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India Digital Payments Report

Q1 2019

We are successfully moving towards an exciting and fast changing payment space that makes the digital payments experience ubiquitous, secure and frictionless for consumers and merchants despite the fact that cash is still king.

The Reserve Bank of India in its latest vision document noted the decline in paper-based clearing instruments and observed a significant growth in acceptance infrastructure facilitating digital payments during 2015-2018. In the years to come, we are confident that India will witness over a 50 percent rise in mobile-based payment transactions as projected in the document.

Worldline is committed to the cause of digitalizing the country with its state-of-the-art offerings. As a follow-up to our Annual Report on Digital Payments in 2018, we are excited to showcase an in-depth analysis of payment trends from January till March 2019 in this report. In addition, being the payment processor for a vast number of banks, we have also provided some interesting consumer payments behaviour.

Happy reading!

Deepak Chandnani
Managing Director, Worldline South Asia & Middle East

Worldline

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Review of Q1 2019

Worldline has over 1 million merchant touchpoints PAN-India accounting (30% of the merchant acquiring touchpoints). We have analysed transactions processed by us in Q1 2019 (Jan-Feb-Mar) and derived some unique insights.

Merchant Acquiring

In FY 2018-19, there was a concentrated effort by the government and banks to increase the deployment of point of sale (POS) terminals; the target was 2 million terminals but the achievement was half of that.

The number of point of sale (POS) terminals increased to 3.72 million in March 2019, an increase of 18.6%, from 3.14 million in March 2018.

For FY20, the government has now targeted a growth of 33%. It has also mandated the banks to deploy around 8.5 million POS terminals across rural areas and North-Eastern states. This move to promote deployment of POS terminals is an indication of the way ahead for the sector. Given this potential and the fact that the merchant acquisition infrastructure remains largely unfulfilled, several companies have entered the physical POS terminal market and made investments to install POS terminals across retail outlets.

POS Terminal Deployment
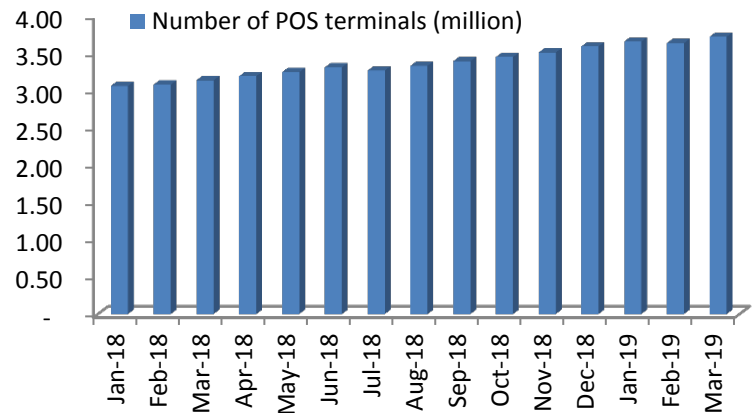
Source: Reserve Bank of India

The private sector banks led the way with POS terminal deployment both in terms of numbers and year-on-year growth. The total POS terminals deployment stood at 2.4 million for private sector banks (up by 31% from Mar-18), 1.1 million for public sector banks (down by 0.8% from Mar-18) and 0.07 million for foreign banks (up by 6.7% from Mar-18).
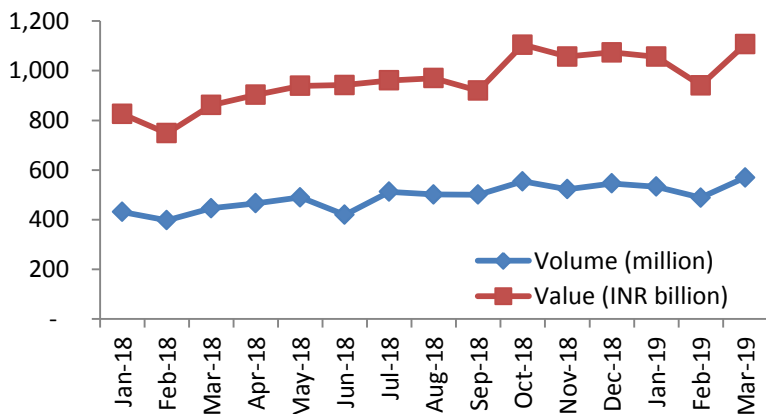
Share of Banks (POS terminals)

Source: Reserve Bank of India

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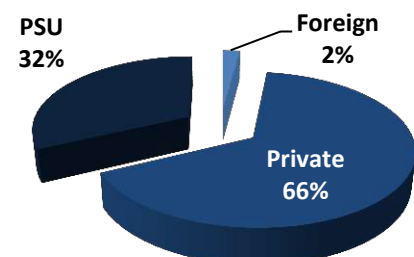
A point to note is that while 29% of transactions on POS terminals were done using credit cards, they translated to 52% of the total amount spent on POS terminals. One reason is the conservative nature of Indian consumers who mostly use debit cards for their daily purchases and credit cards for purchasing high value items. In Q1 2019, the average ticket size on POS terminals for debit card transactions was INR 1,323 and INR 3,477 for credit card transactions.

Volume and Value Growth of transactions on POS Terminals

Source: Reserve Bank of India

In addition, the growth in volume and value of POS terminals didn't translate to the total share of transactions done by cards (ATM + POS).

While the transactions at POS terminals increased from 1.3 billion transactions in Q1 2018 to 1.6 billion transactions in Q1 2019 (up by 24.8%), the share of card transactions at POS terminals to total card transactions went up from 36% to 38% only.

Similarly, while the value of transactions at POS terminals have increased from INR 2.4 trillion in Q1 2018 to INR 3.1 trillion in Q1 2019 (up by 27.4%), the share of value of money spent through cards at POS terminals to total money spent through cards at POS terminals and ATMs went up from 24% to 27.6% only.

The above information is of particular interest because the number of POS terminals actually increased by 18.6% while the number of ATMs remained constant at 0.2 million during the year indicating that despite the push from the government to increase awareness about digital payments along with the sustained effort by banks to enrol merchants to join the digital payments platform, cash is still king.

Some of the key impediments to the growth of digital payments are lack of financial literacy amongst smaller merchants, high propensity of households to save in cash and the unorganised cash-intensive SMEs.

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The top 6 banks, i.e.,RBL Bank, State Bank of India, Axis Bank, HDFC Bank, ICICI Bank and Corporation Bank, accounted for over 75% of the total terminals in the country.

POS terminals by Merchant Acquiring Banks
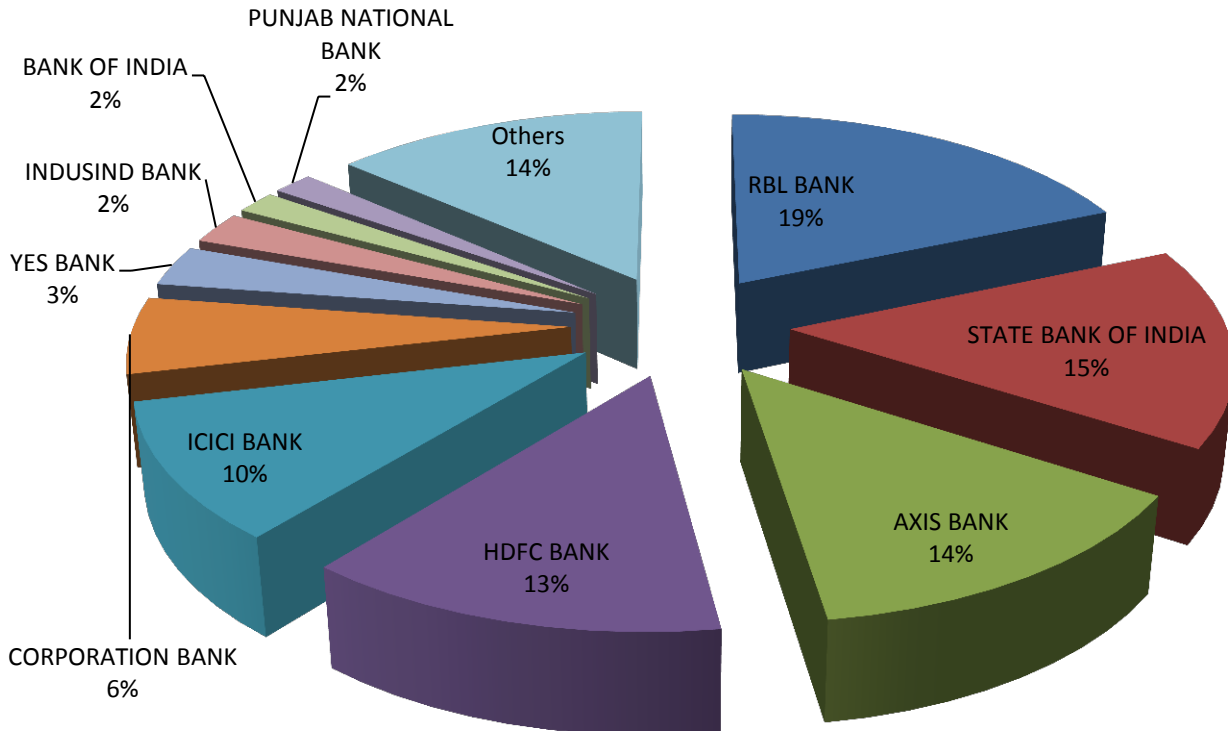
Source: Reserve Bank of India

Worldline Insights

January was the month with the highest number of transactions in Q1 2019. January 23 ranked as the day with the highest number of transactions but this should come as no surprise given the commencement of the Republic Day sale offers. The days with second and third highest number of transactions were January 12 and January 13 which were Lohri and Makar Sankrati respectively. The trend of highest number of transactions recorded during festivals continued like previous year.

The merchant categories with the highest volume and value of transactions in Q1 2019 were Grocery, Restaurants, Petrol Stations, Apparel Stores and Specialty Retail which accounted for about 65% volume of transactions and about 40% value of transactions. The categories remained the same for both credit and debit card transactions.
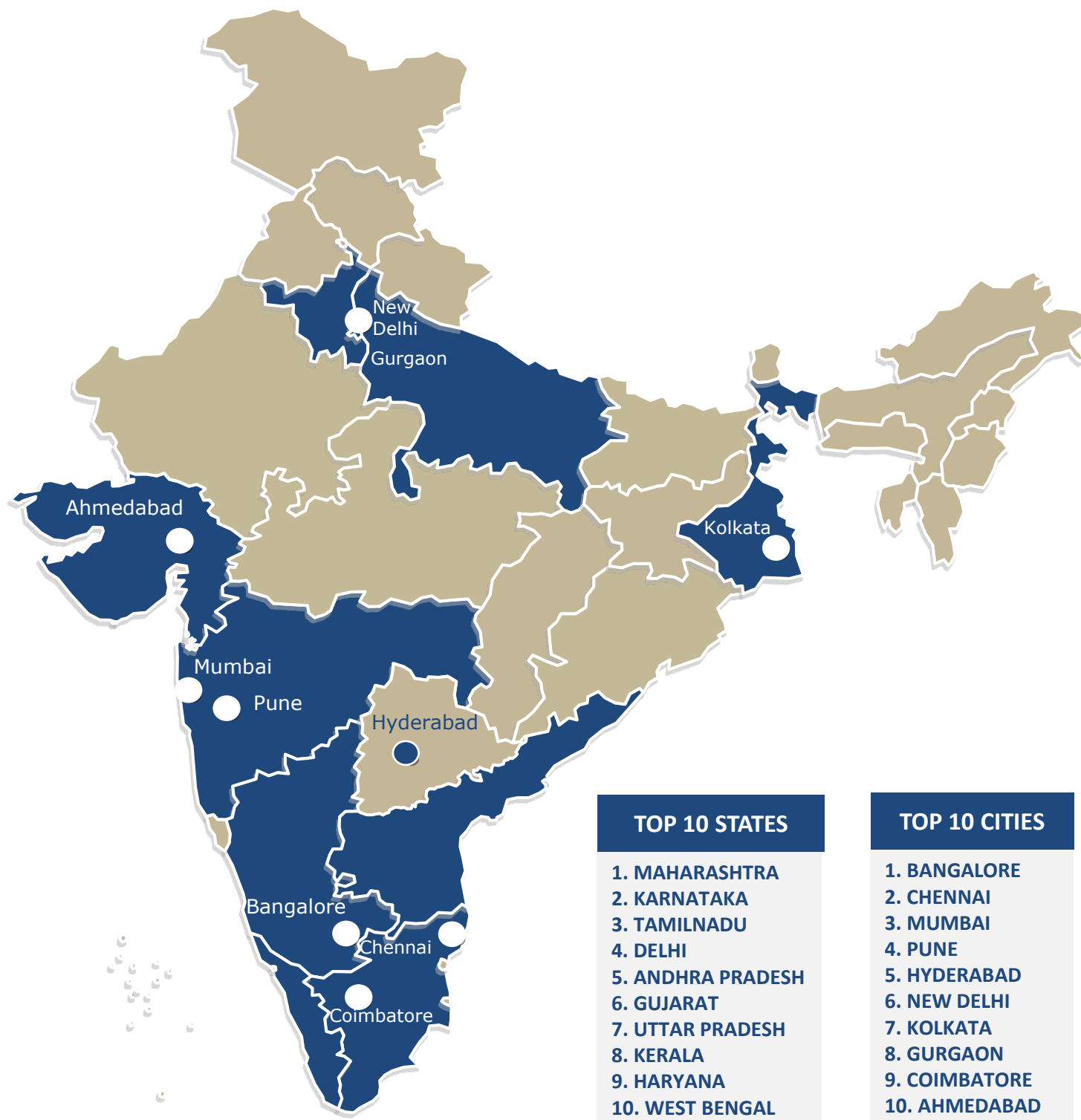
Top Merchant Categories

Festival	Volume Growth	Value Growth	Top Merchant Categories
Pongal	29%	55%	Value growth of 40-50% in cinema, household appliances, petrol stations, vehicle rentals.
Republic Day	37%	29%	Value growth of 65-80% in restaurants, hotels, salon and beauty services, pubs, specialty retail.
Valentine's Day	25%	35%	Value growth of 35-40% in restaurants, specialty retail, jewellery, beauty spas, gifts.
Holi	53%	79%	Value growth of 120-150% in restaurants, salon and beauty services, household appliances, apparel retail.

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States and cities with the highest number of transactions in the first quarter

| TOP 10 STATES	TOP 10 CITIES
1. MAHARASHTRA	1. BANGALORE
2. KARNATAKA	2. CHENNAI
3. TAMILNADU	3. MUMBAI
4. DELHI	4. PUNE
5. ANDHRA PRADESH	5. HYDERABAD
6. GUJARAT	6. NEW DELHI
7. UTTAR PRADESH	7. KOLKATA
8. KERALA	8. GURGAON
9. HARYANA	9. COIMBATORE
10. WEST BENGAL	10. AHMEDABAD

Unified Payments Interface

UPI has been key in steering the entire ecosystem of consumers, payment processors and banks towards digital transformation and it continued its monumental growth in 2019.
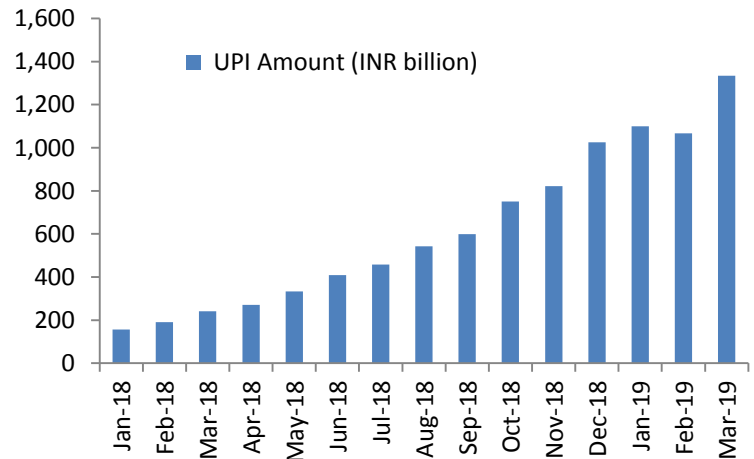
The total volume of UPI transactions in Q1 2019 was 2.1 billion, a 328% increase from Q1 of the previous year. In terms of value, UPI clocked INR 3.5 trillion, up 495% from Q1 of the previous year.
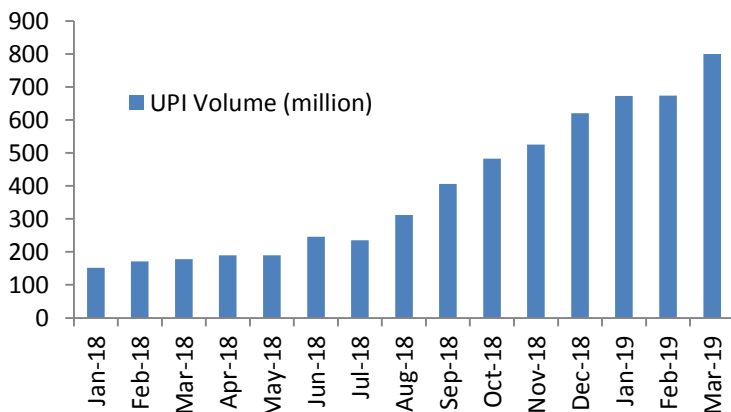
UPI Transactions Value

UPI Amount (INR billion)

Source: NPCI

Some banks have sent notifications to their customers stating that P2P (peer-to-peer) UPI transactions, from May 1, 2019, would be chargeable after 30 transactions while P2M (peer-to-merchants) transactions will continue to remain free. This is intended to prevent abuse of the UPI system where individuals are taking advantage of offers given on UPI transactions and will not impact genuine transactions. The uptick may slow-down slightly because of this but the increase in P2M transactions because of UPI 2.0 and the government's plan to make QR code-based payment mandatory in all shops will likely nullify the negative effect.

UPI Transactions Volume

UPI Volume (million)

Source: NPCI

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UPI Average Transaction Value (INR)
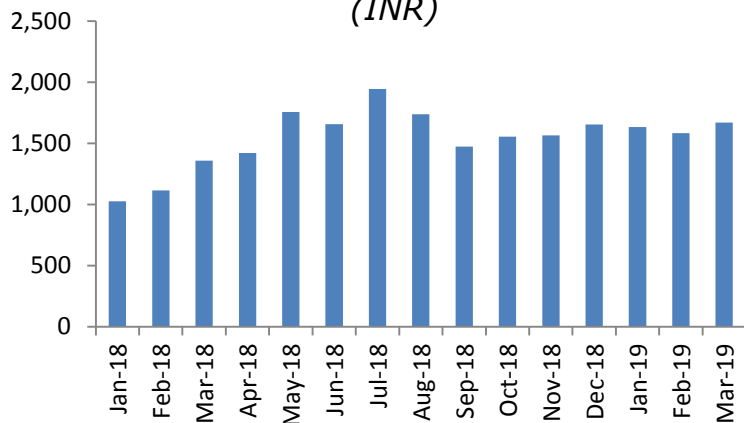
Source: NPCI

Local players such as Paytm and PhonePe have been competing for market share in the digital payments space, facing stiff competition from the global giant Google. They together process 80-90% of UPI transactions, of which Paytm leads in terms of transactions volume and Google Pay leads in terms of transactions amount. This essentially means that Google Pay is quite close to Paytm in terms of volume and way ahead of in terms of value. Freecharge, Mobikwik, HDFC PayZapp, ICICI Pocket are the other players on the UPI platform. Aggregators like Ola and Uber are also issuing their UPI handles.

UPI Transactions Volume and Value in March 2019

PSP	Transactions Volume (million)	Transactions Value (INR billion)
Google Pay	220	450
Paytm	225	320
PhonePe	220	320

Source: Times of India

Amazon Pay has finally marked its entry in the Indian P2P (peer-to-peer) transaction market; its entry in UPI payments was delayed due to data localisation and data privacy regulations and it had relied on providing online payment services via UPI apps like BHIM.

Also, with the upcoming WhatsApp Pay, the UPI platform is bound to break its transaction records in the coming months. UPI has the potential to transform the payments ecosystem in India and we've only seen the tip of the iceberg.

Immediate Payment System (IMPS) continued to rise despite the growth in UPI and wallets, and showed a strong jump in Q1 2019. IMPS recorded 528 million transactions, a 71% increase from Q1 of the previous year. In terms of value, IMPS clocked INR 4.7 trillion, up 70.5% from Q1 of the previous year.

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Card payment instruments remain the most preferred option among consumers primarily because of the ingrained behaviour of consumers to pay for items through cards, credit or debit. Card issuance will see an uptick with the rise of several metro and smart city projects. National Common Mobility Cards (NCMC) solution has the potential to digitalise transit payments like Bus, Metro, Cab etc. and other payment channels like toll, parking, small value offline retail payments and normal day-to-day retail payments. In addition to this, payments banks and aggregators are also set to introduce credit cards to a new all-digital consumer base.

There are about 925 million debit cards and about 47 million credit cards in circulation. Between March 2018 and March 2019, India added about ten million credit cards and 64 million debit cards. It is worth noting the number of debit cards started falling after hitting a high of 998 million in October, likely due to the mass closure of accounts with zero balances.

Debit Cards in Operation
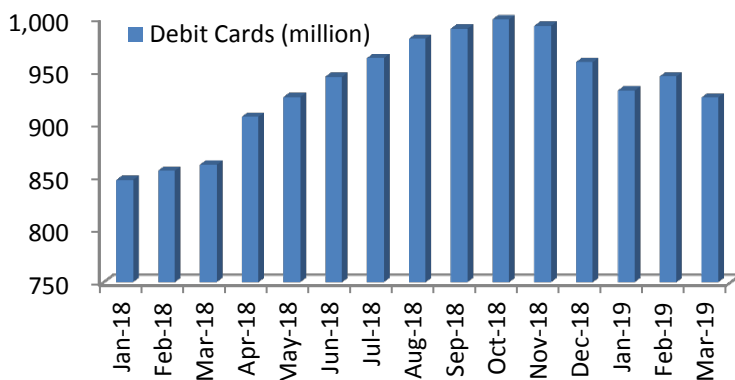
Credit Cards in Operation

Source: Reserve Bank of India
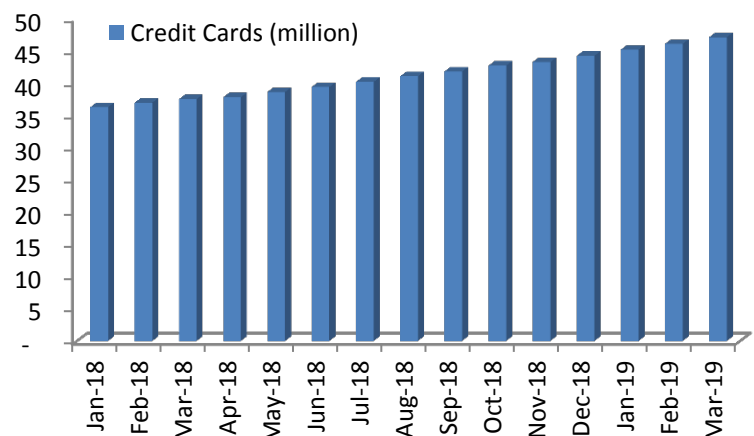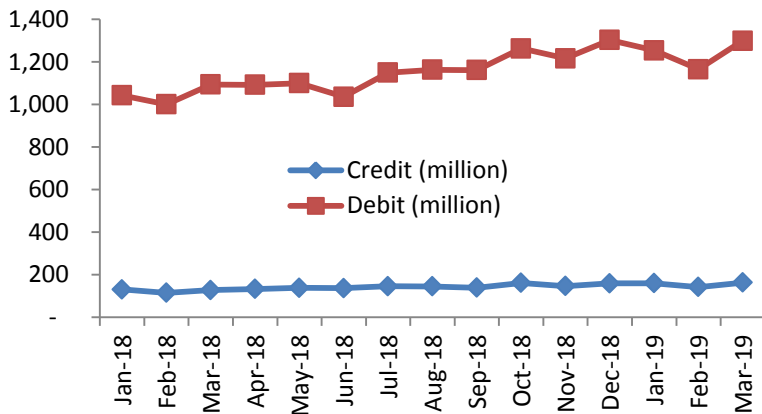
Source: Reserve Bank of India

In Q1 2019, the total number of credit card transactions was 466 million, an increase of 24.5% over the previous year and the total number of debit card transactions was 3.7 billion, an increase of 18.5% over the previous year.
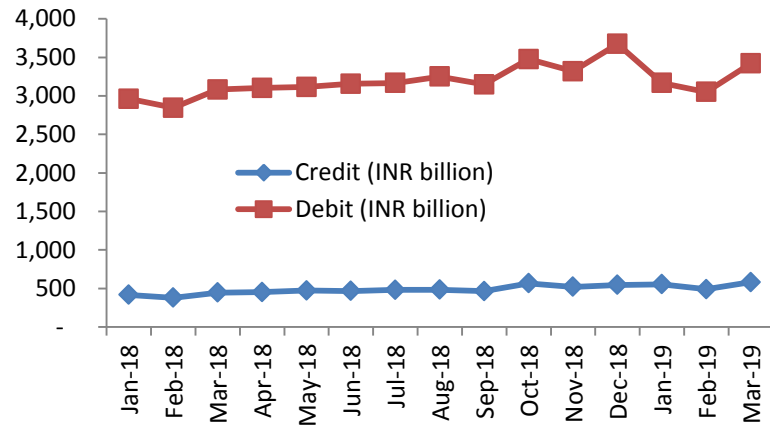
In Q1 2019, total value of transactions done on credit cards was INR 1.6 trillion, an increase of 30.4% over the previous year. The total value of transactions done on debit cards was INR 9.6 trillion, an increase of 8.4% over the previous year.

Credit and Debit Card Transactions Volume

Source: Reserve Bank of India

Credit and Debit Card Transactions Value

Source: Reserve Bank of India

The below table illustrates how credit and debit cards are used. It is quite clear that debit cards are largely used for ATM withdrawals while credit cards for POS transactions. Also, consumers tend to make larger ticket size purchases at POS terminals when compared to debit cards. The challenge will be how to move ATM transactions into digital payment transactions which fits into the national agenda of going digital.

RuPay Card Transactions at POS in Q1 2019

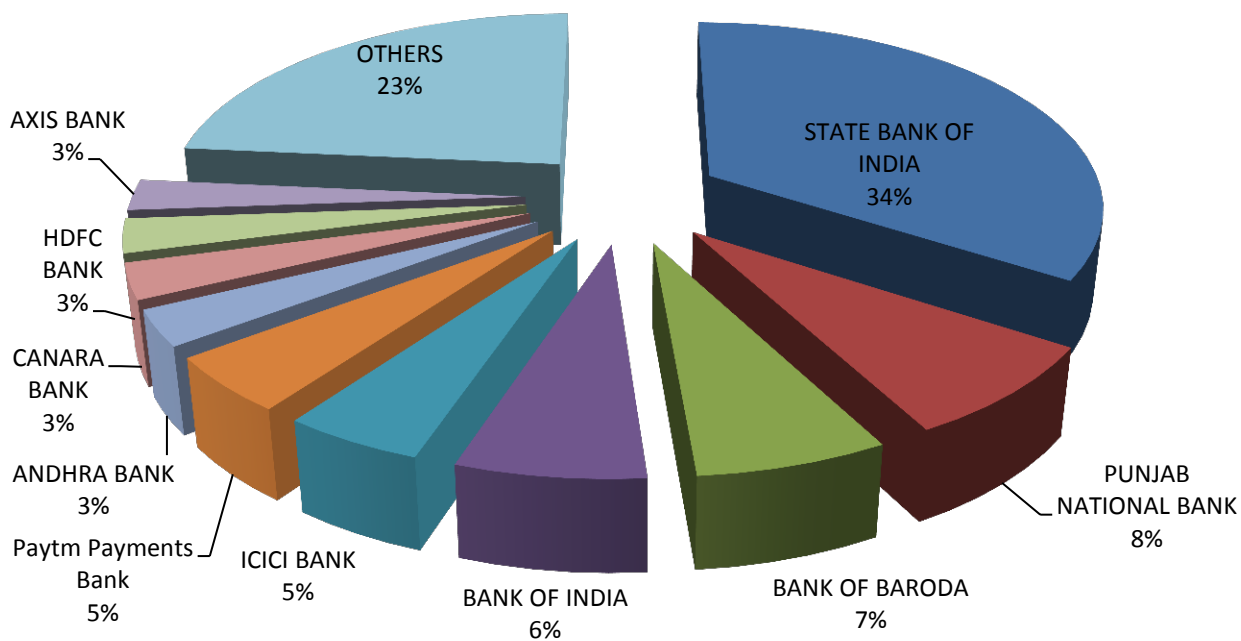| Volume (million)	Value (INR billion)
155.3	222.2

Source: NPCI

Credit and Debit Card Transactions Volume in Q1 2019

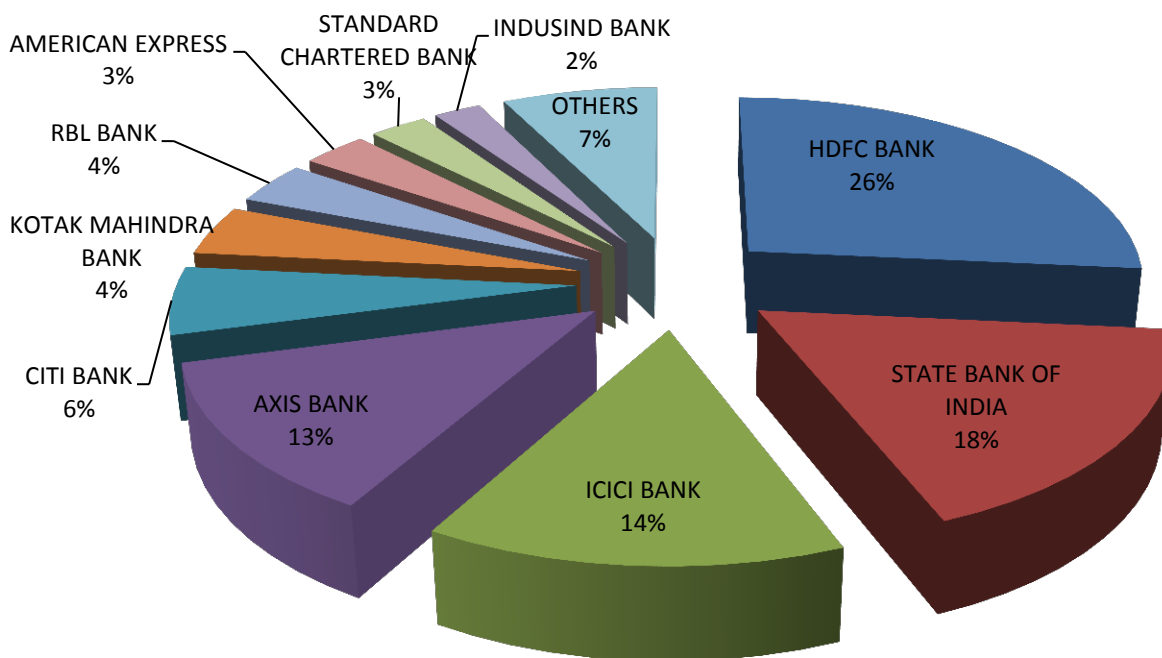|	Volume (million)		Value (INR billion)		Average ticket size (INR)	
	POS	ATM	POS	ATM	POS	ATM
Credit cards	463.3	2.5	1610.8	11.6	3476.7	4629.5
Debit cards	1128.3	2589.8	1492.9	8145.5	1323.2	3145.2

Source: Reserve Bank of India

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Debit Card Issuers

Source: Reserve Bank of India

## Credit Card Issuers

Source: Reserve Bank of India

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Mobile Wallets

The upcoming opportunity in digital payments space is huge. The digital payments market in India is expected to grow to US $ 1 trillion by 2023 led by growth in mobile payments, according to NITI Aayog. The market is such that various instruments could exist and grow without cannibalizing each other's share. However, consumers have a choice to use their preferred app to fulfill their payment needs. First time users may start their digital payments journey by using simpler instruments like mobile wallets before making the transition to UPI apps.

The Reserve Bank of India has permitted 46 entities to launch their Prepaid Payment Instruments (PPI) for consumers and according to their latest data, **the number of transactions done on mobile wallets in Q1 2019 was 1.12 billion, an increase of 24.42% over Q1 of previous year while the value of transactions in Q1 2019 was INR 461 billion, an increase of 28.77% over Q1 of the previous year.**

In Q1 2019, RBI extended the deadline for compliance with KYC norms for PPI issuers by six months from earlier deadline of February 28, 2019. This may have resulted in a 12% spike in the wallet transactions for the month of March, over February.

*Volume and Value of Transactions done on Mobile Wallets*
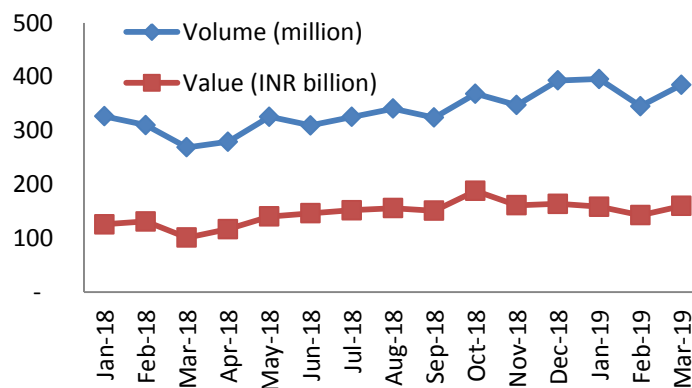
Source: Reserve Bank of India

The growth of mobile wallets has not taken off much following the emergence of UPI.

While there was a 43.2% increase in the number of transactions done on mobile wallets in March 2019 over the previous year, the increase in the number of transactions done on UPI over the previous year was a massive 349%. In absolute terms as well, transactions done using mobile wallets in March 2019 (INR 160 billion) are only 15% of the size of the total transaction value on the UPI platform (down from 42% in the previous year). It is clear that the growth in UPI is coming at the expense of wallet transactions.

Mobile Wallets vs UPI

Source: Reserve Bank of India

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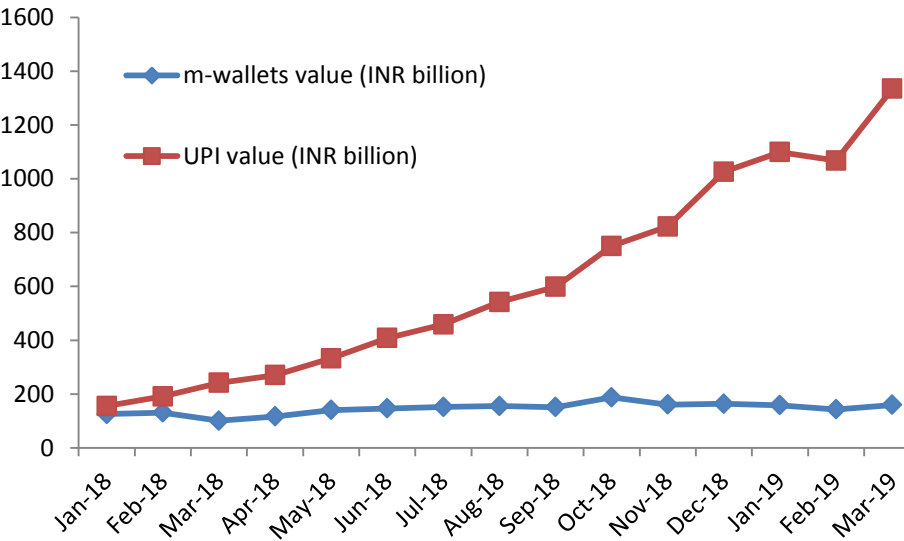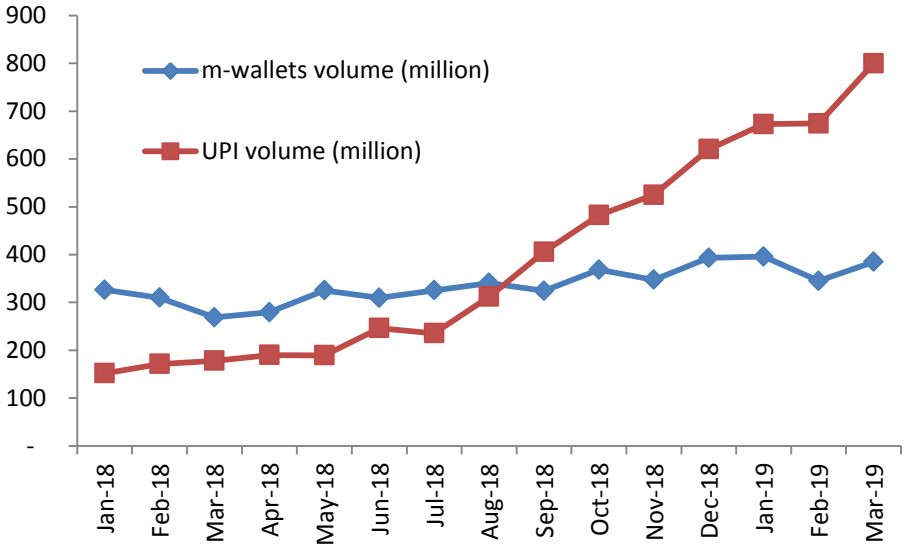
Currently NETC processes 0.8 million transactions daily across 496 national and state toll plazas, and accounts for 25% value of the total toll collected. The electronic toll transactions are expected to increase to about 50% on national highways before the end of the year.

NETC transactions in Q1 2019 stood at 75.1 million, a jump of 78.3% over Q1 2018 and the value of transactions was INR 16.59 billion, an increase of 57.2% over Q1 2018. The tag issuance base in Q1 2018 jumped manifold, with an increase of 179.1%, to 4.55 million tags in Q1 2019. The increase in these numbers show sustained consumer acceptance.

NETC has been developed to meet the electronic tolling requirements of India offering an interoperable nationwide toll payment solution that allows a tag holder to use their FASTag device as a payment mode to make the toll payments directly from their linked FASTag wallet account, without having to stop their vehicle at the toll booth. In future, NETC can gain significant momentum by adding more use cases like parking, e-challan etc. and become a single stop solution for all vehicle-related payments.

Tag Issuance (million)

Source: NPCI

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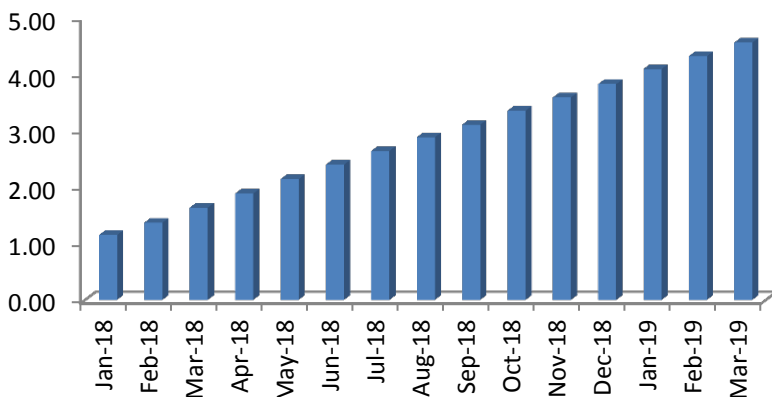
ADYTON
revolutionary security

Highly secure

Secure data transaction systems – including token generation, transaction processing, digital signatures, data protection – are built around a Hardware Security Module (encryption device).

The revolutionary solution from Worldline is a hardware-based encryption device and cryptographic accelerator: ADYTON. This device provides unprecedented security, speed and user-friendliness, and adds a new dimension to overall security by including fingerprint, chip-card and password authentication. ADYTON guarantees dual control for administrators and security officers.

ADYTON meets all current international standards and is ready for the future.

Great styling

The styling of the ADYTON fuses fashionable beauty and functional perfection. The aluminium housing is a perfect heat conductor: removing the need for electrical cooling brings a smaller energy footprint, lower noise levels and higher reliability.

ADYTON has been chosen as winner of the red dot design award 2012 and the iF design award 2013.

reddot design award winner 2012

product design award iF 2013

The design also incorporates modern features such as capacitive keys with distinct white and blue illumination, fingerprint-reader, chip-card reader, USB connector and high-resolution colour display.

With the robust guide rails on each side, ADYTON easily slides into the ADYTON Rack for simple, secure installation in standard IT-cabinets. The rack features two physical locks, covered mounting holes, two 1Gb LAN connectors and two hot-swappable power supplies.

Focus on the user

Operating ADYTON is easier than operating a smartphone! The front panel is clearly arranged in blocks: display, keyboard and authentication devices.

- The 24-bit colour display uses strong contrasts for easy legibility. Wizards guide the user through the selected operations and user input is clearly indicated on the display. There are also shortcuts for the most common functions.

- The keypad gives a clear feedback with the help of its distinct illumination. The hexadecimal layout also allows easy key entry.

Powerful

ADYTON is built for power, speed and revolutionary reliability. It calculates about 7,000 RSA private key operations and over 10,000 symmetric-key transactions – per second. The platform is based on a dual-core processor and has a cryptographic accelerator designed by Worldline.

High performance also needs suitable channels. The cryptographic operations are injected in the network via two 1Gb LAN connections.

Reliable

ADYTON runs on a QNX® Neutrino® RTOS operating system, ensuring high software stability and reliability. To reduce downtime due to hardware failure, the ADYTON has been designed without any moving parts. No switches, no cooling fan...

The design also takes external factors into account: two hot-swappable power supplies and two 1Gb LAN connectors guarantee that ADYTON keeps on performing. ADYTON was tested under extreme conditions, ready for integration in IT-cabinets with limited air circulation.

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ADYTON - revolutionary security

Low cost of ownership

It is not only ADYTON's outstanding reliability and performance that keep total costs of ownership low, but also some less obvious features.

Integrated user management functions make operations easier. The understandable interface reduces training costs. Push and pull cloning enable easy remote management of Hardware Security Modules, reducing the need for on-site interventions by service staff.

And like all Worldline devices, ADYTON offers compatibility with the previous version: cryptographic services are compatible with DEP/T6.

Cloneable

New cloning functions let you set up two or more ADYTON with identical configurations. The principle of cloning is based on secure ADYTON to ADYTON communication (SSL).

- Pull cloning: add a new ADYTON to a system by copying the configuration of a master ADYTON on to a client device for immediate use.

- Push cloning: update a system with several ADYTON via the master ADYTON. Updates are downloaded and installed on the master device first, then distributed to the client devices.

Markets

ADYTON is suitable for any market where highsecurity cryptography is required, such as:

- Finance (issuing, processing, acquiring, EMV, NFC, 3DSecure, PCI DSS, card personalisation, tokenisation and much more)

- Industrial production (injecting keys in secure chips such as TPM)

- Energy (smart metering, smartgrid...) telecom (SIM personalisation, mobile wallets, secure OTA solutions...)

- Multimedia delivery (payTV...)

- e-health, electronic document signature, confidential information exchange, on-line gambling...

Specifications

ADYTON

- Tamper evident, tamper responsive and tamper proof design
- Colour display, fingerprint reader (FIPS 201), chip-card reader, USB-Host, HEX-keypad
- Around 7,000 digital RSA private key operations per second
- +10,000 symmetric key transactions per second
- Host Authentication and encryption through SSL (optional)
- Push/Pull cloning

Communication

- USB device interface* (also for ADYTON rack)
- 1 Gb LAN connector

Physical characteristics

- Dimensions: 24 x 7 x 18.5 cm (w x h x d)
- Ambient temperature: 0°C - 35°C
- Relative humidity: 10%-90%
- 100-240 VAC, 50/60Hz, 1.4A

Certification and compliance

- FIPS 140-2 Level 3 certified
- Hardware FIPS 140-2 Level 4 certified
- Cartes Bancaires (FR) certified (MEPS2)
- FIPS 140-3 (draft) compliant
- Fingerprint FIPS 201 certified
- FCC, CE

Algorithms

- Random number generator (SP800-90)
- RSA (X9.31 key generation, encrypt/decrypt, sign/verify)
- ECC (key generation, encrypt/decrypt, sign/verify)
- (T)DES (encrypt/decrypt, MAC)
- AES (encrypt/decrypt, MAC)
- HMAC
- MD5, SHA1, SHA2, SHA256, SHA512
- X509
- All functions supported by OpenSSL Crypto Library (www.openssl.org)

ADYTON rack

- Increases high reliability
- Two redundant hot-swappable power supplies
- Two 1Gb Ethernet interfaces
- Two physical locks prevent unauthorised removal of ADYTON and ADYTON Rack
- Swappable ADYTON

Communication

- USB device*
- Two 1Gb LAN connectors

Physical characteristics

- 19" rack for integration in standard IT cabinets - 2U High
- Dimension: 48 x 8.8 x 43 cm (w x h x d)
- Weight: ~15 kg
- 100-240 VAC, 47-63Hz, 1.5-1A

Interfaces (ADYTON & ADYTON rack)

- Dedicated API
- PKCS #11
- JAVA (JCE) support through standard
- JAVA-PKCS#11 wrappers including EJCBA, IAIK-JCE
- OpenSSL using standard PKCS#11 Engine
- HTTP (for big data operations)

Power consumption at 20°C ambient temperature

- standalone ADYTON - ~16W (typical) to ~20W max.
- ADYTON in ADYTON Rack - ~18W (typical) to ~23W max.

Hardware only

About Worldline

Worldline India (WI) is wholly owned by Worldline SA, a leading payments company in Europe that is listed on Euronext Paris. Worldline entered India in 2010 with the acquisition of Venture Infotek followed by the acquisition of MRL Posnet in 2017. While WI's business is primarily in India, it is expanding its footprint in the Middle East, Sri Lanka and Bhutan.
Headquartered in Mumbai, it has offices in 10 cities and a reach in over 3000 cities and towns across the geographic spread of India. Worldline India is a transactions facilitator in all spectrums of the digital payments ecosystem and provides the highest available level of products, services and solutions that are fully compliant with PCI and Reserve Bank of India guidelines. Worldline India is the payment partner of choice for merchants, banks, government agencies and industrial companies, delivering best-in-class digital transaction services.

Worldline

Worldline India (WI) is wholly owned by Worldline SA, a leading payments company in Europe that is listed on Euronext Paris. Worldline entered India in 2010 with the acquisition of Venture Infotek followed by the acquisition of MRL Posnet in 2017. While WI's business is primarily in India, it is expanding its footprint in the Middle East, Sri Lanka and Bhutan. Headquartered in Mumbai, it has offices in 10 cities and a reach in over 3000 cities and towns across the geographic spread of India.

Worldline India is a transactions facilitator in all spectrums of the digital payments ecosystem and provides the highest available level of products, services and solutions that are fully compliant with PCI and Reserve Bank of India guidelines, along the full length and breadth of the payments value chain. The main areas of business in the digital payments ecosystem it is involved in are:

POS Merchant acquiring – WI works with over 30 banks and institutions and has an excess of 1 million merchant touchpoints PAN-India accounting for 30% of the merchant acquiring touchpoints – the largest in the Indian merchant acquiring industry – in the form of both POS terminals and QR code decals with the former accounting for over 85%. These terminals allow merchants to accept payments in a variety of channels; cards, QR codes and wallets. WI manages the terminal fleet, processes the payment transactions and provides an end-to-end service. In 2018, WI processed over 1 billion acquiring transactions.

Card Issuance – In this space, WI manages end-to-end solutions for credit and prepaid cards. It works with 14 banks and prepaid issuers managing over 5 million cards in India and outside.

EMI solutions for Non-Bank Finance Companies (NBFCs) – Worldline India works with 2 leading national NBFCs providing end-to-end customized EMI (Equated monthly instalments – a specific type of consumer) solutions. WI manages over 8 million customer accounts for these clients.

Loyalty solutions for petroleum companies – WI built a full-fledged loyalty solution and operates it for oil majors Bharat Petroleum, Indian Oil and Shell.

Internet payment gateway – WI has an advanced offering focussing on specific sectors providing a fast, reliable and secure payment gateway to process online transactions.

National Electronic Toll Collection– WI offers end-to-end NETC solutions from both the issuance and acquiring sides and works with many banks.

Risk Mitigation – Using a combination of a global risk engine and home-grown sophisticated risk engines that incorporate machine learning, WI provides fraud and risk mitigation services in the areas of merchant acquiring, card issuing and internet payment gateway to over 20 banks.

Value-added services – WI provides merchants value-added services on their terminals such as bank and brand EMI, dynamic currency conversion, among others.

Worldline India is constantly investing in the latest technology to increase efficiencies, drive innovation and deliver customer delight. It is the payment partner of choice for merchants, banks, government agencies and industrial companies, delivering best-in-class digital transaction services.

Worldline

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Worldline