strong growth in the demand for PoS devices could be the driving force towards enabling India to become self-reliant (Aatmanirbhar) in manufacturing and helping domestic players enter and compete in foreign markets. The Government of India's (GoI) flagship initiatives like Make in India and Aatmanirbhar Bharat (self-reliant India) aim to support the electronics sector and the manufacturing landscape at large.

Capability setup, research and development (R&D), security and quality certifications, procurement and logistics of raw materials, and manufacturing of both hardware and software components are the key requisites in the value chain for establishing a domestic manufacturing ecosystem. Focused interventions from the Government will be required to overcome the challenges in each of these areas if India is to transform into a PoS terminal manufacturing hub and become self-reliant.

iii Database of Indian Economy, RBI: https://dbie.rbi.org.in/DBIE/dbie.rbi?site=statistics

Message from PwC



Mihir Gandhi
Partner and Leader, Payments Transformation
PwC India

Over the last decade, India's digital payments journey has been remarkable. Various factors have the potential to impact the future of digital payments, an important one being the prevalence of acceptance infrastructure in the country. The PoS device industry contributes significantly to the growth of this acceptance infrastructure. In this report, we have carried out a detailed study on the present state of digital cards as well as the PoS industry across India since the evolution of both these industries is interconnected. The card industry has witnessed a consistent rise in the number of debit and credit cards being used. As of FY20, more than 800 million debit cards and 50 million credit cards were being used across India.[iv] More than 5 million PoS terminals were deployed across the country during the same period. This report study highlights the future scope and growth of the PoS industry, backed by various factors like the need for digitisation in rural locations, expected higher usage of cards on PoS devices and offering of value-added services at such terminals.

We have identified other factors that could further contribute to the growth of PoS terminals, including regulatory pushes through the Payments Infrastructure Development Fund (PIDF) and the inclusion of new players such as regional rural banks (RRBs) in the acceptance infrastructure.

This report focuses on the key growth drivers for the industry, changing models, cost-effective innovations on terminals and additional revenues for merchants. It explains the necessity of supplementing the local manufacturing of PoS terminals in the country by introducing soft-PoS terminals/mobile-based acceptance solutions. It also outlines the challenges and regulatory initiatives that could hinder the functioning of the PoS industry in the future. I hope you find this report to be an insightful read.

iv Database of Indian Economy, RBI: https://dbie.rbi.org.in/DBIE/dbie.rbi?site=statistics



01

Market overview

The global payment industry has been evolving significantly owing to changing customer preferences, technology innovations and reforms from governments and regulators. India is keeping pace with these changes and has witnessed remarkable growth, with specific products taking the lead in reforming the Indian payment landscape. The untiring efforts and commitment from the Government and the Reserve Bank of India (RBI), along with other ministries, have led to the exponential growth of digital payments, with many innovations attracting interest worldwide. Along with card payments, Unified Payments Interface (UPI), Immediate Payment Service (IMPS), QR-based payments, Aadhaar enabled Payment System (AePS) and National Electronic Toll Collection (NETC) have been the major contributors in steadily transforming the cash-based economy towards a less-cash economy.

The card industry, along with its acceptance infrastructure, accounts for a majority of the transactions done at merchant locations. Currently, India relies heavily on other countries for the import of point-of-sale (PoS) terminals, which entails huge costs for the acquiring community. Owing to the current COVID-19 pandemic situation, the import of these terminals from other countries has taken a hit. This document focuses on making India self-sufficient in the card acceptance infrastructure market by promoting the manufacture of PoS terminals in the country. This will also give a major push to the Make in India and Aatmanirbhar Bharat initiatives.

Over the years, the volume of credit cards has increased, but not at the pace of debit cards. India has made tremendous efforts and achieved success in financially onboarding a majority of the population into the banking system. As part of the strategy to include the majority of the population into the banking system, debit cards have been issued to people. Although the number of debit cards is huge, they are mainly used for cash withdrawal at automated teller machines (ATMs) rather than swipes at PoS terminals and e-commerce transactions. In contrast, even though the number of credit cards is lower, their usage for ATM cash withdrawals is negligible in comparison to swipes at PoS terminals and e-commerce transactions. (See the table below.)

Card usage statistics

Card (FY 2020)[1]	ATM	PoS and e-commerce
Debit card	~64% of the total volume of transactions	~36% of the total volume of transactions
	~8,867 million transactions	~5,089 million transactions
	~INR 35,341 billion – value of transactions	~INR 7,005 billion – value of transactions
Credit card	~0.5% of the total volume of transactions	~99.5% of the total volume of transactions
	~10 million transactions	~2,188 million transactions
	~INR 48 billion – value of transactions	~INR 7,323 billion – value of transactions

However, with the constant push for digitisation along with multiple reforms, the last quarter of 2019 and first quarter of 2020 saw the value of card and mobile payments surpassing that of ATM withdrawals. The COVID-19 pandemic also pushed customers to switch to digital modes rather than using cash.[2] This trend will continue during the new normal. The increase in card payments via PoS terminals highlights the scope for growth.

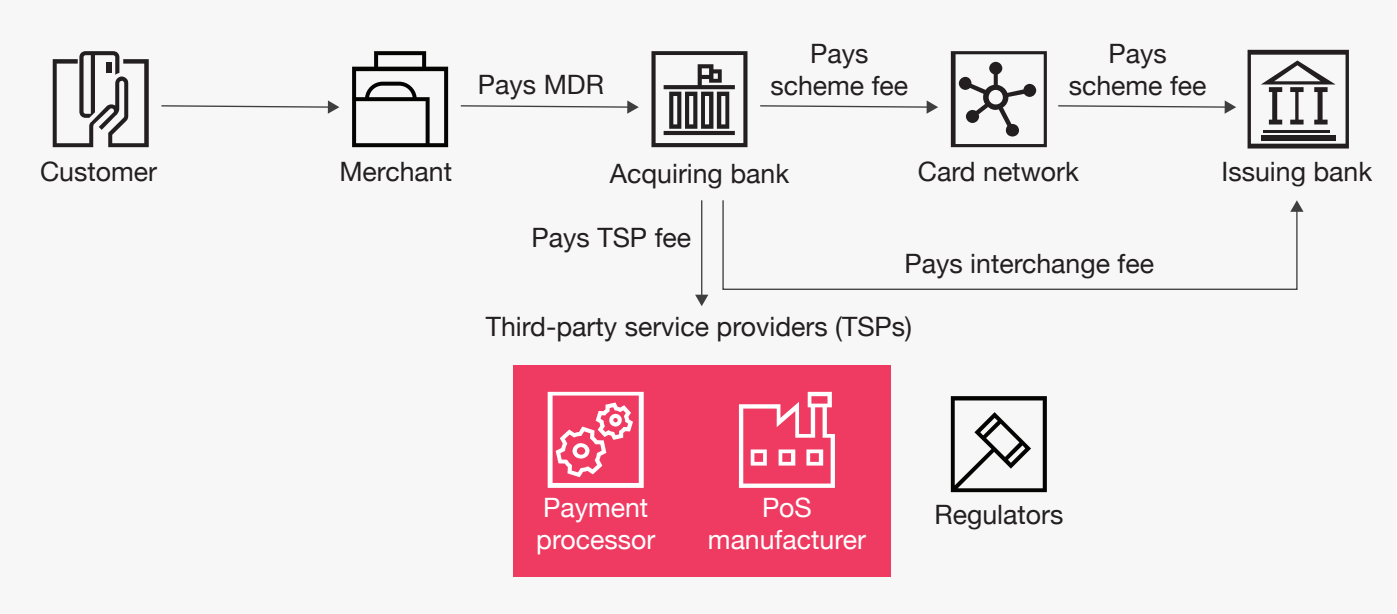
Before we deep dive into the market opportunity for these terminals, let us understand the current card payment ecosystem and the impact on the different players.



1 RBI data, PwC analysis

2 https://timesofindia.indiatimes.com/business/india-business/digital-payments-widen-gap-with-atm-withdrawals/articleshow/77027593.cms

Card payment ecosystem



Source: PwC

Participants in the card payment ecosystem

Participant	
Customer	The one who holds the card and performs transactions.
Merchant	Accepts payments from the customer using the PoS terminal. The merchant pays the merchant discount rate (MDR) to its acquirer. This rate is agreed upon between both the parties during the merchant onboarding process and, in some cases, it is also regulated by the regulator. In the form of MDR, the merchant pays a certain amount for the usage of the terminal. If these terminals are manufactured in India, this cost can certainly reduce which in turn will boost the acquiring business.
Acquiring bank	Onboards merchant and manages the acquiring infrastructure. Acquiring bank pays the interchange fee to the issuing bank and scheme fees to the card network. The acquirer pays high costs for procuring PoS terminals which are currently imported. By manufacturing the terminals in India, the asset cost can be eliminated and overall, the merchant acquiring business will become cost-effective.
Card network	Responsible for switching PoS transactions.
Issuing bank	Issues cards to the customer.
Payment processor	Manages transaction processing along with other services like reporting.
PoS manufacturer	Manufactures and provides PoS terminals. These terminals are currently being produced outside India and entail huge procurement costs. Manufacturers can be persuaded to set up plants in India which will subsequently reduce the import cost.
Regulators (RBI and MeitY)	The regulator in India has provided an impetus to the PoS ecosystem by setting and modifying regulations over time.



02

Statistics and market opportunity

The debit and credit cards market is one of the strongest pillars of the digital payment landscape, providing opportunities to various entities such as issuing banks, acquiring banks, merchants, payment service providers, card networks and PoS terminal providers. Customers today make payments digitally at in-store merchant locations primarily through either PoS terminals or using a QR code. PoS terminals have a steadily growing market in merchant categories like restaurants, grocery stores, apparel stores, jewellery stores and fuel stations. These verticals record the maximum volume and value of PoS transactions across the country.[3]

3 https://worldline.com/content/dam/worldline/documents/india/documents/worldline-india-digital-payments-report-2019-a-year-in-review.pdf

The card and PoS terminal markets are closely intertwined as the relative growth of the card market will result in the growth of PoS terminal market. The statistics in the subsequent section will throw light on how demonetisation and subsequent regulations for promotion of digital payments changed the course of both these markets. The demonetisation drive in November 2016, which pulled back the circulation of high-value currency notes in the country, paved the way for numerous digital alternatives as lack of currency forced customers to make purchases for goods and services through digital modes of payment. This drive further led to an increase in the demand for PoS terminals across the country to facilitate e-payment options for customers and provide various services to merchants. Further, post demonetisation, the Ministry of Finance announced incentives for the promotion of a digital and cashless economy, which included discounts on fuel payments made through digital means, removal of service tax on MDR for low-ticket transactions, and financial support from the National Bank for Agriculture and Rural Development (NABARD) on rural deployment. These incentives, combined with the effect of demonetisation, led to significant expansion of the PoS and cards industries.



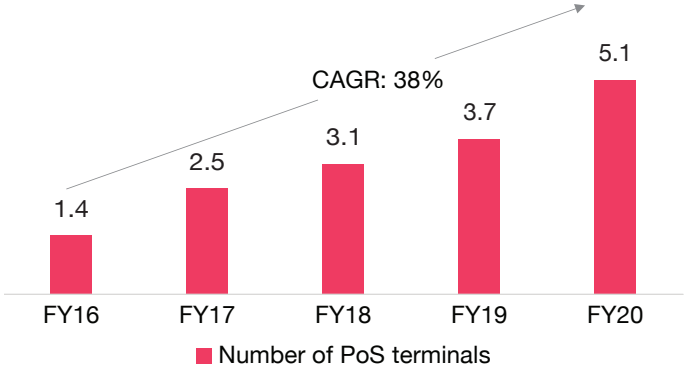
2.1. Current state of PoS and card industries in India

The card and PoS terminal markets in the country have evolved over the years. Some of the key indicators of the current growth and future scope of these markets are discussed below.

Number of PoS terminals

The figure below shows the year-on-year increase in the number of PoS terminals in the country.[4]

Number of PoS terminals (in million)



Inferences:

- A change in customer buying patterns post demonetisation is evident as there was a growth of approximately 79% in the number of PoS terminals from FY16 to FY17.
- The overall compound annual growth rate (CAGR) of ~38% from FY16 to FY20 indicates the significant acceptance and adoption of PoS terminals in the country.
- The PoS terminal infrastructure has more than doubled over the period of these five financial years.
- As per the RBI's vision, the expectation of 5 million[5] PoS terminals by the end of 2021 has already been fulfilled during FY20.

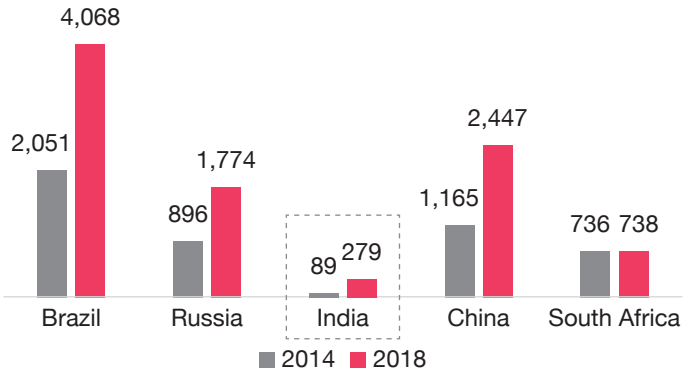
4 Database of Indian Economy, RBI: https://dbie.rbi.org.in/DBIE/dbie.rbi?site=statistics

5 Reserve Bank of India press release: https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=47045

Number of PoS terminals per 100,000 inhabitants

The number of terminals per 100,000 inhabitants can be considered as one of the indicators of the level of financial inclusion in a country. In India, this number stood at around 279 in 2018, which means the density of population per PoS terminal is around 358. The figure below shows the increase in the number of PoS terminals per 100,000 inhabitants in the BRICS nations from 2014 to 2018.[6]

Number of PoS terminals per 100,000 inhabitants in BRICS nations



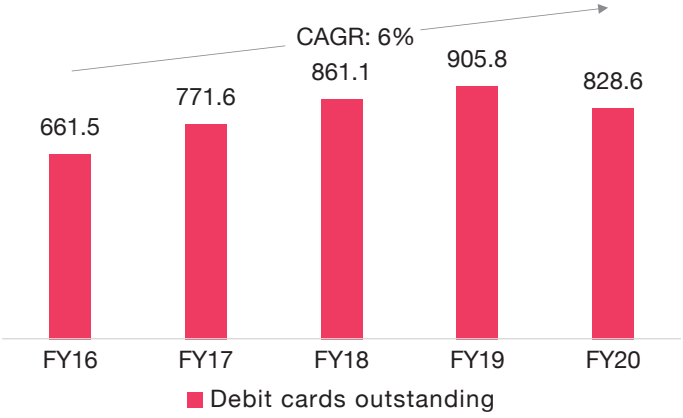
Inferences:

- At around 33%, India has the hightest overall CAGR amongst the BRICS nations – Brazil (~19%), Russia (~19%), China (~20%) and South Africa (~0%) – from 2014–2018.
- However, the density of population per PoS terminal (~358) is extremely high as compared to that in the other BRICS nations. This indicates huge potential for growth of PoS terminals in the country.

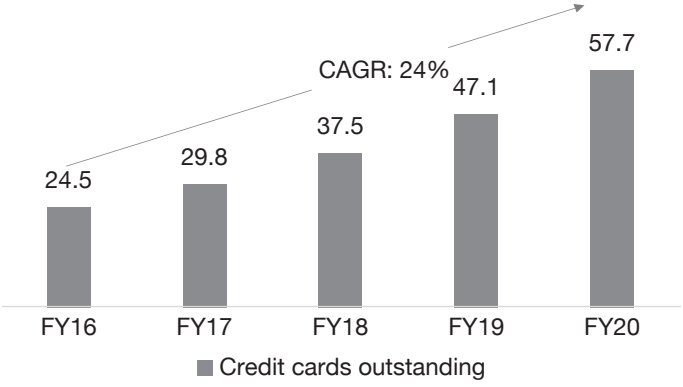
Number of outstanding debit and credit cards

The cards industry is leading the cashless movement in the long-running digital race. The following two figures depict the number of outstanding debit and credit cards in India from FY16 to FY20.[7]

Number of outstanding debit cards (in million)



Number of outstanding credit cards (in million)



Inferences:

- India is largely a debit card market with the number of debit cards expected to be fourteen times higher than that of credit cards by the end of FY20.
- The number of debit cards is growing at an overall CAGR of around 6%, while credit cards saw a CAGR of approximately 24% in FY16 to FY20.
- Although the number of debit cards exceeds that of credit cards, the credit card market has huge potential, as indicated by the constant growth rate.

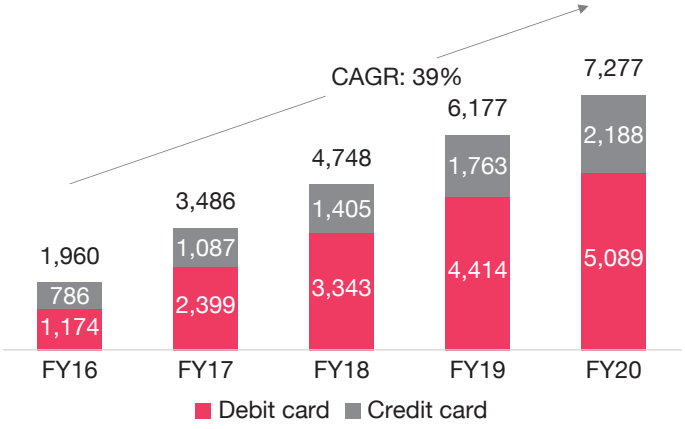
6 Bank for International Settlements: https://stats.bis.org/statx/srs/table/CT14B?p=2018

7 Database of Indian Economy, RBI: https://dbie.rbi.org.in/DBIE/dbie.rbi?site=statistics

Volume of card transactions[8]

The figure below shows the growth in the volume of debit and credit card transactions.[9]

Volume of card transactions (in million)



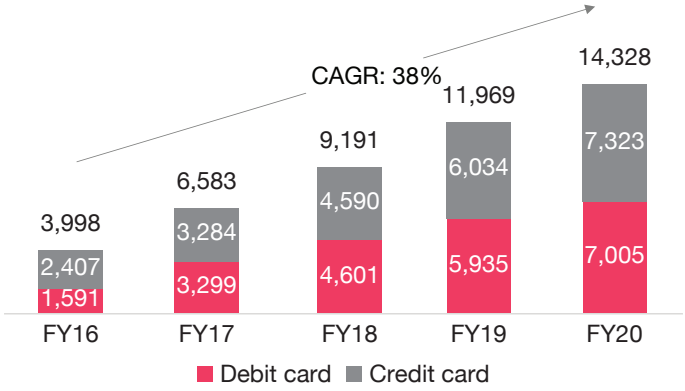
Inferences:

- Card payments have charted a phenomenal growth rate of around 39% from FY16 to FY20.
- Debit card transactions have had a growth rate of 44% over these years, with FY17 showing the highest jump of around 104% over FY16, largely due to the demonetisation effect.
- Credit card transactions have had a growth rate of 29% over FY16 to FY20.
- Debit card transactions account for around 60–70% of the total card volumes.

Value of card transactions

The figure below shows the growth in the value of debit and credit card transactions.[10]

Value of card transactions (in INR billion)



Inferences:

- The value of card payments has grown at around 38% from FY16 to FY20.
- The value of debit card transactions grew at a rate of around 45% during this period, with FY17 seeing the highest jump of around 107% over FY16 largely due to the demonetisation effect.
- The value of credit card transactions grew at a rate of around 32% during this period, accounting for approximately 50% of the total value of card transactions.

8 *The data on debit and credit card transactions, average number of transactions per card per year and average ticket size per card per year in the section below include both PoS terminal and e-commerce transactions as reported cumulatively by the RBI. However, it has been observed that e-commerce and PoS transactions constitute about 40% and about 60% respectively of the total number of card transactions (RBI Data Warehouse - Payment System Indicators: https://dbie.rbi.org.in/DBIE/dbie.rbi?site=statistics), as can also be seen in pre-March 2020 RBI statistics.*

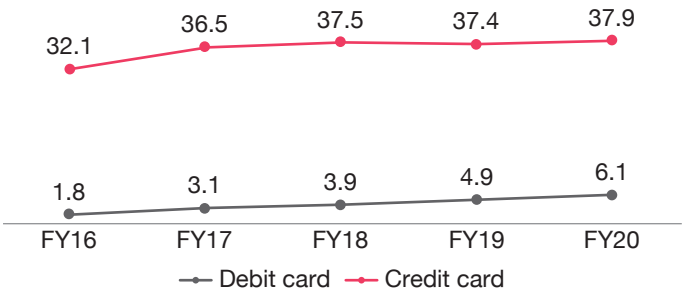
9 *RBI website: https://www.rbi.org.in/scripts/ATMView.aspx*

10 *Ibid.*

Transactions per card per year

The figure below shows the average number of transactions performed using debit and credit cards per year.[11]

Average number of transactions per card per year



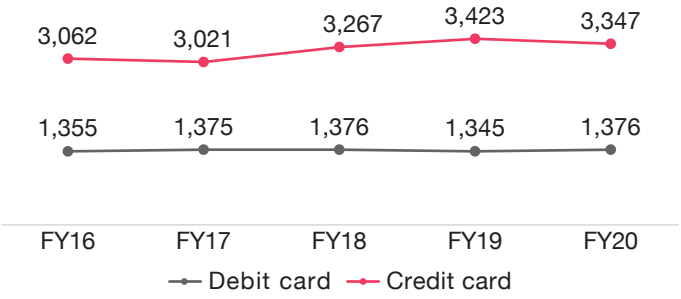
Inferences:

- The average number of transactions performed using debit cards has increased at a rate of around 36% from FY16 to FY20. However, the number of debit card transactions is relatively low vis-à-vis the number of outstanding debit cards in the country. Thus, there is huge scope for growth in the debit card market.
- The average number of transactions performed using credit cards has increased at around 4% over the same period. Credit cards are being used to perform a higher number of transactions than debit cards.

Average ticket size per card transaction

The figure below shows the average ticket size per debit and credit card transactions.[12]

Average ticket size (INR)



Inferences:

- The average ticket size of debit card transactions grew at a rate of around 0.4% from FY16 to FY20.
- The average ticket size of credit card transactions grew at a rate of around 2% during this period.
- This indicates that credit cards are preferred for high-value transactions.



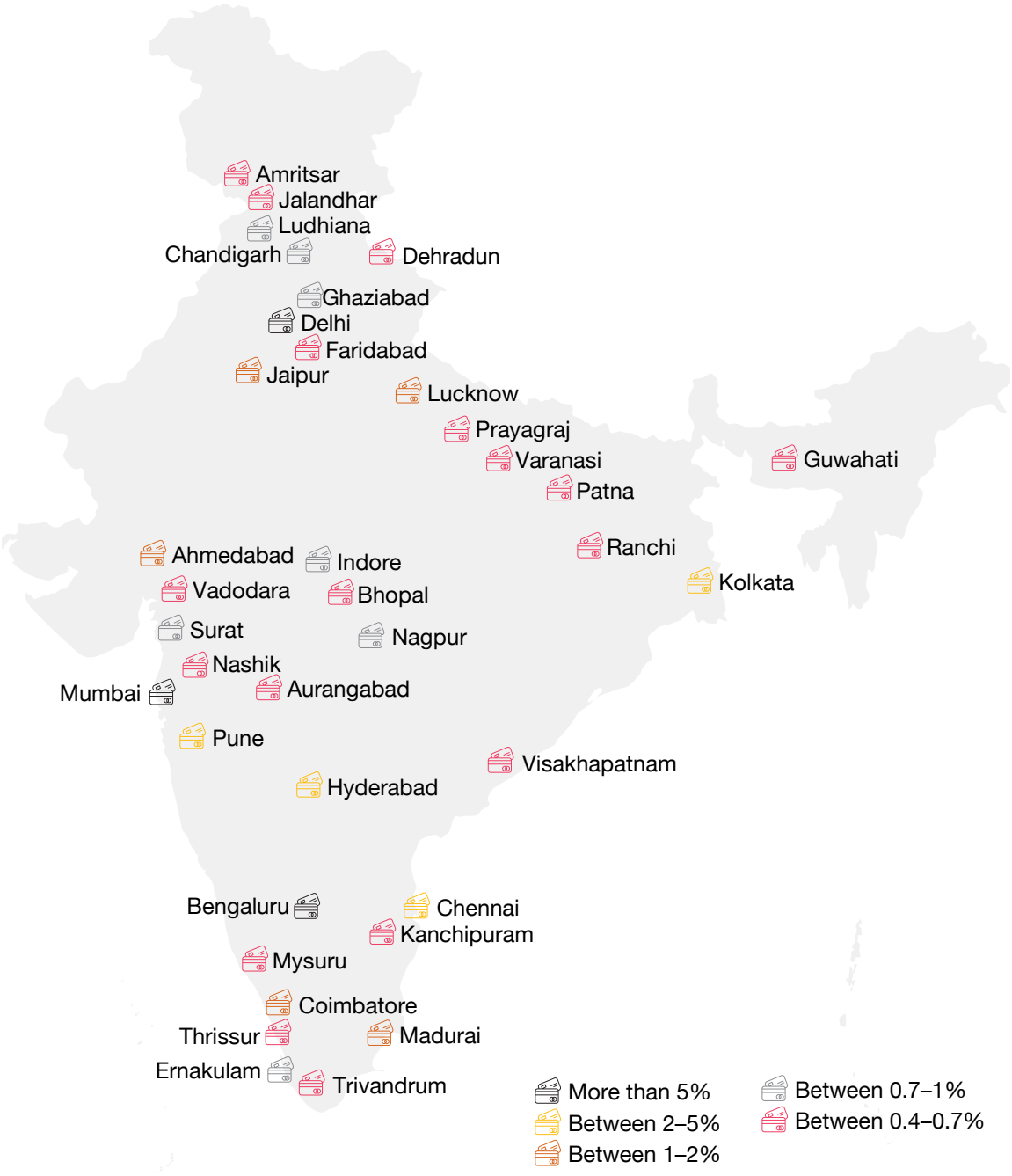
11 *RBI data, PwC analysis*

12 *Ibid.*

PoS density in India

Based on data received from prominent payment service providers, major urban centres like Delhi, Mumbai, Hyderabad, Bengaluru, Chennai, Kolkata, Ahmedabad and Pune account for approximately 35% of PoS terminals in the country, while major tier 2 cities like Coimbatore, Lucknow, Cochin, Chandigarh, Visakhapatnam, Surat and Jaipur account for about 6%. The rest of the distribution is scattered around other tier 2 and 3 centres in India, with very low deployment per city. This highlights the highly skewed PoS deployment across major pockets in India, leaving the rest of the country heavily dependent on cash-based transactions. Therefore, there is scope to address this skewed distribution by shifting focus towards PoS deployment in tier 3 cities and beyond. The figure below shows city-wise distribution of PoS terminals in India.[13]

Distribution of PoS terminals across Indian cities



13 *SBI data*

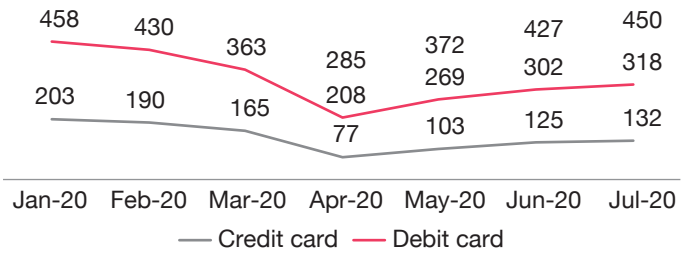
Impact of COVID-19 on the PoS landscape

Card payments

Card payments started declining from the last quarter of FY20 to April 2020, which can partially be attributed to the impact of COVID-19 on PoS imports from China. Total payment volumes were at their lowest in April 2020 – when they saw a drop of more than 55% due to the country-wide lockdown.[14] However, payments started to pick up in May 2020. Card payments have still not fully recovered and stood at 68% of the total volume of card transactions in July 2020 as compared to the pre-COVID levels in January 2020.

The figure below shows the month-on-month trend of the volume of debit and credit card transactions from January 2020.[15]

Volume of card transactions (in million)



Rise of contactless alternatives

COVID-19 has paved the way for rapid adoption of contactless payment alternatives like UPI, QR-based payments and AePS. These payment alternatives have the potential to complement the already existing PoS terminal led payment infrastructure.

UPI transaction volumes increased by a whopping 80% to INR 1,800.14 million in September 2020 from 999.57 million in April 2020. Total UPI transactions have more than doubled and values worth INR 3,290 billion were recorded in September 2020 as compared to INR 1,511 billion in April 2020. The number of micro ATMs is rising at a rapid rate of 3.80% every month. Through AePS, these ATMs will help the rural population embrace digital payments. The Bharat QR segment is also seeing steady growth at 4.23% per month, which suggests the untapped growth potential in India for contactless payments.[16]

> The growing adoption of QR codes at merchants' outlets has augmented the monthly value of digital transactions at SME outlets by 10–12%. The overall increase in digital throughput far outweighs any overlap between cards and QR. Isolated acceptance solutions like only cards or only QR will find little relevance in this new digital age. Our focus should be on providing merchants with an end-to-end acceptance solution covering cards, NFC, pay by link, EMI, BQR, UPI, micro ATM – all under a single account with one point of contact for support.
>
> **Sameer Hoda, President**
> Strategy and Operations
> Mswipe



14 https://www.rbi.org.in/scripts/ATMView.aspx

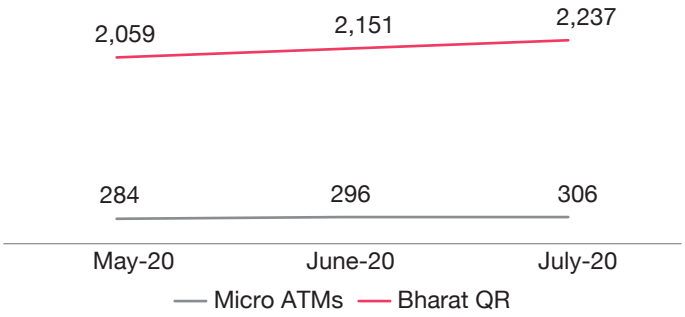
15 Ibid.

16 https://dbie.rbi.org.in/DBIE/dbie.rbi?site=statistics

The figure below shows the month-on-month growth of alternative payment options following the outbreak of the COVID-19 pandemic.[17]

With UPI and AePS bouncing back and even improving on pre COVID-19 numbers in terms of transaction volumes unlike cards, it is important to explore new age solutions to facilitate acceptance of PoS modes.

Growth trend of contactless PoS units (in thousand)



UPI is currently popular through mobile devices on both the merchant and customer sides. However, UPI@PoS is slowly gaining prominence. NPCI is keen on further promoting adoption of UPI@PoS through near-field communication (NFC) capabilities and wants aggregators to facilitate this change. This would serve multiple purposes – reduce physical contact while transacting, provide an impetus to India's domestic card network, as well as increase the focus on digitisation of the merchant payment space which is relatively unexplored by UPI when compared to P2P transactions.

It therefore becomes vital to explore other modes of payment at the PoS, especially in light of the current pandemic.

UPI has been found to process almost three to four times the transaction volumes of cards (credit and debit combined) at PoS locations.[18] While this indicates the potential of a digital payment revolution in India, it also highlights the paucity of PoS machines in the country. Even though the number of PoS machines in the country has increased, the number of unique locations remains low and restricted to major urban pockets in the country. Given that India has a large rural population with low access to smartphones and digital literacy, real-time payments may not be able to bridge the gap between cash and cashless payments. This gap can be addressed only with the help of cards and the corresponding acceptance infrastructure. Cards also provide a more secure means of transacting larger amounts, making them the most feasible option for rural and semi-rural customers who prefer infrequent large transactions over frequent small transactions. While card issuance no longer remains an issue, investment in the development of acceptance infrastructure is not lucrative. Addressing the shortage of PoS machines in India could give a significant push to secure digital payments across the country.



17 RBI data

18 RBI data for November–March 2020

2.2 Scope of growth in the PoS industry

Key drivers	
Potential to increase PoS penetration	• As of FY20, the total number of debit and credit cards in the country stands at ~885 million and the number of PoS terminals is just above 5 million.[19] • The average number of transactions per debit card per year is six, which is extremely low.[20] This suggests that debit card are still widely used only as a mode of cash withdrawal from ATMs. • The number of PoS terminals per 100,000 inhabitants is just ~280 compared to almost 2,000–4,000 in some other BRICS nations, highlighting a large gap in current and possible deployment.[21]
Attractive market opportunities	The growth in small and medium enterprises in the apparel, retail, hospitality, healthcare, fuel station and entertainment segments are viewed as an opportunity for merchant acquiring by banks. Thus, they are likely to procure a large number of PoS terminals.
Elevated deployment costs	PoS terminals are mainly concentrated in tier 1 and 2 cities due to the high costs surrounding the procurement and deployment of these terminals as they are largely imported. Thus, there exists huge scope for growth in manufacturing and innovating in India, which will also provide an advantage.
Focus on a sustainable business model	An Acceptance Development Fund (ADF) needs to be set up to develop card acceptance infrastructure, specifically in tier 3–6 cities and rural areas to accelerate the usage of debit and credit cards at PoS terminals.
Accelerating merchant acquiring business	According to the RBI's new guidelines, regional rural banks are now allowed to enter the merchant acquiring business by using Aadhar Pay – BHIM app and PoS terminals.[22] This will entail the procurement of a large number of PoS terminals. If, as per the RBI's vision, non-banking financial companies (NBFCs) are allowed to enter the merchant acquiring business, the demand for PoS terminals will increase multi-fold.
Shift from traditional PoS terminals	The recent COVID-19 pandemic has opened up a huge opportunity for NFC technology based PoS terminals which offer contactless transactions. PoS terminals enhanced with features to support UPI are in demand in large retail stores to speed up the billing process. The micro ATM (PoS terminals) sector is growing as it is being used widely for AePS-based payments.

19 *Database of Indian Economy, RBI: https://dbie.rbi.org.in/DBIE/dbie.rbi?site=statistics*

20 *PwC analysis of RBI data*

21 *Bank for International Settlements: https://stats.bis.org/statx/srs/table/CT14B?p=2018*

22 *https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=11804&Mode=0*



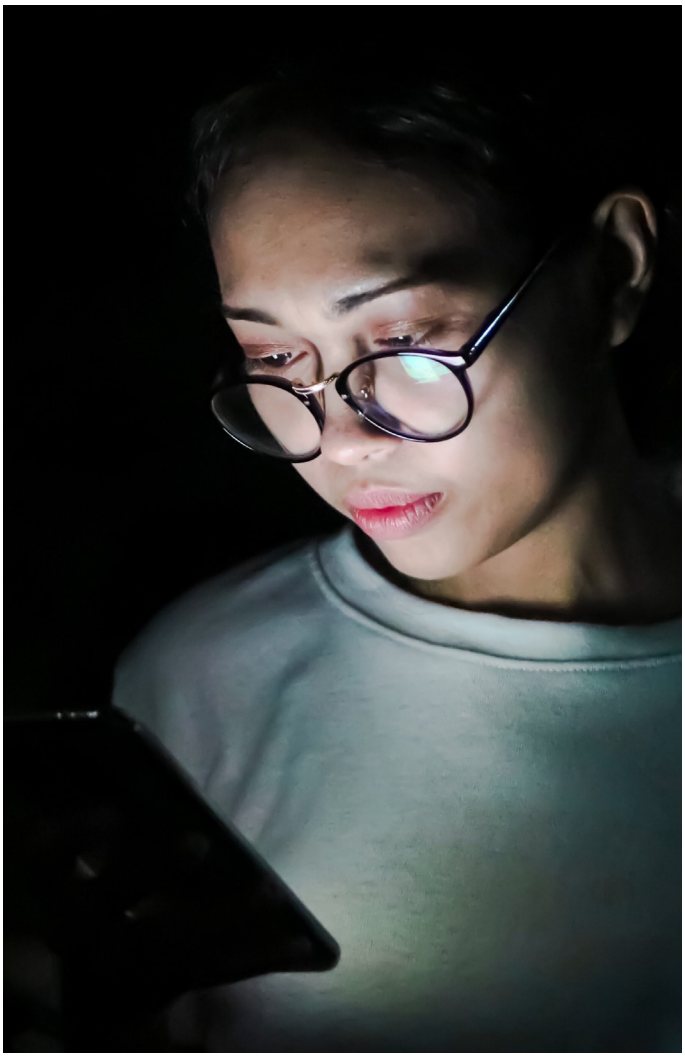
03

Key regulations governing the PoS industry

The regulatory environment in any digital ecosystem plays a key role in shaping it. Key regulations that have (or are likely to) have a significant effect on the PoS ecosystem have been discussed in this section.

3.1. Current state of regulations

Payment systems globally and in India are on the brink of a major overhaul. This digital ecosystem is more likely to make progress with requisite support from regulatory bodies and the Government. To that effect, various regulatory and Government bodies like the RBI, the Ministry of Finance, the Ministry of Electronics and Information Technology have been actively involved in creating a PoS ecosystem framework that supports future growth. The regulations and initiatives that have been implemented under this framework in the past have been outlined in this section.



Payments Infrastructure Development Fund (PIDF)[23]

When: January 2021

What it is:

- The RBI operationalised the PIDF to encourage acquirers to deploy PoS infrastructure (both physical and digital modes) in tier 3 and beyond centres and north-eastern states.
- The RBI will make an initial contribution of INR 250 crore to the PIDF, covering half the fund. The remaining contribution will be from card-issuing banks and card networks operating in the country.

Why it was introduced:

- To subsidise deployment of PoS acceptance infrastructure by acquirers in tier 3 and beyond centers with focus on north-eastern states of the country, thus facilitating innovation and reducing the cost of transactions.
- To improve acceptance infrastructure in rural and semi-urban regions.
- To improve availability of acceptance infrastructure (PoS terminals/mobile PoS/asset-light terminals) as a percentage of the total number of debit/credit cards.

Expected impact on the PoS ecosystem:

The introduction of this fund is expected to encourage new FinTech companies and small banks to invest in PoS deployment initiatives. Given that these could be new players to the ecosystem, with no pre-established PoS terminal suppliers, they are more likely to engage with new local PoS manufacturers who offer more competitive pricing for new technology. This in turn would provide an impetus to the local PoS manufacturing ecosystem.

23 https://www.rbi.org.in/scripts/NotificationUser.aspx?Id=12009&Mode=0

Guidelines on merchant acquiring business – regional rural banks (RRBs)[24]

When: February 2020

What it is:

The RBI, in its sixth bi-monthly monetary policy statement 2019–20, has allowed RRBs to act as merchant acquiring banks using Aadhaar Pay – BHIM app and PoS terminals, which would allow them to deploy their own devices subject to fulfilment of certain conditions like possession of mobile banking licence from the RBI, net worth, non-performing asset (NPA), capital-to-risk assets ratio (CRAR) criteria and IT infrastructure.

Why it was introduced:

- To give a fillip to digital banking.
- To enable RRBs to provide cost-effective and user-friendly solutions to their customers, like other commercial banks.

Expected impact on the PoS ecosystem:

RRBs were previously deploying PoS machines through larger scheduled commercial banks based on the sponsorship model, which limited their income as acquirers, in turn leading to low deployment. These guidelines enable RRBs to deploy their own devices and terminals. The monetary benefit of receiving the entire MDR (and not just a part of it) is likely to serve as an incentive to increase PoS deployment in rural areas. Considering the financial constraints of RRBs, they are more likely to opt for locally manufactured PoS machines that could come at a lower price, thus providing an impetus to the local PoS manufacturing industry.

Cash withdrawal using PoS terminals[25]

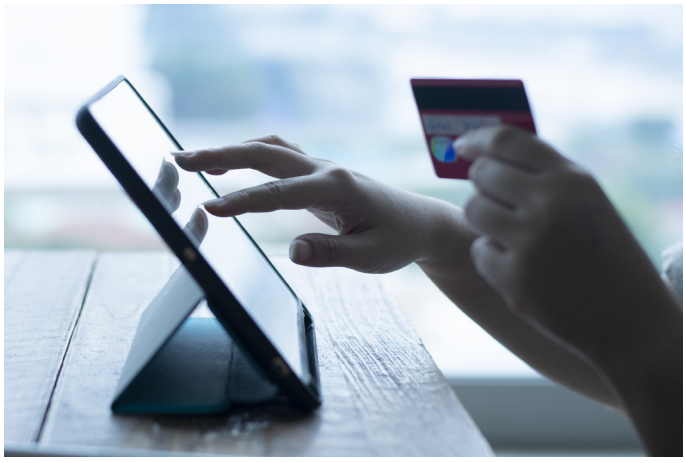
When: January 2020

What it is:

The requirement of obtaining permission from the RBI (for offering the facility of cash withdrawal at PoS terminals) has been dispensed with and banks may, based on the approval of their board, provide cash withdrawal facility at PoS terminals.

Why it was introduced and expected impact on the PoS ecosystem:

Given that banks do not have to go through the extra step of getting RBI approval to offer cash withdrawal, the process of offering such services is likely to get more seamless, thus increasing the likelihood of more such deployments. With customer charges for such transactions having been capped at 1%, more customers are open to such transactions, significantly increasing the traction of cash@PoS. With the new rules on RBI permission, banks (especially regional ones) are likely to go to the market faster, and machines that enable this functionality will see greater demand.



24 *https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=11804&Mode=0*

25 *https://m.rbi.org.in/Scripts/NotificationUser.aspx?Id=11802&Mode=0#:~:text=It%20has%20been%20decided%20that,withdrawal%20facility%20at%20PoS%20terminals*

Zero MDR[26]

When: December 2019

What it is:

- The requirement of obtaining permission from the RBI (for offering the facility of cash withdrawal at PoS terminals) has been dispensed with and banks may, based on the approval of their board, provide cash withdrawal facility at PoS terminals.
  - No bank or system provider shall impose any charge (including MDR) on a payer making payment, or a beneficiary receiving payment, through electronic modes.
  - It is mandatory to provide a facility for accepting payment through RuPay debit card, UPI and UPI QR.

Why it was introduced and expected impact on the PoS ecosystem:

- To promote faster adoption of digital payments and a less-cash economy, in turn leading to a larger tax base due to more transparent transactions, especially for mid- and large-sized businesses.
- To boost usage of India's faster payments system, UPI, and the domestic card scheme RuPay.

Expected impact on the PoS ecosystem:

While there were concerns from the payments industry regarding major revenue losses from the removal of the MDR (% fee paid by the merchant to the acquirer), in the larger ecosystem, this move is expected to bring more merchants under the ambit of digital payments. With no fee to be paid by merchants, they are more likely to deploy PoS terminals for acceptance of digital payment modes (as opposed to their previous reluctance due to payment of extra charges per transaction). This in turn is expected to boost demand for PoS terminals by merchants.

India has a highly underpenetrated acceptance ecosystem and there is a definite need to incentivise the acquirers of merchants so that it can be scaled up quickly.

Besides the above, the acquisition process has to be simplified similar to UPI. The PoS device should be treated as a platform like UPI and hence should not need KYC details as the money will flow to the merchant's KYC-linked bank account.

26 https://pib.gov.in/PressReleasePage.aspx?PRID=1597870

3.2. Potential future regulations

Due to the fast-changing digital ecosystem in the country, regulatory bodies need to keep pace in order to ensure that payment businesses remain profitable while also ensuring that their services to customers are affordable. To that effect, various documents released by the RBI (e.g. 'Payment and settlement systems in India: Vision – 2019-2021' and 'Report of the High Level Committee on deepening of digital payments[27],[28]) highlight possible regulatory changes that could be carried out in the future in the PoS acquiring ecosystem. Some of these changes have been discussed below.

Encourage non-banks to participate in payment systems

What it is:

Suggestion that payment schemes be allowed to induct non-banks as associate members to encourage acceptance. Settlement would continue to be through the sponsor banks.

Expected impact on the PoS ecosystem:

The entry of non-bank players into the acquiring value chain will bring in more innovation, better use cases and therefore, increased adoption. Additionally, non-bank players could help bridge the gap in rural/remote PoS deployment that hasn't been addressed by larger banks. With better use cases, increase in rural deployment and more competition in the ecosystem currently dominated by banks, the need for competitively priced PoS terminals may go up.

Reduction of interchange fees

What it is:

Reduction of interchange fees (paid by the acquirer to the issuer) by 15 basis points to increase the incentive for acquirers to sign up merchants.

Expected impact on the PoS ecosystem:

With regulations like zero MDR leading to pushback from the acquiring industry as erosion of margins would hinder expansion, reduction in interchange fees could ease the financial pressure on the acquiring ecosystem. This in turn would give an impetus to deployment and hence lead to an increase in the demand for PoS machines.

Taxation changes

What it is:

Lowering of GST on acceptance infrastructure such as PoS terminals and associated device/accessories.

Expected impact on the PoS ecosystem:

Lowering of tax on PoS terminals and their parts could give Indian manufacturers an incentive to manufacture these devices locally rather than importing them, thus reducing the price of the end product. Lower prices of PoS terminals in an industry already working on eroded margins would give a major boost to the expansion of the acceptance network at minimal cost, leading to the digital penetration envisioned by the Government.

27 *https://www.rbi.org.in/Scripts/PublicationVisionDocuments.aspx?Id=921*

28 *https://www.rbi.org.in/Scripts/PublicationReportDetails.aspx?UrlPage=&ID=922*

3.3. Growth drivers

It is important to understand the factors that could lead to significant growth in an already fast-expanding PoS ecosystem. The impact of the factors could vary, as highlighted below.

Card base expansion and growth in various sectors

As discussed in the previous sections, the number of debit and credit cards has been growing steadily over the last 4–5 years. While the CAGR of debit cards has been relatively lower (at 6% between FY16 and FY20), credit cards have shown a higher CAGR (at 24%) in the same period. Even though the number of outstanding debit cards dropped in the last year (mostly due to removal of inactive/non EMV compliant cards), the volume and value of transactions have continued to steadily increase.

While India is a largely debit card-oriented market, with debit cards contributing around 70% of all card transactions, high-value transactions (which is the key factor for MDR calculation) have been driven by credit cards. The increase in the number of credit cards and volume/value of such card transactions suggest that the purchasing power and financial position of the average Indian are improving, thus increasing the likelihood of purchase at retail outlets. Additionally, since the MDR from credit cards is higher and relatively unregulated, the PoS acquiring industry stands to reap major benefits from the growth in the credit card base.

Organised retail is expected to grow at a CAGR of 13% to become a USD 1.1 trillion industry in FY 2020 from USD 950 billion in FY 2018.[29] The textile and apparel market in India is expected to grow at a rate of around 14% during the period 2019–2024.[30] And he healthcare sector is expected to become worth approximately USD 135 billion by 2022.[31]

Given that PoS terminals have been known to be concentrated in these sectors, growth in these sectors is likely to spur PoS terminal growth and demand as well.

Banks favouring asset-light, cost-effective innovations on PoS

Acquiring banks are now open to experimenting with innovative cost-effective solutions aimed at heightening acceptance, e.g. adaptation of legacy PoS systems to NFC-enabled mPoS based solutions. These innovations offer the following benefits:

- enhance security since transactions are encrypted and card data is not stored on the mPoS device, making compliance with Payment Card Industry Data Security Standard (PCIDSS) regulations easier
- improve mobility and flexibility – these devices are easier to carry around and can hence facilitate sales anytime, anywhere
- reduce costs – the solution is asset light and the cost of purchase and maintenance is lower, thus facilitating more widespread adoption.

Acceptance of innovative payment modes is likely to further drive the deployment of PoS machines since they could serve as a one-stop shop acceptance device. Some of the modes that have been explored in recent times include:

- NFC
- QR codes
- UPI@PoS
- NCMC cards
- AePS
- sound-based payments.

Additional revenue opportunities for merchants

While acceptance of various digital modes of payment is likely to drive higher sales value for merchants, it is also imperative to provide an additional incentive for the deployment of PoS terminals. This involves providing additional revenue opportunities to merchants.

29 *India Brand Equity Foundation: https://www.ibef.org/industry/retail-india.aspx*

30 *https://www.businesswire.com/news/home/20190709005450/en/Indian-Textile-and-Apparel-Market-to-Grow-by-14.2-up-Until-the-Year-2024---ResearchAndMarkets.com#:~:text=The%20Indian%20textile%20and%20apparel,14.2%25%20during%202019%2D2024*

31 *India Brand Equity Foundation: https://www.ibef.org/industry/healthcare-india.aspx*

Provision of value-added services (VAS) at the PoS can successfully fulfil this objective: for each VAS provided/ enabled, the merchant is given a cut of the fee per transaction, thus incentivising the use of PoS machines. Some of the VAS that can be explored include:

- cash withdrawal facility provided by banks to withdraw cash at PoS terminals via debit cards
- EMI facility on debit cards which allows cardholders to take loans for purchase of consumer durables for a period of 6–18 months
- a dynamic currency conversion (DCC) PoS application which enables customers to see their payment amount at the point of payment in their own currency and as it would be reflected in their account statements
- PoS-based financing, or merchant cash advance, allowing merchants to borrow from FinTech lenders against card swipes on their PoS terminals, which will incentivise merchants to execute more swipe transactions
- bill payments at PoS terminals to provide greater increase convenience to customers, who would ordinarily have to visit to customer facilitation centres to pay water/electricity/gas bills.

Surge in AePS and micro ATM transactions

Over the years, AePS and micro ATM transactions have gained significant traction, mainly in rural areas. While banks are hesitant to make major investments in installing full-fledged ATMs in remote areas, the business correspondent (BC) model has significantly alleviated the problem of unavailability of digital banking facilities in rural regions through availability of micro ATMs. With increasing demand for cash in rural areas, withdrawals and deposits through micro ATMs have grown at a CAGR of around 200%[32] from FY 2017 to FY 2020. This trend is likely to accelerate in the future, increasing the demand for terminals that support such transactions.

> India is one of the fastest-growing acceptance markets in the world; the number of merchants accepting digital payments has grown five times in the last five years. The recent health crisis has further accelerated this, with consumers adopting contactless and online payments for purchases of everything from groceries to entertainment. Small and medium-sized businesses as well as local merchants are fast adapting to this shift in consumer behaviour and going digital almost overnight. To further strengthen and sustain this shift, it is important to increase merchant involvement and make online transactions easier and more secure. Innovations in low-cost acceptance devices, digitisation of onboarding processes and application of latest technologies to enhance safety and security of transactions will be key.
>
> **Vikas Saraogi, Vice President**
> Development and Acceptance
> Mastercard



32 *NPCI Retail Payments Statistics: https://www.npci.org.in/statistics*



04

PoS landscape in India

Usage of PoS terminals in India has increased in the last five years due to accelerated digital payments. When it comes to deployment of PoS terminals, India has remained dependant on imports with limited manufacturing infrastructure. A few domestic players are designing and assembling PoS terminals locally, but their contribution to the overall PoS terminal market is very limited. The ecosystem for end-to-end manufacturing of PoS terminals is not mature and needs to be carefully analysed.

4.1. Challenges and opportunities for the PoS market

The many challenges faced by PoS manufacturers indicate that a long-term strategy and commitment is required from industry players and Government bodies to build a conducive ecosystem for PoS manufacturing. We have analysed three distinct categories of challenges across manufacturing, cost and adoption which need attention along with the opportunities.

Manufacturing challenges

India's electronics manufacturing ecosystem, in general, is not mature, and raw material and components are largely procured from other countries, with value-add being done locally in the form of assembly of the components. A strong reliance on other nations for import of components along with long supply chains and pricing disadvantages hamper the PoS manufacturing industry. Additionally, manufacturers have to abide by certain stringent compliance requirements for enabling financial transactions through PoS terminals.

- **Semiconductor fabrication centres:** India does not have semiconductor fabrications units and manufacturers are dependent on imports.[33] India imports a significant quantity of semiconductor units from China. These units are also imported from Taiwan, another upcoming supplier for this industry.[34] The steps taken by the Government under Electronic Manufacturing Cluster scheme (EMC 2.0) and Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECS) to promote the semiconductor fabrication ecosystem will likely take effect in a few years.
- **Research and development (R&D):** Rapidly evolving technology for PoS manufacturing demands heavy investment in R&D. The lack of hardware R&D infrastructure in India has pushed manufacturers to rely on foreign hardware manufacturers for various components. R&D in India is more focused on the value addition at the PoS assembly and software services level.
- **PCI certification:** For processing financial transactions, leading payment card providers have established an international standard known as Payment Card Industry PIN Transaction Security (PCI PTS) that needs to be followed by hardware manufacturers to ensure security. The challenge for Indian manufacturers is the lengthy certification cycle (six months to two years)[35] and significant investment required for the certification. The primary reason for this long cycle is the availability of only a few certification labs globally. One key point to note here is that China has established a certification lab, whereas Indian manufacturers are dependent on a limited number of labs outside India. Further, the norms for device manufacturing change very frequently, which makes the whole process costly and cumbersome for manufacturers if there are no economies of scale.
- **Long procurement cycle:** Procurement of raw materials for manufacturing PoS terminals is a lengthy process. Acquiring necessary supplies can take up to six to eight weeks, and these timelines have been further stretched due to the ongoing pandemic situation. The lengthy procurement cycle is disadvantageous from a market dynamics perspective, especially considering the much shorter cycle for manufacturing finished goods in the neighbouring countries.

Cost challenges

The PoS market is highly price-sensitive globally. Within a commoditised market like electronic hardware, price is the key differentiator during PoS terminal purchase.

- **Scale disadvantage:** With the advantage of large-scale production, major global manufacturers have been able to keep the hardware cost competitive, resulting in the concentration of manufacturing units in a few countries. In India, while the consumption of PoS terminals is increasing, advantages of scale are not available to domestic manufacturers, which has resulted in heavy imports.
- **Inverted duty structure:** To boost digital payments in India, import duties have been removed from PoS terminal import. However, manufacturers face operational issues related to import duties while procuring raw materials and components for PoS terminals. Sometimes manufacturers end up paying import duties on the components being imported, which makes the assembly of components costlier than the procurement of finished goods.

33 *https://in.nec.com/en_IN/pdf/-AssochamReport-NTIasKnowledgePartner.pdf*

34 *https://www.moneycontrol.com/news/business/economy/under-make-in-india-for-electronics-semiconductor-fabs-to-be-first-category-5586241.html*

35 *https://tech.economictimes.indiatimes.com/news/internet/digital-payment-firms-cant-say-no-chinese-point-of-sale-machines-just-yet/76856625*

- **Manufacturing centres:** Leading global manufacturers have their manufacturing units in China and Taiwan. A robust hardware manufacturing set-up is enabling these organisations to produce in bulk and minimise costs.
- **Cost of compliance per device:** The cost of compliance per device is going to be very high in India considering the PoS production capacity vis-à-vis mass manufacturers like China. Also, the certification validity of PCI PTS 4.0 and PCI PTS 5.0 is until 2023 and 2026 respectively. This requirement for frequent certification renewal is a costly process which further adds to the cost of manufacturing and discourages a wider product range.
- **High logistics cost:** The logistics cost in India is around 13–14%, compared to 7–8% of the overall cost in developed nations.[36] This increases the product hardware manufacturing cost in India.

> Inverted duty structure, zero duty, no floor pricing, underselling and dumping from China, and many such deterrents must be recalibrated to safeguard the interests of domestic manufacturers in addition to providing conducive policies to support and promote hardware manufacturers and hardware design houses.
>
> **Parag Mehta, Founder and CEO**
>
> Evolute Group



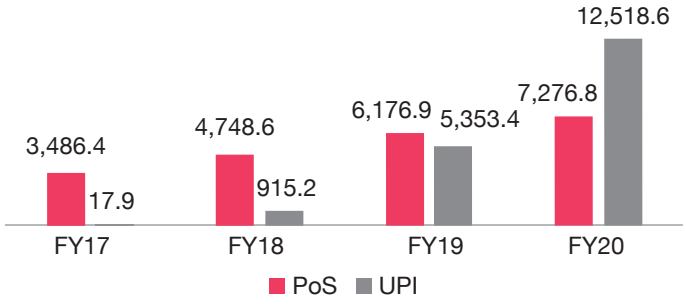
PoS terminals have been widely adopted as a payment channel in global and Indian markets alike. The growth rate of PoS transactions indicates the importance of PoS terminals as a payment medium. However, the emergence of certain alternative digital payment channels at the global and local level may impact the adoption of PoS terminals in future.

- **Adoption of UPI-/QR-based payment:** Recent advances in UPI-based payment channels in India are promoting the mass adoption of this medium. Due to the ongoing COVID-19 pandemic and preference for contactless payment, adoption of UPI-based payment is gaining traction in India. As per the recent PwC Merchant survey,[37] UPI-/QR-based payment is emerging as the top preference of customers, followed by debit/credit card payments.
- Such alternative payment methods will grab a share of PoS terminal footprints. In future, UPI-/QR-based payment is also expected to impact debit card usage. However, credit cards will likely remain mostly unaffected considering the type of financial services associated with these cards, and may push the demand for PoS machines.

  A comparison of PoS transactions and UPI transactions shows a clear trend of increasing adoption of the latter, with the total number of UPI transactions touching 12 billion in FY 2019–20.[38,39]

  The graph below depicts the growth of UPI and PoS transaction volumes over FY 2016–17 to FY 2019–20.[38,39]

PoS vs UPI transaction volumes (in million)



36 *https://in.nec.com/en_IN/pdf/-AssochamReport-NTIasKnowledgePartner.pdf*

37 *PwC's Merchant Survey 2020*

38 *https://www.rbi.org.in/Scripts/ATMView.aspx*

39 *https://www.npci.org.in/sites/default/files/RETAIL-PAYMENTS-STATISTICS_Sep-2020.xlsx*

As hardware is becoming a commodity, software will play a big role in deciding who leads the PoS market in the future. However, we are completely dependent on foreign players for essential hardware, which is the weakest link in the chain.

Vinay Patil, Co-Founder
NGX Technologies



Opportunities

- **Growth in retail stores:** India is home to 12.8 million retail stores across various segments (groceries, fashion, electronics, services, etc.) and of various sizes.[40] The retail sector in India is one of the top contributors to the economy and a key driver of growth. The demand for PoS terminals is linked to growth in the retail sector as increase in the number of new stores and scale of existing stores will generate greater demand for PoS terminals. The retail sector is expected to grow at a CAGR of 21% until 2026, with total market size of retail stores expected to reach USD 1,750 billion by 2026.[41]
- **Increasing global demand:** The global market has witnessed a consistent demand for PoS terminals, largely due to the increase in payment activities, business expansion and increase in disposable income. Global PoS manufacturers have been able to ensure the required supply of a variety of products for various types of merchants through their mega size production facilities. It is estimated that the global shipment of PoS units' will increase at a rate of 10.84% and their value will grow at 8.4% until 2025.[42]
- **Lower acquisition cost:** The business model for PoS terminals is largely service based where merchants have to pay charges for each transaction above a certain limit. Initially, some service providers charged a device cost or deposit from merchants but of late. the devices are given free of cost to merchants and commission is charged on transactions. This lack of an upfront cost has encouraged merchants to keep multiple PoS machines
- **Policy support:** MDR charges limit PoS adoption among small- to medium-sized merchants.[43] To push home-grown payment platforms, the Government of India recently waived MDR charges for transactions done through RuPay cards and BHIM UPI.

40 *https://www.statista.com/statistics/1048779/india-number-of-grocery-retail-stores/*

41 *https://www.ibef.org/download/Retail-August-2020.pdf*

42 *PoS Terminal Market Report - Global Outlook and Forecast 2019-2025 by Arizton*

43 *https://www.business-standard.com/article/economy-policy/mdr-waiver-rbi-may-pay-rs-1-800-cr-to-banks-to-fund-free-transactions-120010701314_1.html#:~:text=%C2%ABBack-,MDR%20waiver%3A%20RBI%20may%20pay%20Rs%201%2C800%20cr,banks%20to%20fund%20free%20transactions&text=With%20the%20government%20waiving%20MDR,2020%2C%20a%20report%20has%20said.*

Owing to convergence, the role of the PoS terminal is evolving from simply a card payment machine to a supporter of key business functions across multiple technology applications like multi-payment channels, inventory management and billing. It has now become a 'smart terminal' or rather a 'smart office' that does more than just payments. Integration of PoS into the value chain will intensify more in future, which may make PoS an enabler of business growth strategies.

Parag Mehta, Founder and CEO

Evolute Group



- **Low penetration:** Penetration of PoS machines in India is significantly low compared to that in developed countries and emerging economies. This is evident from the number of people per PoS terminal, which stands at around 279 in India in 2018. In contrast, most developed countries and emerging economies have less than 100 people per PoS terminal. This indicates the huge scope for further penetration of PoS machines, especially in the tier III and tier IV cities of India.
- **Skill availability in India:** With the presence of large PoS terminal manufacturers in the form of service centres, R&D centres and retails centres, the right skill sets and capabilities are available in the Indian PoS industry. Most Indian manufacturers believe that there is no skills shortage of skill set in India's PoS ecosystem.[44]
- **Growth in bank account holders:** India has witnessed an upsurge in the opening of new bank accounts in the last few years, especially in the rural areas.[45] Government initiatives like Pradhan Mantri Jan Dhan Yojana (PMJDY) and Digital India have provided a huge push. Under the PMJDY scheme, a total of 411 million bank accounts have been opened which are facilitating financial services, credit facility and pension, mostly for low-income groups.[46] Such a large shift in the financial sector will support PoS adoption in India.

44 *Interviews conducted with PoS manufacturers between September 2020 and October 2020.*

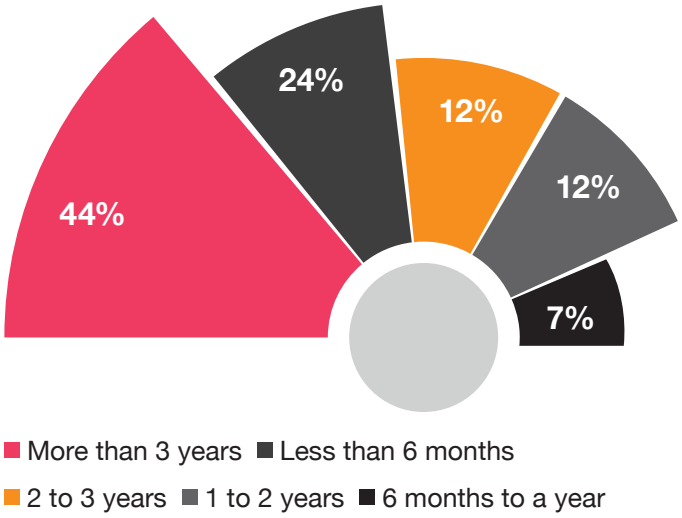
45 *https://www.ibef.org/download/Banking-August-2020.pdf*

46 *Ibid.*

PwC's Merchant Survey 2020

PwC surveyed merchants across the major cities of India to understand the market perception and opportunities for adoption of PoS terminals adoption.[47]

Improvement in PoS adoption – duration of PoS usage by merchants



Preferred mode of payments in India post COVID–19

	First preference	Second preference	Third preference
UPI/QR	47.5%	22.5%	30%
Credit/debit card	30%	42.5%	27.5%
Cash	30%	42.5%	27.5%

Key considerations while choosing a PoS terminal

	Rank 1	Rank 2	Rank 3
Associated costs (set-up and recurring)	61%	30%	0%
Customer service (quality, support, etc.)	18%	42%	18%
Additional features and customisations	12%	24%	21%
Set-up time (registration, approvals, etc.)	9%	3%	52%

Merchants' preference for future PoS adoption

5%

I'll adopt PoS terminals which can help me perform other functions like inventory management, cataloguing and billing.

52.5%

I'll adopt PoS terminals which can combine all payment channels (including UPI, QR, debit/ credit cards)

45%

I'll adopt more digital payment options (UPI/ QR code, etc.) while continue to use the traditional PoS terminal.

27.5%

I'll continue to use the traditional PoS machines as they fulfil my needs.

Wherever there are other considerations or responses from the respondents, the sum of responses displayed may not add up to 100%.

47 *PwC's Merchant Survey 2020*

4.2. Competition landscape

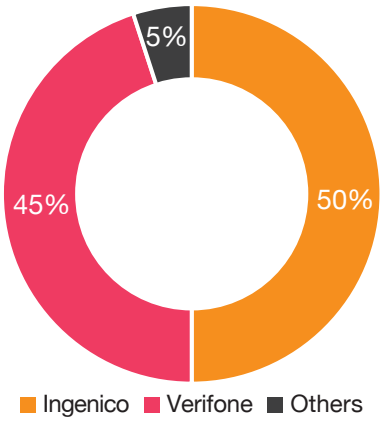
The PoS terminal market is largely dominated by global players and Indian PoS terminal manufacturers have a limited to non-existent market presence. Global players take advantage of scale, easy availability of raw materials, faster product innovation cycle, a vast product range and stringent security compliances pertaining to manufacturing of PoS terminals. Small- and mid-sized manufacturers in India find it difficult to match the effort and security compliance required for PoS manufacturing and have shifted their focus on value-added features and services to cater to local demand. Indian manufacturers are more concerned about the absence of a level-playing field and the non-existence of an electronics manufacturing ecosystem in India.

PoS manufacturers

Of the PoS terminals used in India, 95% are manufactured by two global manufacturers – France-based Ingenico and US-based Verifone. Data from 2016–17 indicates that Ingenico had a market share of approximately 50% in India, whereas Verifone had a market share of 45%.[48, 49] Both the manufacturers have their manufacturing units located in neighbouring countries and the Indian demand is fulfilled through imports, mainly from China. Both have sales and services, and research and development (R&D) operations in India to manage sales, aftersales and development of new products. A few Indian manufacturers and other global players account for the remaining 5% of the market share.

The figure below depicts the market share of leading PoS manufacturers in India.[50, 51]

Market share of leading PoS manufacturers in India in 2016–17





48 *https://www.business-standard.com/article/economy-policy/demonetisation-helps-pos-device-maker-verifone-register-highest-growth-in-india-116121300945_1.html*

49 *Ibid.*

50 *https://www.spglobal.com/marketintelligence/en/news-insights/trending/1q3cnhw-mhjf6lv2e9z3uw2*

51 *https://www.business-standard.com/article/economy-policy/demonetisation-helps-pos-device-maker-verifone-register-highest-growth-in-india-116121300945_1.html*

a. Ingenico Group

Ingenico is a global manufacturer and service provider of secure transaction technologies. The company has its headquarters in France. Its PoS product portfolio consists of payment terminals, Android ECR PoS, multilane terminals, card readers, self-service kiosks and Android smart PoS terminals. Although the company is primarily known for manufacturing PoS payment terminals, it also develops payment software and services for merchants. Its focus on R&D indicates global plans to cater to large retailers, small and medium merchants, banks and acquirers, and global e-commerce players.[52]

b. Verifone

Verifone is a technology provider in electronic transactions and PoS services. It is based out of California. Verifone has customers in over 150 countries and manufactures a wide range of PoS devices and technologies. The extent of coverage provided by Verifone can be understood by the fact that their devices process 10.3 billion transactions annually.[53]

c. PAX Technologies

PAX Technologies is amongst the top PoS terminal manufacturing companies in the world and is headquartered in Shenzhen, China. The company manufactures a wide range of PoS devices and has successfully deployed its machines in about 120 countries.[54]

d. VISIONTEK

VISIONTEK is a PoS terminal manufacturing and software solutions company based out of Hyderabad, India. It offers a varied product line with two key PoS terminals – GL-11 and GL-14. VISIONTEK has created a small and niche market by catering to customised requirements for developing payment systems like Aadhaar-based payments. It also exports its PoS terminals to around 50 countries. It has an in-house R&D unit for designing hardware and software, and a complete in-house laboratory for electromagnetic interface (EMI)/electromagnetic compatibility (EMC), vibration, environmental and reliability testing. Their EMI/EMC testing facility is accredited by the National Accreditation Board for Testing and Calibration Laboratories in accordance with ISO/IEC 17025:2005, Department of Science and Technology, India.[55] They import raw materials from neighbouring countries.

e. NGX Technologies

NGX Technologies is an Indian company based out of Bangalore and specialising in manufacturing of retail billing products for its customers in India. Its product portfolio includes Android-touch PoS machines, Android-mobile handheld terminals, Android-based printing solutions and handheld billing solutions. NGX Technologies is aspiring to begin manufacturing of payment PoS terminals and currently evaluating the effort, costs and benefits. They import raw materials from neighbouring countries.[56]

f. Bharat Electronics Limited

Bharat Electronics Limited (BEL) is an Indian public sector unit (state-owned enterprise) based out of Bangalore, India. It has successfully manufactured a micro ATM (PoS terminal) to support banking operations in India's remote areas. The micro ATM offers a multitude of features, including fingerprint scanner conforming to UIDAI biometric specifications, offline transactions and a built-in camera for verification. Initially, PoS machines manufactured by BEL found their place in the public distribution system and the Government of Haryana ordered the procurement of such machines for a pilot project in 2016.[57]

g. Evolute

Evolute is a PoS terminal manufacturer based out of India. Its product portfolio includes e-PoS machines, PoS terminals, micro ATMs and biometric authentication devices that are designed and manufactured in India. It customises its products as per client requirements. It has created a market for value-added features in its PoS terminals and believes that the future lies in providing value on top of basic payment features.[58]

52 *https://www.ingenico.com/*

53 *https://www.verifone.com/en/us/about-us*

54 *https://www.paxtechnology.com/*

55 *http://www.visiontek.co.in/about.html*

56 *https://www.ngxtechnologies.com/about-us/*

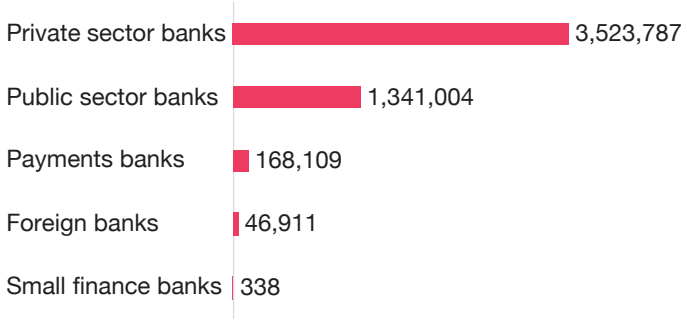
57 *https://bangaloremirror.indiatimes.com/bangalore/others/bel-designs-micro-atm-to-assist-in-remote-banking/articleshow/52662129.cms*

Bank-wise distribution of PoS terminals in India

As per RBI data, around two-thirds (approximately 69%) of PoS terminals in India are linked to private-sector banks and only one-fourth (approximately 26%) are linked to public sector banks, as of July 2020. This clearly indicates that private-sector banks have been at the forefront of expanding their PoS terminal framework. Payments banks are new players in this sector and creating significant traction in deploying PoS terminals. New private banks from the payments industry have a considerable presence with around 0.17 million PoS terminals deployed across the country.[59]

The figure below depicts the count of active PoS terminals in India by bank type.[60]

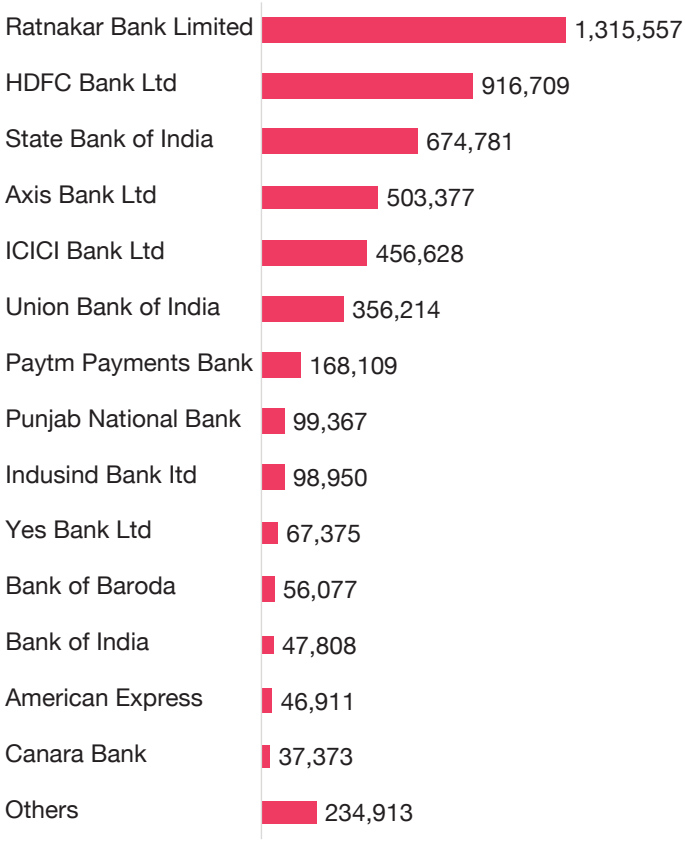
Active PoS terminals by bank type in India (as of July 2020)



It is interesting to note that 90% of the PoS terminal market in India is dominated by nine banks. There are only three public-sector banks amongst the top nine PoS terminal issuing banks. New private banks from the payments industry and foreign banks are emerging players in India's PoS terminal market.

The figure below depicts the count of active PoS terminals per bank in India.[61]

Active PoS terminal count per bank in India (as of July 2020)



4.3. Projected growth in usage of PoS terminals in India

India is an emerging market for PoS terminals and trends are indicative of a healthy growth in coming years. Owing to the presence of a large population with low-PoS density, decreasing usage of paper money after demonetisation, a good spread of retail stores and increasing adoption of PoS terminals in sectors like hospitality, restaurants, healthcare, delivery business, transportation, Government and entertainment, the demand for PoS terminals is expected to grow.

As per RBI data, the number of PoS terminals deployed in India increased from 1.1 million in 2015 to 5 million in 2020. Such growth of deployment will further accelerate the penetration and adoption of PoS terminals across India. It is further projected that the PoS terminals market in India, valued at INR 4 billion in 2019 will become worth INR 6.4 billion in 2025. The number of PoS units shipped annually is expected to grow from 0.62 million in 2019 to 0.95 million in 2025.[62]

58 *https://www.evolute.in/about-us/*

59 *https://www.rbi.org.in/Scripts/ATMView.aspx*

60 *Ibid.*

61 *https://www.rbi.org.in/Scripts/ATMView.aspx*

62 *https://www.arizton.com/market-reports/point-of-sale-pos-terminal-market*

Along with the growing trend of adoption across multiple sectors, India also has a unique use case of PoS terminals in the public distribution system (PDS) for payment and subsidy facilitation. Around 200,000 retail PDS outlets across 11 states were to be equipped with PoS devices to enable PoS-only buy and sell transactions.[63] These PoS terminals were supposed to execute Aadhaar authentication for subsidy transfer related to cooking gas, kerosene and foodgrains, etc.[64] However, the implementation phase of the programme was affected by a shortage of PoS terminals. Therefore, there is a need to be self-reliant in manufacturing of PoS terminals to fulfil domestic requirements.

4.4. Analysis of import and export of PoS terminals

The GoI's Digital India campaign and promotion of digital payment channels have provided the necessary impetus for growth of PoS terminals. India has largely been an importer of PoS terminals in order to keep up with escalating demand. The import trends, regulations and challenges faced by India are further assessed in the subsequent sections.

Import analysis

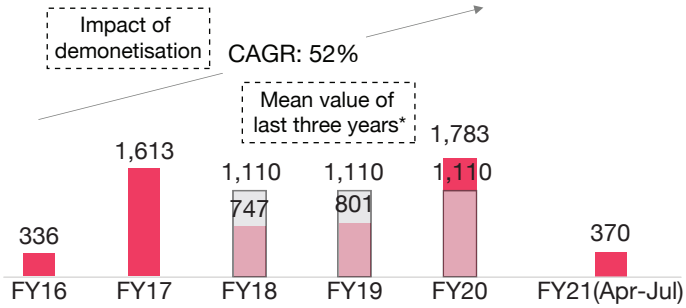
India has largely remained a net importer of PoS terminals from Asian countries like China and Singapore. The PoS terminal brands imported by India, like the US-based Verifone and France-based Ingenico (now acquired by Worldline) have their manufacturing facilities in China.[65] India imports over 95% of its overall demand of PoS terminals and as per projections, the volume imported can potentially grow further.[66]

Number of PoS terminals imported

As per RBI data, more than five million PoS terminals are already in circulation, as of March 2020, with demand growing at a rapid rate of 38% year-on-year (YoY) over the last four years as per figure 2 in this report.[67] Analysis of data from the Ministry of Commerce suggests that imports are also aligned with domestic demand. Imports jumped by almost five times in the year 2016–17 due to the impact of demonetisation. The import numbers were constant in the next few years at around 0.8 million units per year, while almost doubling to 1.78 million units in 2019–20.[68]

The import numbers for the first quarter of FY21 have declined due to the impact of COVID-19 on supply chains and subsequent low demand. 0.37 million units were imported in the first four months of the current financial year, though demand is expected to catch up to around two million imports as the economy is showing early indicators of bouncing back to pre-COVID levels. The figure below depicts the number of PoS terminals imported between FY16 and FY21 (April–July).[69]

Number of PoS terminals imported (in thousand)



*The spike in FY20 is as per import data accessed from the Ministry site for the ITC (HS) codes for import and export as follows – 84705010 and 84709010. Mean value for the three-year trend is 1,110,000 units.



63 *https://www.businesstoday.in/magazine/focus/direct-benefit-transfer-dbt-point-of-sale-pos-machines-aadhar/story/256924.html*

64 *Ibid.*

65 *https://tech.economictimes.indiatimes.com/news/internet/digital-payment-firms-cant-say-no-chinese-point-of-sale-machines-just-yet/76856625*

66 *https://www.passionateinfinance.com/indian-banking-and-payment-sector-continue-to-rely-on-chinese-pos-devices-with-no-cheaper-alternatives/*

67 *https://worldline.com/content/dam/worldline/documents/india/documents/worldline-india-digital-payments-report-2019-a-year-in-review.pdf*

68 *https://www.ibef.org/industry/retail-india.aspx*

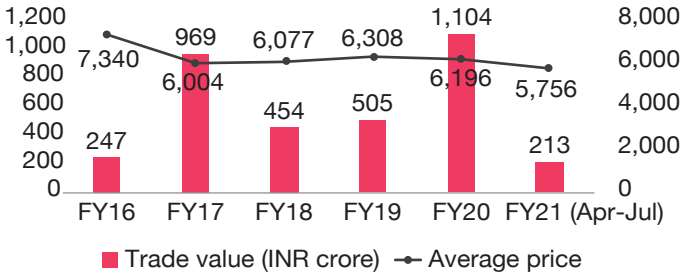
69 *PwC analysis of data from the Ministry of Commerce – Export Import Data Bank*

Value of imported PoS terminals

PoS terminals worth a cumulative value of INR 3,280 crore have been imported in the last four years. While the number of PoS units deployed in India grew at a rate of 52%, the import value has grown at a slightly lower CAGR of 45% from FY16 to FY20. This can be attributed to the reduction of per unit cost with more standardisation, economies of scale and adoption of low-cost alternatives from China. The average cost per unit of imported PoS terminals has dropped by almost 20% in the last five years.

The figure below depicts the YoY value and average cost of PoS terminals imported in India.[70]

PoS import trade value vs average cost per unit

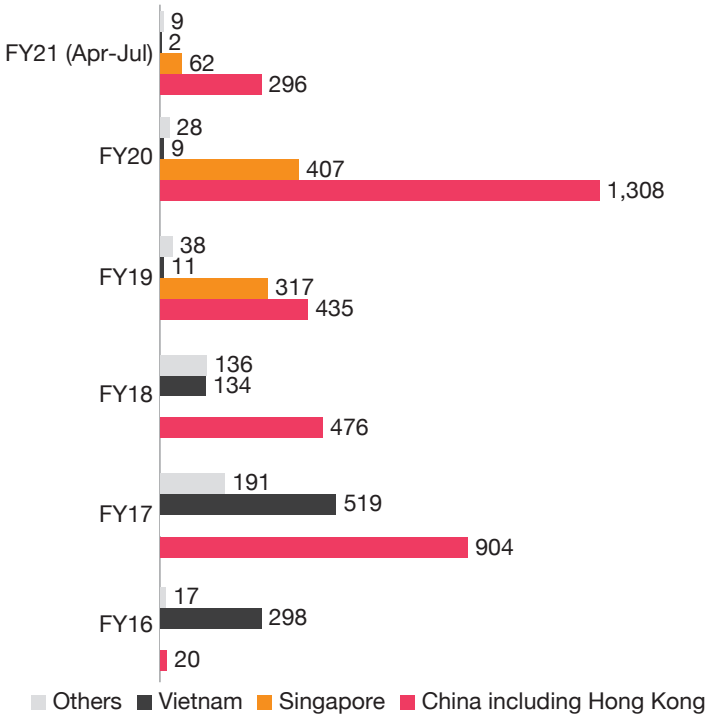


Country-wise import of PoS terminals

India has imported PoS terminals mostly from China (including Hong Kong) and Singapore in the last few years. Prior to this, PoS terminals were imported from Vietnam but the volume of PoS terminals imported from Vietnam gradually went down from more than 90% in FY16 to less than 1% in FY20. This is majorly attributed to the realignment of supply chains and setting up of manufacturing units in China by most leading players. Singapore's share in India's overall import of PoS terminals is constantly coming down from 43% in FY19 to 25% in FY20. In FY18, more than 63% of the imported PoS terminals were from China (including Hong Kong) and in FY20, the percentage of PoS terminals imported from China went up to 73%.

The corresponding figure depicts the country-wise YoY volume of PoS terminals imported.[71]

Country-wise import of PoS terminals (in '000)



Challenges associated with current import regulations

The GoI has relaxed import duties on PoS terminals and a few core components used for their manufacturing to push for greater adoption of digital payments post demonetisation. This has helped in meeting immediate demand but also served as an opportunity for leading PoS manufacturers to establish a stronger foothold in India. Further, non-labelled PoS terminals were imported in bulk due to relaxation in import regulations post demonetisation, adversely affecting Indian PoS manufacturers.[72]

An inverted duty structure impacts the PoS ecosystem. The rates of duties and taxes are higher for components/ raw materials used in manufacturing of PoS terminals than the terminals themselves. A 20% import duty is levied on some variants of printed circuit boards (PCBs) and a 15% import duty is levied on lithium batteries, as against zero duty levied on PoS terminals.[73] High import duties on some raw materials and components make it difficult for domestic manufacturers to procure them and manufacture the finished good at a competitive price.

70 *PwC analysis of data from the Ministry of Commerce – Export Import Data Bank*

71 *Ibid.*

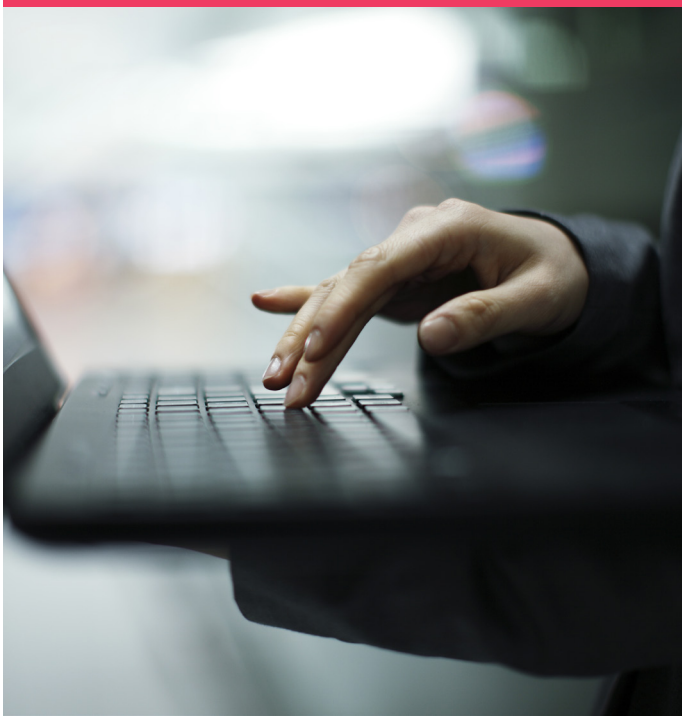
72 *https://taxguru.in/custom-duty/relaxed-conditions-import-pos-terminal-devices-related-items.html*

73 *http://www.eximguru.com/indian-customs-duty/85177010-parts-populated-loaded-or-stuffed.aspx, http://www.eximguru.com/indian-customs-duty/85065000-lithium.aspx*

A consistent approach towards levying duties on various imported raw materials and components is missing in certain scenarios. Depending on the category of raw materials, components and final usage, duties may vary and it is often up to the customs authorities to evaluate the duty to be levied. This may sometimes result in differential import duties on the same components used in manufacturing of PoS terminals.

A well-defined approach to standardise import duties across the value chain is required. The inverted duty structure (IDS) should be corrected and reasonable duty should be levied on finished PoS terminals. This would help domestic manufacturers to succeed and sustain themselves in a competitive environment.

> Policies around import duties and products from China must be recalibrated to safeguard the interests of domestic manufacturers.
>
> **Parag Mehta, Founder and CEO**
>
> Evolute Group



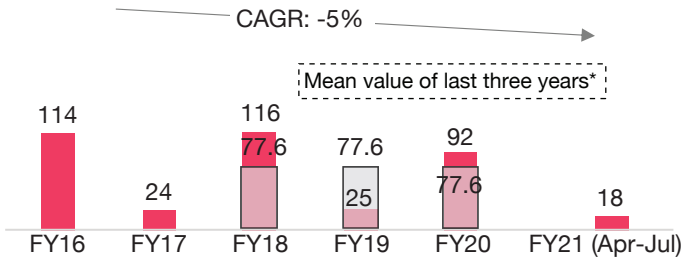
Export analysis

India is primarily an importer of PoS terminals with limited domestic manufacturing capacity. However, a few domestic players in the PoS terminal manufacturing space have sustained stiff competition from other global leaders by ensuring superior product quality and customisation. Export statistics of PoS terminals indicate an alternating trend of highs and lows over the last few years.

Number of PoS terminals exported

A total of more than 0.37 million units of PoS terminals were exported from FY16 through FY20. The number of PoS terminals exported during the same period has decreased due to the exit of a few manufacturers and ever-increasing cost competitiveness against leading global PoS terminal manufacturers that are operating on a massive scale. The figure below depicts the number of PoS terminals exported from FY16 to FY21 (April–July).[74]

PoS terminal export units (in thousand)



*The spikes in FY18 and FY20 are as per the export data accessed from the Ministry site for the ITC (HS) codes for import and export as follows – 84705010 and 84709010. The mean value for the three-year trend is approximately 77,600 units.

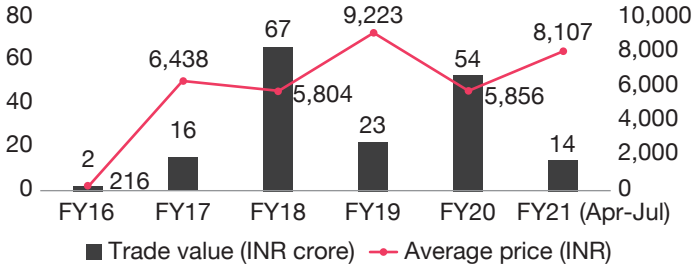
Value of PoS terminals exported

The total value of all the PoS units exported from FY16 through FY20 stands at INR 176 crore. While the number of units went down by 11% from FY18 to FY20, the net value of exports decreased by almost 10% during the same period. The average cost of exported terminals has fluctuated over the years, ranging between INR 5,804 and INR 9,223, with higher export trade value for the years when the average cost is low. The figure on the next page depicts the YoY value and average cost of PoS terminals exported from India.[75]

74 *PwC analysis of data from the Ministry of Commerce – Export Import Data Bank*

75 *Ibid.*

PoS export trade value vs average cost per unit

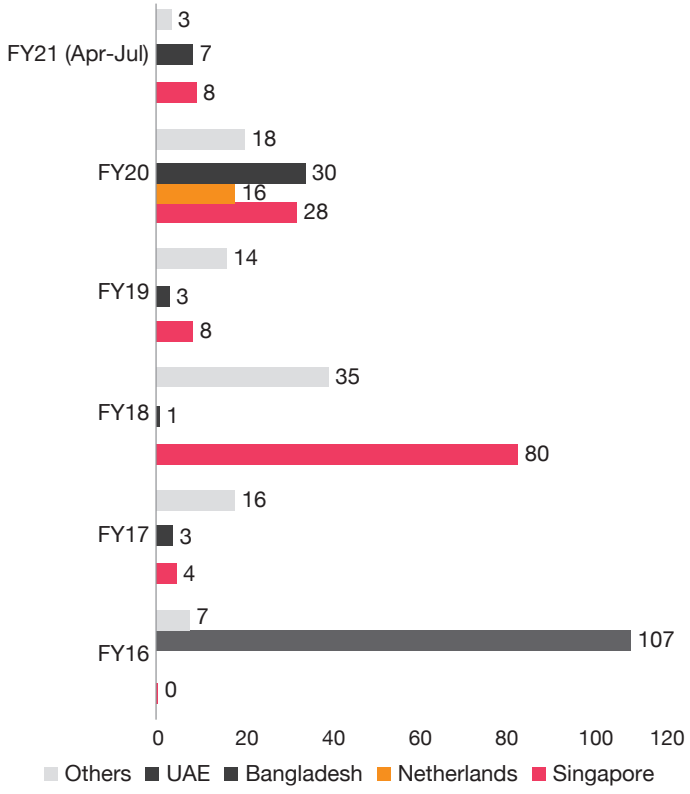


Country-wise export of PoS terminals

PoS terminals manufactured in India are exported to Singapore, the UAE, Bangladesh and the Netherlands. Singapore accounted for the highest share of exports at 69% when exports peaked in FY18. The UAE was the sole importer for all PoS terminals in FY16. Bangladesh was the top exporter in FY20 and accounted for 33% of the total exports, followed by Singapore at 31% and the Netherlands at 17%.[76]

The figure below depicts the YoY volume of country-wise export of PoS terminals.[77]

Country-wise export of PoS terminals (in thousand)



> Indian PoS machines are usually high in quality and more durable than PoS machines from neighbouring countries. Value-added services on top of a vanilla PoS machine could be a game changer. The Government of India has realised their value and is using them for public distribution system and benefits transfer schemes. However, the ecosystem of PoS manufacturing in India should be protected and encouraged.
>
> **Ramesh Chunduru, CEO**
> Linkwell Telesystems (VISIONTEK)



76 *PwC analysis of data from the Ministry of Commerce – Export Import Data Bank*

77 *Ibid.*



05

Proposed PoS terminal manufacturing as part of acquiring value chain in India

There is enormous demand for PoS terminals in the Indian market and imports fulfil a substantial portion of this demand. With a projected net positive growth in deployment of PoS terminals, the Indian market presents an opportunity for development of domestic PoS manufacturing capabilities. The strong growth in demand for PoS devices has the potential to be the driving force towards enabling India in becoming self-reliant (Aatmanirbhar) in manufacturing PoS devices and helping domestic players in entering and competing in foreign markets. It is essential to understand the product and value chain holistically to identify opportunities and areas that would provide value for domestic investment.

5.1. PoS terminal components and value chain

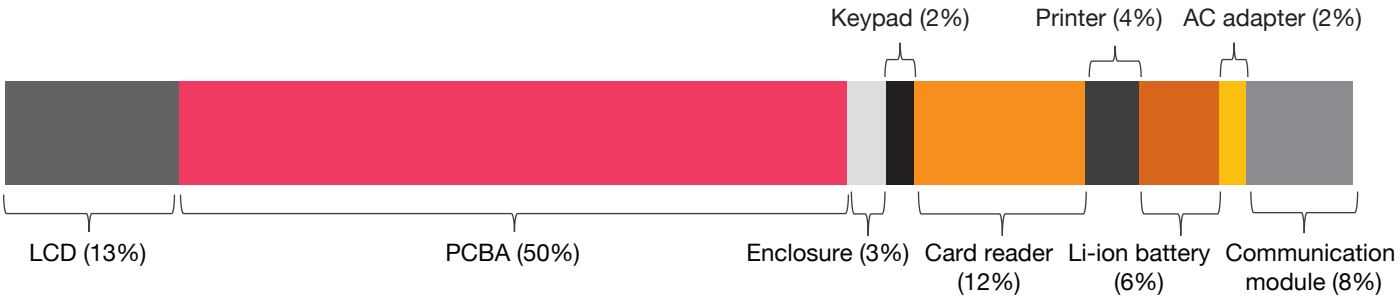
A PoS terminal comprises multiple components and subcomponents that are connected to deliver a seamless transaction experience. Each component adds value to the end product and it is imperative for potential investors in the PoS terminal manufacturing industry to understand the role, supply chain and value addition of each component to identify priority investment areas and optimise supply chain efficiency and cost of production. Some of the key components that are part of manufacturing PoS terminals are listed below.

1. **LCD:** Liquid-crystal display (LCD) in PoS machines is used to display transaction instructions and information. LCDs can be used either to display information or as touchscreen-enabled user interface modules. There are multiple external vendors who specialise in manufacturing LCDs and PoS manufacturers can either choose to procure standard LCD units off the shelf, place orders for customised LCD units or develop in-house capability to manufacture LCDs.
2. **PCBA:** Printed circuit board assembly (PCBA) forms the foundation of PoS hardware. It is the main processing unit of a PoS terminal. Similar to LCDs, there are specialised vendors who can customise PCBs as per client requirements. Most PCBs are imported and PCB manufacturing units are located outside India.
3. **Enclosure:** The enclosure in a PoS terminal is the structure that holds all the components in place and is usually made of polycarbonate (PC) or acrylonitrile-butadiene-styrene (ABS). Some domestic PoS terminal manufacturers import enclosures.
4. **Keypad:** The keypad unit in a PoS terminal in used to provide inputs to the processor. It typically consists of a set of 20+ keys to assist with manual entry and execution of some functions. It can be used in conjunction with touchscreen-based user interfaces or as a single source of data input/data entry by users.
5. **Magnetic card reader/smart card reader:** A magnetic stripe/card reader is a hardware device that reads encoded information in credit/debit cards. It captures information like account number, CVV number and expiration data stored on the credit/debit card's magnetic stripe and transmits it to the issuing bank for authentication. Smart card readers are similar to magnetic stripe readers in terms of functionality. Instead of magnetic stripes, smart cards have integrated chips and a smart card reading device can read the card either through direct physical contact or short-range wireless connectivity (radio frequency identification or near-field communication).
6. **Printer:** Printers are used in PoS machines to print transaction and batch receipts. Thermal printers are usually used for this purpose, though impact and inkjet printers can also be used.
7. **Li-ion battery:** The whole transaction process in PoS terminals is dependent on batteries. Some Indian manufacturers have created in-house capabilities to produce Li-ion batteries.
8. **AC adapter:** An AC adapter provides continuous power to a PoS terminal for end-to-end operations. Some terminals can operate using battery power. An AC adapter is used in case a terminal does not have internal batteries.



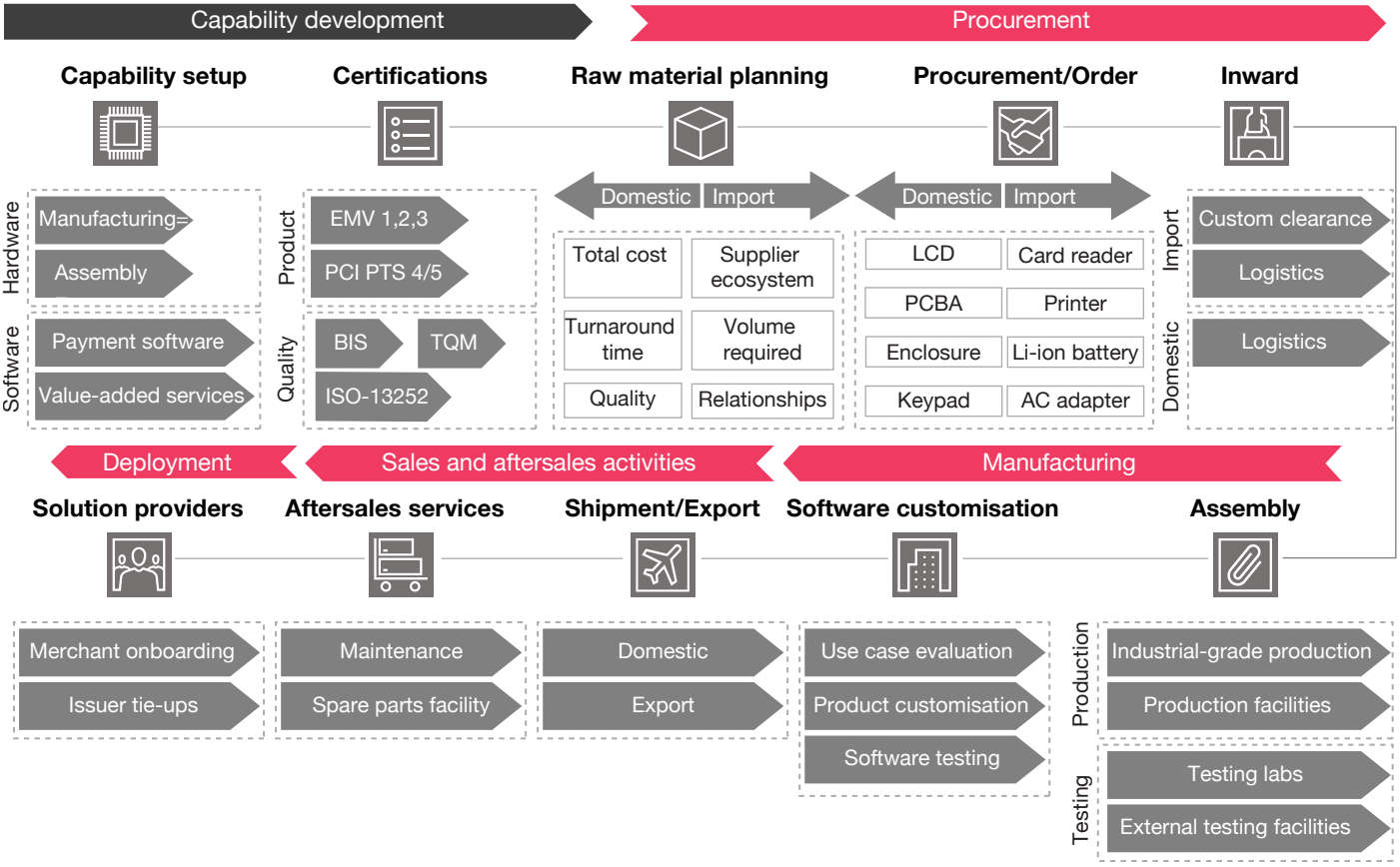
A component-wise cost analysis suggests that three components – PCBA, LCD and card reader – account for up to 75% of a PoS terminal's manufacturing cost. These are the components that should be prioritised from a manufacturing perspective.[78]

Cost comparison of PoS components



While components provide the basis for manufacturing, a good understanding of the PoS terminal manufacturing industry's value chain is required to identify opportunities for value addition and strategic sourcing for both new entrants as well as existing players looking to scale up operations. The figure below depicts the value chain of the PoS terminal manufacturing industry, right from procurement to deployment of machines.[79]

Value chain of the PoS terminal manufacturing industry in India



78 *https://financesonline.com/how-much-does-pos-software-cost-comparison-of-pricing-plans-from-leading-pos-solutions/*

79 *PwC analysis of data from internal research*

Elements of the PoS terminal manufacturing value chain industry in India

Capability development

Capability setup and certifications are the two main aspects of capability development that form the basis for establishing a domestic PoS terminal manufacturing ecosystem.

1. **Capability setup:** Hardware and software capabilities are the core capabilities required for manufacturing of PoS terminal units. Hardware capabilities include manufacturing and assembling capabilities in terms of infrastructure and machinery required for seamless production and hardware design. Software capabilities include the capacity to develop secure software for enabling financial transactions and other value-added services in PoS payment devices.
2. **Certifications:** Security and quality certifications are highly recommended to ensure the manufactured product's adherence to stipulated quality requirements. These certifications are widely accepted in the industry and establish credibility towards the safety and quality standards of components and PoS payment terminals as a whole. For further details about certification, kindly refer to section 5.2.

Procurement and logistics

Procurement and logistics are key elements of the value chain in the PoS terminal manufacturing industry. Acquiring raw material, order management and logistics form the backbone of the supply chain. With many companies outsourcing their non-key areas of manufacturing competence to specialised suppliers/ vendors, the scope of procurement includes not just raw materials, but subassemblies and standard components required for assembly operations as well. In India, raw materials are also procured through import and traders who import materials from neighbouring countries.

Interestingly, key components like PCBs are mostly imported due to the absence of raw materials required for their manufacturing in India. Some components like batteries are manufactured in India.

5.2. Prerequisites for setting up a manufacturing plant

Manufacturing

Manufacturing consists of developing hardware components and assembling procured material, and subsequently testing components and end products. Software is also customised as per client/customer requirements during manufacturing. The role of testing facilities and software development centres is critical for manufacturing of quality products.

Sales and aftersales

The value provided to customers extends beyond ensuring manufacturing quality and transaction security. Sales and aftersales services are crucial components of the industry value chain. The availability of service support from manufacturers of PoS terminals is one of the key criteria for merchants when purchasing PoS terminals.

Deployment

Deployment of PoS terminals is the final stage in the value chain. Establishing tie-ups with acquiring banks and onboarding merchants are the key activities in this stage. PoS solution providers are the ones who deploy PoS terminals and charge merchants a monthly fee for device usage as well as a transaction fee as a percentage of transaction value.



5.2. Prerequisites for setting up a manufacturing plant

Some of the key prerequisites required for setting up a PoS terminal manufacturing unit are listed below.

Certifications

1. **PCI PTS 4/5 – financial transactions:** Data security of cardholders is the primary concern that needs to be addressed for seamless adoption and risk mitigation in PoS terminals. Payment Card Industry (PCI) PIN Transaction Security (PTS) is the standard that addresses this requirement by specifying the list of technical as well as operational requirements that ensure necessary security for cardholder data. PCI Data Security Standard, a council founded in 2006 by American Express, Discover, JCB International, Mastercard and Visa Inc.[80] oversees and grants data security certification. Each company holds an equal share in governance and execution of work.
2. **EMV certification:** EMV certification is the compliance measure to validate a PoS terminal's capability to support EMV technology or EMV cards. There are three levels in EMV certification:

   Level 1 – hardware: In L1, the physical terminal, logic and transmission of payments are tested. This level focuses on the hardware capabilities of the device to ensure that its electromechanical components are compliant with required specifications.

   Level 2 – software kernel: L2 involves testing the software that facilitates payment information transmission. It focuses on the software interaction between a card and the terminal. L1 and L2 testing are known as type approval.

   Level 3 – application: In L3, each card brand is tested against the device to check the integration of the PoS terminal/device with any merchant or bank system to support end-to-end transaction process and ensure seamless processing.

   All the three levels of EMV certification are managed by EMVCo.
3. **BIS registration – electronic product manufacturing – Scheme II:** The Bureau of Indian Standards (BIS), Government of India, issues quality assurance certification to declare conformance of a PoS device with the stipulated BIS quality standards. Although the certification is optional, the Ministry of Electronics and Information Technology (MeitY), along with BIS, have declared that PoS terminals are to be registered under IS 13252 (Part I) as per the Compulsory Registration Scheme.
4. **ISO certification:** ISO certification indicates compliance of an organisation with various internationally recognised standards and guidelines for running business processes. Although ISO certification is a voluntary process, companies are recommended to be ISO certified to ensure quality standards and maintain efficient processes that eventually lead to better customer satisfaction.
5. **TQM certification:** Total Quality Management (TQM) is a certification provided to an organisation for following a set of guidelines and a management system that focuses on continuous improvement of all employees. It is an optional certification and is recommended for companies to align their workforce and management processes towards continuous improvement in quality standards.

Government approvals

Industrial approval policy: With India abolishing industrial licensing to a large extent, electronics and IT industries can now be established anywhere in the country. However, adhering to regulations related to environmental pollution control, power usage, industrial local zoning and land use is mandatory. Industrial approval policies, foreign investment policies, fiscal policies and foreign trade policies that are critical to electronics manufacturing are also relevant to PoS terminal manufacturing.[81]



80 *https://cio-wiki.org/wiki/Payment_Card_Industry_Data_Security_Standard_%28PCI_DSS%29#:~:text=MasterCard%2C%20American%20Express%2C%20Visa%2C,PCI%20development%20after%20proper%20registration*

81 *https://www.meity.gov.in/electronic-hardware-policies#IAP*

5.3. Suggested measures for the Government

PoS hardware manufacturing in India currently lacks a level playing field as it competes with global manufacturers. The PoS hardware landscape faces several challenges across manufacturing, cost and adoption areas. In terms of manufacturing, dependency on import of raw materials and components, long procurement cycles, hardware R&D and the required PoS manufacturing certifications act as impediments of growth. Cost challenges include the scale disadvantage of Indian manufacturers, high costs associated with logistics and compliance, and drawbacks associated with the inverted duty structure. Adoption challenges include competition faced by PoS terminals from other digital payment channels like the Unified Payments Interface (UPI) and the corresponding technological advancements PoS terminals need to undergo rapidly.

The Government of India's flagship initiatives around Make in India and Aatmanirbhar Bharat (Self-reliant India) aim to support the electronics sector and the manufacturing landscape at large. The GoI has rolled out several schemes like the Production Linked Incentive Scheme (PLI), Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECS) and Modified Electronics Manufacturing Clusters Scheme (EMC 2.0) to boost electronics manufacturing.[82]

To transform India into a PoS terminal manufacturing hub, focused interventions would be required to overcome the challenges. Some of these policy-level interventions are identified across manufacturing infrastructure, global partnership, duties and taxes, and category promotion brackets.



Identified areas for boosting PoS manufacturing in India

Encouragement through Modified Electronics Manufacturing Clusters (EMC 2.0) scheme	Leveraging foreign direct investment (FDI) policy for setting up a scalable PoS manufacturing ecosystem
Encouragement through properly managing imports duty	Elimination of inverted duty structure (IDS)
Providing preferential market access (PMA)	Encouragement of exports
Encouragement through Production Linked Incentive (PLI) Scheme	Leveraging Manufacturing of Electronic Components and Semiconductors (SPECS) scheme
Development of domestic supply chain of raw materials	Facilitatation of industry for the required regulatory approvals

- Global partnership related
- Duties and taxes related
- Category promotion related
- Manufacturing infrastructure related

82 *https://razorpay.com/blog/the-era-of-rising-fintech-digital-payments-growth/*

Encouraging domestic manufacturing through the PLI Scheme

Overview

Production-linked incentive in the range of 4–6% will be provided for domestic manufacturing of specific electronic components, including assembly, testing, marking and packaging (ATMP) units for a period of five years.

Impact on PoS terminal manufacturing

The National Policy on Electronics (NPE), 2019, envisions India becoming an electronics system design and manufacturing (ESDM) hub. The PLI scheme can be extended to PoS terminal manufacturing.[83] This would provide much-needed boost in enhancing domestic capabilities, encouraging production of required components indigenously and promoting large-scale investments required to develop an infrastructure for manufacturing at economies of scale.

Leveraging SPECS

Overview

SPECS focuses on strengthening the manufacturing of downstream electronics products, i.e. components and ATMP units by providing a financial incentive of 25% on capital expenditure.

Impact on PoS terminal manufacturing

While the benefit of the scheme is already applicable to manufacturing of some core components required in the production of PoS, like LCD panels and PCBs, including PoS terminals in the list of goods eligible for incentives under SPECS would be even more beneficial for domestic manufacturers.[84]

Developing a domestic supply chain of raw materials

Overview

One of the strategic advantages of manufacturing electronics in countries like China and Taiwan is the presence of sustainable supply chains of raw materials like semiconductors and chipsets. This adds to the disadvantage of Indian ATMP units as they are fully dependent on imports. Semiconductor fabrication is a highly capital-intensive and sophisticated setup with lengthy breakeven cycles – typically seven–ten years – and could not really take off in India despite several Government incentives.[85]

Impact on PoS terminal manufacturing

A freshly calibrated approach will provide impetus for setting up indigenous facilities for manufacturing of core components like semiconductor fabrication, batteries and display panels. An active participation of micro, small and medium enterprises (MSMEs) can be encouraged to support manufacturing of various subcomponents. Policies to incentivise and attract the right talent pool, develop ancillary industries and ease establishing such industries need to be formed with possible public-private partnership (PPP). This will provide necessary impetus to other downstream electronics industries like PoS terminal manufacturing and result in them becoming competitive within a shorter time frame.

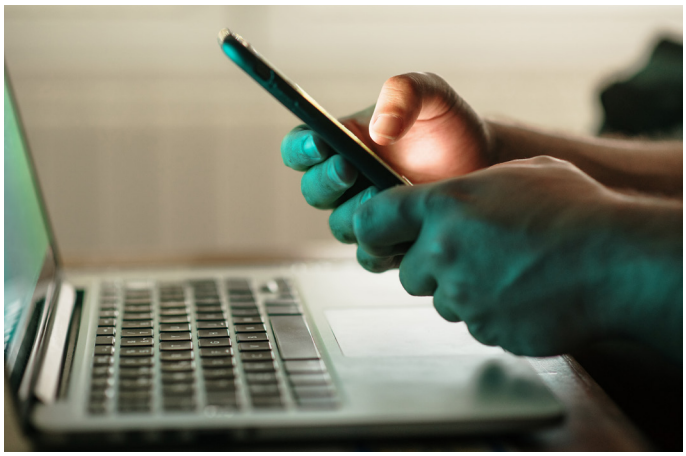
Facilitating required regulatory approvals

Overview

Various recurring regulatory approvals and certifications are required to manufacture PoS terminals. Securing such approvals is a long-drawn and expensive process that is further complicated by the absence of required lab facilities within India.

Impact on PoS terminal manufacturing

Certifications like PCI PTS and EMV are a few international certifications required for manufacturing PoS terminals, apart from a few others like BIS, ISO and TQM. In order to reduce the approval time required to secure PCI PTS certification, it is imperative to develop lab facilities in India. Further, the associated cost of securing certifications can be reduced by manufacturing at economies of scale, which necessitates the need for developing manufacturing facilities catering to larger domestic and global markets.



83 *https://www.meity.gov.in/writereaddata/files/production_linked_incentive_scheme.pdf*

84 *https://www.meity.gov.in/writereaddata/files/scheme_for_promotion_of_manufacturing_of_electronic_componentsandsemiconductors.pdf*

85 *https://analyticsindiamag.com/can-india-achieve-self-reliance-in-semiconductor-manufacturing/*

Managing duty imports properly

Overview

The GoI had relaxed import duties on PoS machines as well as a few core components like secondary cells and batteries after demonetisation to promote digital payments.[86]

Impact on PoS terminal manufacturing

Zero import duties have facilitated the import of PoS terminals in India, but there has been a direct impact on domestic manufacturing which could not compete with leading global players. A well-thought-out plan to facilitate domestic manufacturers of PoS terminals is desirable in the current competitive environment. Firstly, import duty on finished PoS machines should be realigned periodically for it to be in alignment with the phased manufacturing programme. Secondly, the IDS should be corrected on all raw materials and components, and duties, if any, should be applied in a phased manner in alignment with the phased manufacturing programme.

Eliminating the inverted duty structure

Overview

An inverted duty structure refers to a scenario where the rates of duties and taxes on inward supplies (raw materials and components) is higher than the rates on outward supplies (finished goods). This results in accumulation of credit and cascades costs.

Impact on PoS terminal manufacturing

Increasing cash flows for Indian PoS manufacturers will provide the required impetus by removing the anomalies associated with the inverted duty structure. Such a structure adversely impacts domestic manufacturers who end up paying a higher price for raw materials. Further, the concessions provided under free trade agreements (FTAs) to countries like Japan and South Korea (for dependency on raw materials) can be relooked at.[87]

Providing Preferential Market Access (PMA)

Overview

The GoI can adopt a preferential market access policy through which it can mandate the procurement of domestically manufactured products with clearly defined guidelines for both the Government and the private sector. The Government had come up with the PMA policy in 2014 for procuring desktops, laptops, LED products, etc., manufactured in India.[88]

Impact on PoS manufacturing

PoS terminals are mostly supplied to merchants as a bundled service by banks/financial institutions. Implementing the PMA for PoS terminals should be easy, considering the centralised nature of the supply market. While a phased increase in procurement under the PMA would be desirable to provide enough time for domestic manufacturing to flourish, the policy must ensure that there is no compromise in quality. This would structurally support the development of local manufacturing for it to become competitive in a few years.

> To build an ecosystem for PoS manufacturing, India needs to embark on an unprecedented journey, targeting global demand. It is crucial to support domestic manufacturing in a holistic way. The Government could ease out the certification processes for potential OEMs. Another aspect the Government should keenly look into is encouraging the adoption of domestic products like Rupay by building an MDR revenue stream for them.
>
> **Byas Nambisan, CEO**
> Ezetap



86 *https://www.thedollarbusiness.com/news/meity-relaxes-the-import-duty-on-cellsbatteries-of-pos-machines/49175*

87 *https://www.livemint.com/budget/expectations/government-may-address-inverted-duty-structure-in-budget-2020-11578918890582.html*

88 *https://www.meity.gov.in/esdm/pma*

Encouraging exports

Overview

The Government must take steps to boost exports of PoS terminals across sectors to address recent deficits in export and trade. It is estimated that the Indian electronics export market can be worth USD 180 billion by 2025 if industry suggestions are implemented appropriately.[89]

Impact on PoS terminal manufacturing

Indian PoS terminal manufacturers must be provided with duty credits at a higher rate of 3–5%. As a step towards this direction, the GoI recently launched the Remission of Duties or Taxes on Export Product (RoDTEP) scheme.[90] Promoting 100% export-oriented PoS manufacturing units under free trade zones will bring about advantages such as complete tax holiday under the Income-tax Act and duty-free import of raw materials and cash assistance to exporters. The GoI must also focus on strategically promoting PoS terminal exports to countries with strong trade ties in the Middle East, Africa and South Asian Association for Regional Cooperation (SAARC) nations, besides focusing on other trade partners across Asia, the Americas and Europe.

Encouragement through the Modified Electronics Manufacturing Clusters (EMC 2.0) scheme

Overview

In order to address the gaps in domestic electronics manufacturing, the EMC 2.0 scheme was launched for developing world-class manufacturing infrastructure and attracting global electronics manufacturers and ancillaries. This will bridge the gap between domestic and international markets by reducing time to market and improving responsiveness at a lower cost.[91]

Impact on PoS terminal manufacturing

The PoS terminal manufacturing market is heavily dominated by a few global players owing to various factors like economies of scale, capital-intensive nature of production, brand loyalty, certifications and R&D. EMC 2.0 is expected to ease manufacturing of PoS terminals in India as manufacturers can leverage the benefits of a sustainable ecosystem. This will enable the domestic ancillary hardware components business to grow in India, further strengthening the indigenous supply chain of raw materials and other electronics components.

Leveraging foreign direct investment (FDI) for setting up a scalable PoS manufacturing ecosystem

Overview

The GoI has permitted 100% FDI in the electronics sector under the automatic route, subject to applicable laws and regulations. This can potentially accelerate growth of the electronics industry in India with increased cash flow and access to other resources like technology.[92]

Impact on PoS terminal manufacturing

FDI can have a catalytic impact on the PoS terminal manufacturing sector as the sector is a capital-intensive one. The PoS terminal manufacturing industry needs to be promoted to attract the right channels of investment. This would result in increased cash flows as well as inflow of complementary elements like skilled people, processes and technologies.



89 *businesstoday.in/current/economy-politics/india-electronic-exports-can-rise-16-fold-to-180-billion-by-2025/story/414668.html*

90 *https://www.thehindubusinessline.com/economy/policy/govt-has-taken-specific-steps-to-boost-exports-nirmala-sitharaman/article30792002.ece*

91 *https://www.meity.gov.in/esdm/emc2.0*

92 *https://www.meity.gov.in/esdm/fdi*

5.4. Projected increase in revenue, export and employment opportunities

The COVID-19 pandemic and other geopolitical factors have significantly impacted the global economy and governments worldwide are coming up with stimulus measures to boost economic growth. As countries are focusing on sustaining economic growth, realigning global supply chains and boosting digital payment transactions are two clear trends that have emerged recently. These will have a direct impact on the global manufacturing landscape of PoS terminals.

The adoption of PoS terminals is expected to increase further with several other growth enablers like relaxed government regulations on digital payments, shift towards cashless transactions, introduction of value-added features in PoS terminals and higher demand from a few sectors. It is projected that the global PoS terminal market will grow at a projected CAGR of 8.4%, increasing from worth INR 823.5 billion in 2019 to INR 1,335.75 billion in 2025 in terms of revenue. In terms of units shipped, the numbers are projected to grow from 116.12 million in 2019 to 215.36 million in 2025 at a CAGR of 10.84%.[93]

The growth of India's digital payment market is a revolutionary one and enabled by various initiatives by the Government and the RBI. India is a key market for PoS terminals as it has huge potential in terms of being the second-most populous country in the world and penetration of major card providers in recent years. The retail sector offers a significant base with around 12.8 million retail outlets across the country.[94] The PoS terminal market is expected to grow at a CAGR of 8.23% in India to become worth INR 6.4 billion in 2025 from INR 4 billion in 2019. The number of PoS units shipped to India is expected to grow at a CAGR of 7.37% from 0.62 million in 2019 to 0.95 million in 2025.63 Currently, around 95% of this demand is imported.

The establishment of India as a digital-first economy is recognised by global forums like the G20. Digital diplomacy will play a key role in strengthening India's ties with other countries.[95] There are consorted efforts by the Ministry of External Affairs and the MeitY to support and engage developing nations with similar demographics and restructure their digital payment ecosystem. Further, countries like the US, Japan and South Korea are looking to shift their electronics manufacturing supply from China. This provides enough impetus to India to navigate strategically in the PoS terminal manufacturing segment.

The Indian PoS terminal manufacturing sector is at the cusp of this demand fulfilment, with an opportunity to be self-sustaining in PoS terminal manufacturing and supply, as well as cater to a significant portion of the growing global demand. This will happen against the backdrop of development of the electronics manufacturing landscape as a whole, actively supported by Government schemes.



93 *https://www.arizton.com/market-reports/point-of-sale-pos-terminal-market*

94 *https://www.statista.com/statistics/1048779/india-number-of-grocery-retail-stores/*

95 *https://cms.iamai.in/Content/ResearchPapers/3f28aae7-30b6-4267-a309-e8f9329b50f5.pdf*

Possible future scenarios for domestic consumption and export of PoS terminals manufactured in India

	Projected PoS demand (number of units in lakh)[96]	Percentage fulfilment by Indian manufacturers	Number of units to be manufactured locally (in lakh)	Revenue potential (in INR million)
India (domestic consumption)				
a) Base scenario (2019)	6.2	3%	0.18	**148.80**
b) Possible future scenario (2025) – 25%	9.5	25%	2.375	1,900.00
c) Possible future scenario (2025) – 50%	9.5	50%	4.75	3,800.00
d) Possible future scenario (2025) – 100%	9.5	100%	9.5	7,600.00
Global (exports)				
e) Base scenario (2019)	1,161.2	0.08%	0.92	**735.74**
f) Possible future scenario (2025) – 5%	2,153.6	5%	107.68	86,144.00
g) Possible future scenario (2025) – 10%	2,153.6	10%	215.36	172,288.00
h) Possible future scenario (2025) – 20%	2,153.6	20%	430.72	344,576.00

It is estimated that if domestic manufacturing is able to fulfil 100% of India's PoS terminal demand in the future, the potential revenue generated would be INR 7.6 billion by 2025. It is also estimated the PoS terminal export market could become worth INR 344.6 billion if Indian manufacturers cater to 20% of the global demand in the next five years. Apart from direct growth in terms of revenue, the PoS manufacturing ecosystem promises multifold growth by stimulating local supply chains for raw materials and components.

There will also be strong growth in employment opportunities in the domestic PoS terminal manufacturing sector. Trained and skilled workforce for ESDM across different stages of ATMP will be required. This is supplemented by the fact that leading manufacturers do not consider the availability of required skillset for R&D a challenge in India.

The GoI has ventured into defining the national framework to recognise and certify specific skills related to ESDM under the National Skill Development Corporation (NSDC).[97] Occupational standards are defined by the Electronics Sector Skills Council of India and can be used for training purposes by respective organisations. A close coordination between the Government, industry, academia, colleges and universities, and other learning and design facilities is proposed by the MeitY to facilitate adequately skilled workforce.

Technical workforce will be required for core manufacturing functions like purchase, R&D, design, production, assembling, quality assurance and testing, apart from non-core functions like finance, dispatch, legal and human resources (HR). An industry estimate suggested a requirement of 250 technical and 50 non-technical staff for operating a PoS terminal manufacturing plant with a capacity of producing one lakh units per month. An extrapolation of those estimates, considering the impact of scalability, productivity and technological maturity of the manufacturing setup, indicates a potential of one lakh new employment opportunities locally fulfilling 100% of the domestic demand and 20% of the global demand by 2025.[98]

96 https://www.statista.com/outlook/331/119/mobile-pos-payments/india

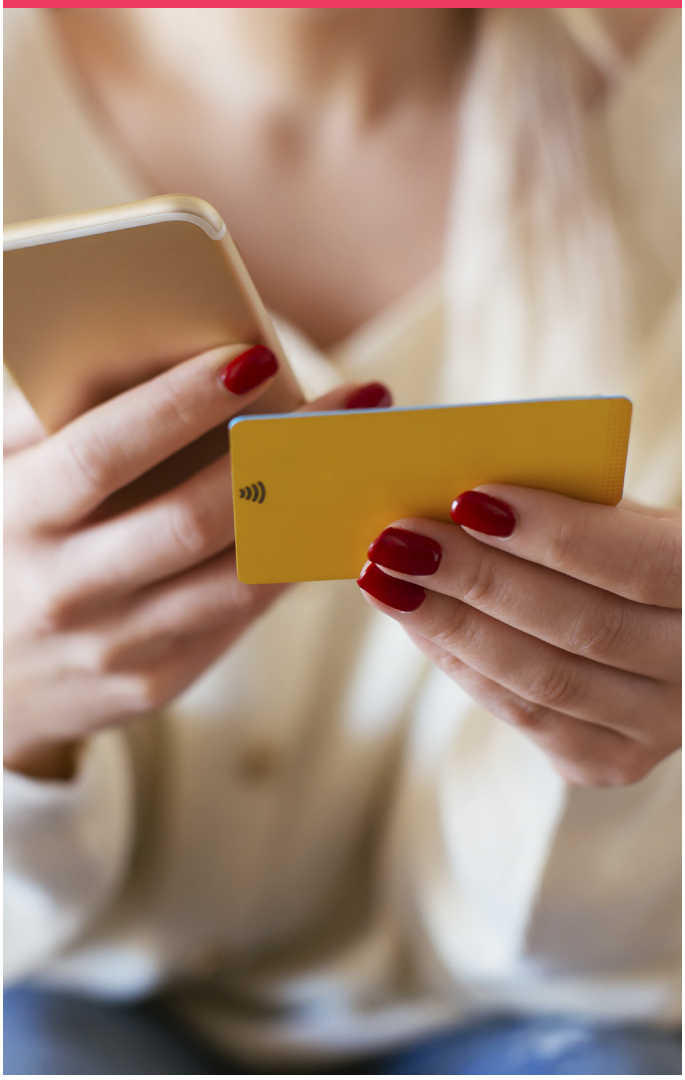
97 https://www.arizton.com/market-reports/point-of-sale-pos-terminal-market

98 PwC analysis of data received from domestic PoS terminal manufacturers

Production volumes and revenues at economies of scale are essential for manufacturers to attain critical mass.

Vinay Patil

Co-founder of NGX Technologies



5.5. Comparing the cost economics of importing vs domestic manufacturing of PoS terminals

As India looks to cater to the growing local demand of electronics items and become a strong alternative for the global supply chains moving out of China, competitiveness of the Indian electronics manufacturing ecosystem in comparison to other countries becomes a crucial factor. It is estimated that an economic disability of 8.5–11% needs to be factored in under the pretext of required infrastructure, scalable operations, domestic supply chains, cost of finance, etc.[99]

PoS manufacturing is a sophisticated assembly of multiple components from PCBAs to LCDs, keypad to enclosures, magnetic card readers to printers and batteries. India imports a majority of these components, resulting in an increased turnaround time and inventory storage costs, along with additional expenditure incurred due to cost of components and import duties. This dependency on imports has created a major competitive disadvantage for India. Higher transportation costs are another major disadvantage for India and seamless connectivity of ports with inner lands needs to improve to bring down overall costs.[100]

China, a major manufacturer of PoS terminals, has the advantage of skilled labour and high labour productivity for electronics manufacturing. India needs to develop a similarly skilled workforce to meet the required demand for growth. Though wages in India are dependent on specific skills, the country has an advantage in terms of labour costs. The monthly minimum wage in India is in the range of USD 66–202 compared to USD 140–346 in China.[101]

Cost is a critical factor for manufacturing a PoS machine to make inroads into a segment or a geography. Other critical factors that are important in developing a domestic manufacturing ecosystem are quality, serviceability, reliability and customisation.

99 https://www.meity.gov.in/esdm/pli

100 PwC analysis of data received from domestic PoS terminal manufacturers

101 https://www.livemint.com/politics/policy/digital-payments-to-more-than-double-to-135-2-bn-by-2023-1560711978627.html

Total cost of ownership (TCO) is a more important factor for deciding a PoS terminal than a one-time price. The right quality will save significant repair and servicing costs, as high as 4–5%. Indian manufacturers can focus on providing superior service quality, mass customisation and bundled software for PoS terminals.

Sarath Nerella, Associate Vice President

Innoviti Payment Solutions



5.6. Supplementing local manufacturing by introducing soft PoS

The number of merchants accepting digital payments has not risen as significantly as the number of customers who have shifted towards digital payments. A majority of merchants in tier 1 and 2 cities are accepting digital payments. However, tier 3–6 cities still lack exposure to digital payments and merchants in these cities are unable to set up high-cost infrastructure for accepting digital payments. Thus, innovative and cost-effective solutions for accepting digital payments need to be explored by merchants at these locations. Software point of sale (soft PoS) is an innovative merger of a physical PoS terminal and an internet-enabled smartphone that enables low-cost acceptance infrastructure for digital payments. The application installed on a smartphone can act as a payment acceptance terminal. Such an application enables contactless payments by utilising a 'tap to pay' feature. This feature is expected to revolutionise the merchant acquiring business. Merchants are only required to have an internet-enabled smartphone. Payments can be made by tapping NFC-based contactless cards or scanning QR codes generated by smartphones.

Soft PoS offers following advantages to merchants and acquirers

Participants	Key features
Merchant	Additional hardware in the form of a PoS terminal is not required The merchant's smartphone acts as the payment terminal
	Promotes mobility as smartphones can be carried anytime and anywhere
	Fits for on-the-foot salesforce, small and medium enterprises
	Comparatively low on cost as no additional hardware needs to be procured
	Quick and easy registration process
Acquirer	Merchant onboarding process is faster and cost effective
	No PoS terminal cost
	Easy application setup and maintenance
	Allows for merchant and terminal flexibility

As an alternative to manufacturing PoS terminals in India, soft PoS can be developed and marketed by FinTech players/local manufacturers, along with traditional banks. Rules and regulations surrounding payment applications can be formulated and laid out by the RBI, along with other required entities. Soft PoS can be considered as a cost-effective alternative since it eliminates the need to set up physical PoS terminals.

Recently, a group of financial services companies launched a white-label solution (an app-based solution) for merchants. This app is a mobile-first and mobile-only acceptance solution that allows all merchants with NFC-enabled Android smartphones to accept in-store payments made using Bharat QR, UPI and NFC-based contactless cards, along with remote payments made using a link-based approach. Along with accepting payments, this app also provides value-added services like e-khata, reporting and online dukaan.

Physical PoS	Soft PoS
Manufacturing units/plants to be set up Cost of raw materials/components is attached Physical hardware is required Portability is difficult for PoS terminals except mPoS	Mobile application infrastructure to be set up Cost of mobile application development, maintenance and support is attached An internet-enabled smartphone is required Easily portable; can be used anytime, anywhere
Goods and services tax (GST), monthly rentals and monthly costs are attached with physical PoS terminals	Associated costs with soft PoS are likely to be lower
Physical PoS terminals are largely concentrated in tier I and tier II cities due to the high costs attached The acceptance development fund (ADF) is likely to remain large as it requires physical terminals to be deployed Training and awareness would be required only in case of fresh new terminals or if some additional features are implemented	Soft PoS terminals can be specifically marketed in tier III to tier VI cities, along with rural areas as they are cost effective and can gain from increasing smartphone plus internet penetration The ADF can be reduced as no procurement of physical terminals is required Training and awareness to be provided to merchants for using soft PoS
The merchant onboarding process is cumbersome, time consuming and comes with staffing costs, along with know your customer (KYC) processes	Online merchant onboarding process is easy, less time consuming and cost effective
PoS terminals can accept payments via chips, magnetic stripes and NFC-enabled contactless cards, generate QR code for accepting payments and also leverage UPI	Can accept payments only via NFC-enabled contactless cards, generate QR codes for accepting payments; can be developed to accept payments via UPI



06

Conclusion

The digital payment ecosystem in India has grown exponentially in the last five years and the surge will continue to provide the required impetus to debit and credit card transactions. A strong correlation between the volume of card transactions and the number of deployed PoS terminals points towards a robust demand for PoS terminals. Further, the global PoS terminal market has strong potential to become worth INR 1,335.75 billion in 2025 from INR 823.5 billion in 2019.[102]

102 https://www.arizton.com/market-reports/point-of-sale-pos-terminal-market

India can become an integral part of this global growth story by positioning itself as a viable PoS manufacturing hub. Achieving such a position would require India to focus on quality, serviceability, reliability and mass customisation. Overcoming the identified disadvantages of manufacturing, cost and adoption will take concerted efforts to facilitate the development of a conducive manufacturing ecosystem. In order to become a leading player in PoS terminal manufacturing, India needs to produce PoS terminals at scale by ensuring proper quality standards and fixed costs per unit.

The GoI's active support under the PLI, SPECS and EMC 2.0 schemes, besides the regulation of import duties and tax rebates and provision of preferential market access, may give the domestic PoS manufacturing landscape the required impetus in the initial few years.



Potential areas to consider

Suggested measures for the Government basis industry asks	
Manufacturing infrastructure related	**Encouragement through the PLI Scheme** The PLI Scheme can be extended for PoS manufacturing, providing the boost needed to encourage indigenous production of required components and promote large investments for manufacturing at economies of scale.
	Leveraging the Manufacturing of Electronic Components and Semiconductors (SPECS) scheme While the benefit of the scheme is already applicable for manufacturing of some core components required in production of PoS, like LCD panels and PCBs, a more prompt approach will be to include the PoS terminal in the list of goods eligible for incentives under SPECS.
	Development of domestic supply chain of raw materials A freshly calibrated approach will provide impetus for setting up indigenous facilities for core components like semiconductor fabs, batteries and display panels. An active participation of MSMEs can be encouraged to support the manufacturing of various subcomponents. The policies to incentivise the development of ancillary industries and ease the establishment of such facilities need to be taken up with possible public-private partnerships.
	Facilitate industry for the required regulatory approvals In order to reduce the approval time of certifications like PCI PTS, it is imperative to develop lab facilities in India. Further, the associated cost of certifications can be offset with manufacturing at economies of scale, which necessitates the need for developing manufacturing facilities catering to larger markets domestically and worldwide.
Duties and taxes related	**Encouragement through proper management of imports duty** Zero import duties on PoS directly impact domestic manufacturing, which could not thrive and compete with category leaders. A well-thought-out plan to facilitate domestic PoS manufacturing players is desirable in the current competitive environment. Firstly, it needs to be ensured that import duty for finished PoS machines is realigned periodically in alignment with the phased manufacturing programme. Secondly, a zero import duty policy must be adopted for all raw materials and components which are not produced indigenously.
	Elimination of IDS The IDS is resulting in the accumulation of credits and cascading costs for manufacturers. Galvanising the cash flows for Indian PoS manufacturers will provide the required impetus by removing the anomalies associated with the IDS.

Suggested measures for the Government basis industry asks	
Global partnership related	**Providing PMA** PoS terminals are mostly supplied to merchants as a bundled service by banks/financial institutions. Rolling out PMA for PoS is easily implementable, considering the centralised nature of the supply-side market. While a phased increase in procurement under PMA would be desirable to provide enough time for domestic manufacturing to flourish.
	Encouragement of exports Export-oriented policies for promotion of Indian PoS manufacturers must provide duty credits at a rate of 3–5%. The Remission of Duties or Taxes on Export Product (RoDTEP) scheme is a recent step in this direction. Promoting 100% export-oriented PoS manufacturing units under free trade zones must be explored. The Government can also focus on strategically promoting PoS exports to countries with strong trade ties.
Category promotion related	**Encouragement through the EMC 2.0 scheme** The PoS market is heavily dominated by a few global players owing to various factors like economies of scale, capital-intensive nature of production, brand loyalty, certifications, and research and development. This would make it easier for them to start manufacturing in India against a backdrop of leveraging the benefits of a sustainable ecosystem.
	Leveraging FDI policy for setting up scalable PoS manufacturing units FDI can have a catalytic impact on PoS manufacturing as it is a capital-intensive business. The PoS industry needs to be promoted to attract the right channels of investment. This would not only open up cash inflows, but also utilise the complementary elements of people (skills), processes and technologies.

PwC's Merchant Survey 2020 – methodology

PwC India surveyed small- and medium-scale merchants in India between September and October 2020 through in-person meetings to understand the digital payment landscape and utilisation of PoS payment terminals. The objective was to gather insights into the future of PoS devices in the country. The survey participants were 41 merchants across Bengaluru, Dehradun, Delhi, Gurgaon, Hyderabad and Mumbai. The questions in the survey were designed to understand:

i. channels adopted for accepting payments

ii. ascertaining the preferred mode of payments by customers

iii. number of PoS payment terminals in usage and the time span of their utilisation

iv. key considerations for selecting a PoS payment terminal

v. key challenges in setting up a PoS payment terminal

vi. roadmap for future usage of PoS payment terminals.

Based on the survey results, the PwC team has identified the key considerations, challenges and issues in PoS payment terminal usage in India.



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List of abbreviations

Abbreviation	Full form
ADF	Acceptance Development Fund
AePS	Aadhaar Enabled Payment System
ATM	Automated teller machine
BC	Business correspondent
BHIM	Bharat Interface for Money
BRICS	Brazil, Russia, India, China and South Africa
CAGR	Compound annual growth rate
COVID-19	Coronavirus disease 2019
CRAR	Capital-to-risk weighted assets ratio
DCC	Dynamic currency conversion
EMI	Equated monthly instalments
EMV	Europay, MasterCard and Visa
FY	Financial year
GST	Goods and Service Tax
IMPS	Immediate Payment Service
IT	Information technology
KYC	Know your customer
MDR	Merchant discount rate
MeitY	Ministry of Electronics and Information Technology
mPoS	Mobile point of sale
NCMC	National Common Mobility Card
NETC	National Electronic Toll Collection
NFC	Near-field communication
NPA	Non-performing asset
NPCI	National Payment Corporation of India
PIDF	Payments Infrastructure Development Fund
PoS	Point of sale
QR	Quick response
RBI	Reserve Bank of India
RRB	Regional rural bank
UPI	Unified Payments Interface
VAS	Value-added services

About FICCI

Established in 1927, FICCI is the largest and oldest apex business organization in India. Its history is closely interwoven with India's struggle for independence, its industrialization, and its emergence as one of the most rapidly growing global economies.

A non-government, not-for-profit organization, FICCI is the voice of India's business and industry. From influencing policy to encouraging debate, engaging with policy makers and civil society, FICCI articulates the views and concerns of industry. It serves its members from the Indian private and public corporate sectors and multinational companies, drawing its strength from diverse regional chambers of commerce and industry across states, reaching out to over 2,50,000 companies.

FICCI provides a platform for networking and consensus building within and across sectors and is the first port of call for Indian industry, policy makers and the international business community.

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About PwC

At PwC, our purpose is to build trust in society and solve important problems. We're a network of firms in 157 countries with over 276,000 people who are committed to delivering quality in advisory, assurance and tax services. PwC refers to the PwC network and/or one or more of its member firms, each of which is a separate legal entity. Please see www.pwc.com/structure for further details.

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Data Classification: DC3 (Highly Confidential)

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KS/March 2021-M&C 10667