

The Indian payments handbook – 2020–2025

December 2020



Preface

Dear readers,

It is our pleasure to bring to you 'The Indian payments handbook – 2020–2025.' This is PwC's first annual publication focusing on India's digital payment industry landscape. In this report, we have analysed the evolution of the Indian payment ecosystem in the last few years, key trends that have shaped the Indian payment space and how the ever-dynamic payments market will shape up by 2025.

In the last couple of years, we have seen various new and faster payment modes emerge and establish their presence in the Indian digital payment space. This has largely been possible due to regulators introducing new initiatives and products to push digital payments, and industry stakeholders encouraging customers to shift from paper-based to digital payment modes.

Based on insights gathered from our experience of working with key stakeholders in this space from across the world, we have analysed a few trends on how the digital payment landscape will be defined by overlay services, invisible payments, contextual payments and offline payments in the future.

We have assessed the impact of the COVID-19 crisis on India's digital payment industry and how the pandemic has changed the behaviour of customers using digital payment modes. Usage of digital payment modes will see a V-shaped recovery in the future, which is evident from the recent performance and growth in digital transactions.

The benefits of shifting towards digital payments are visible in India. These benefits will witness an upward trend, marking a significant change in how the Government, corporates and citizens adopt new technologies for their transactions.

We truly believe that India is at the forefront of a digital payment revolution that will have a significant impact not only on the South Asian region, but worldwide as well. There are great learnings from our India experience that can be shared with the world. We are fortunate that our experience of transformation in the payments space has allowed us to learn and grow.

We hope you will find this report to be a good and insightful read.

Mihir Gandhi

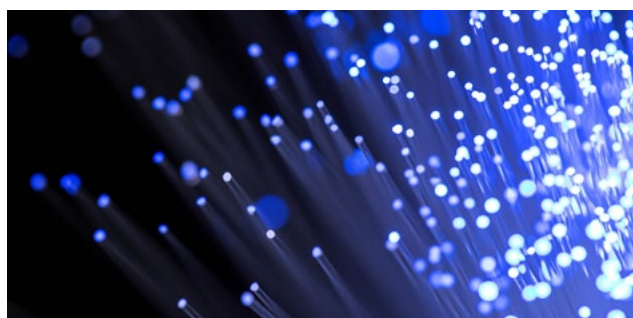
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Table of contents



I. The new normal for payments

06



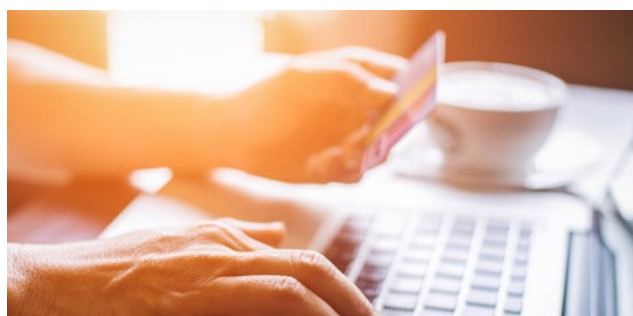
II. Future of top payment modes

10



III. How will the market shape up?

28



IV. Conclusion

33



Executive summary

The Indian digital payment space has seen extraordinary growth in the last few years, with the volume of transactions increasing at an average compound annual growth rate (CAGR) of 23%.¹ The launch of new and innovative payment products like Unified Payments Interface (UPI), National Electronic Toll Collection (NETC) and Bharat Bill Pay Service (BBPS) have firmly placed the digital payment industry on an upward growth trajectory.

With new payment technologies and use cases across sectors emerging, this growth momentum is expected to continue. COVID-19 will be a minor blip in the growth story and then prove to be an inflection point as transactions saw a minor drop in the early months of FY 2020–21 and have now begun to go back to pre COVID-19 levels. We have seen a V-shaped recovery post the pandemic, as the outbreak accelerated the shift to digital platforms. Businesses are now looking to integrate both online and offline channels in order to provide an omnichannel experience to their customers. UPI recorded the highest number of transactions ever in September and volumes have already gone back to pre-lockdown levels. We've also seen a similar recovery in NETC transactions.

Growth in digital payments in India has been driven by multiple factors such as the launch of new and innovative payment products, increasing smartphone adoption, a growing need for faster payment modes, and a strong push from the Government and regulators towards adoption of digital channels. Prior to 2010, digital transactions saw single-digit growth. From 2010–2016, this figure rose to 28% owing to the launch of faster payment modes in the country and jumped to 56% in 2016–17 following demonetisation. COVID-19 has further accelerated the shift to digital payment modes. Together, these factors are likely to create a revenue pool of INR 2,937 billion by 2024–25 for payment players – a figure that stood at INR 1,982 billion in 2019–20.

Since its launch in 2016, UPI, has seen an exponential CAGR of 414% until FY19–20 and has become the most preferred payment product in terms of volumes. Person-to-merchant (P2M) payment, which accounts for approximately 40% of the total number of UPI transactions, has become the preferred mode of payment for both online and offline merchants. We expect the volume of UPI transactions to grow by seven times by 2025.

Apart from UPI, BBPS and NETC have also grown at a similar pace. Both BBPS and NETC are growing at a CAGR of 500% and 123% respectively since 2018, with the help of a government and regulatory push.

Banks and non-banking financial companies are now more focused on providing integrated solutions. Digital payments have evolved from being viewed as a cost centre for banks to a revenue centre and a key lever for customer acquisition. Financial companies have stepped up their efforts to strengthen their payment infrastructure and have started offering other adjacent services such as lending, wealth management, microinsurance, and use of data analytics to offer more customised solutions for customers.

¹ PwC analysis of data from the RBI and NPCI



The digital payments industry is poised for a transformation that will enable it to improve the customer experience while making payments online. We believe the digital payment ecosystem will flourish with continuous efforts from the Government, regulators and payment companies to increase awareness and trust. We believe that the future success of digital payments will be driven mainly by the factors below:

1. **overlay services** will help businesses in creating value for their customers and improve profitability
2. **contextual payments** will help in leveraging data analytics and AI to understand customer behaviour
3. **offline payments** will provide the next big push to digital transactions as the focus is shifting to this mode and the Reserve Bank of India (RBI) has started encouraging companies to develop an offline payment mode for using cards, wallets and mobile phones to conduct banking transactions
4. **invisible payments** have also gained traction owing to the pandemic and have the potential to drive the course of digital payments in India.

This report provides insights into the future and evolution of the payments market in India. It focuses on the top-performing payment products in the country. It also covers our viewpoint on how the digital payments market will shape up in the coming years and the factors behind the large-scale adoption of digital payments.

For a discussion on the topic or feedback, please write to

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I

The new normal for payments

The last few years have witnessed tremendous growth in digital payments in the country. Digital modes like electronic fund transfer have seen greater adoption, along with increased use of cards backed by customer propositions around loyalty and privilege programmes, exclusivity, etc., and an increase in the merchant base aided by a proliferation of e-commerce sites and apps.

Over the years, successive governments and the RBI have issued enabling guidelines that have been instrumental in driving the growth of digital payments in India.

Key outcomes due to the efforts of multiple stakeholders over the years:²

- 01 Moving from cash to a less-cash society
- 02 Enhancing customer convenience while making daily transactions
- 03 Making the transaction trail transparent
- 04 Attaining global leadership in digital transactions

² <https://rbidocs.rbi.org.in/rdocs/AnnualReport/PDFs/7IXPAYMENTANDSETTLEMENTE2CE762B5ECB494CB12A5366BDA42E51.PDF>

The figure below captures the key developments in the digital payment space:



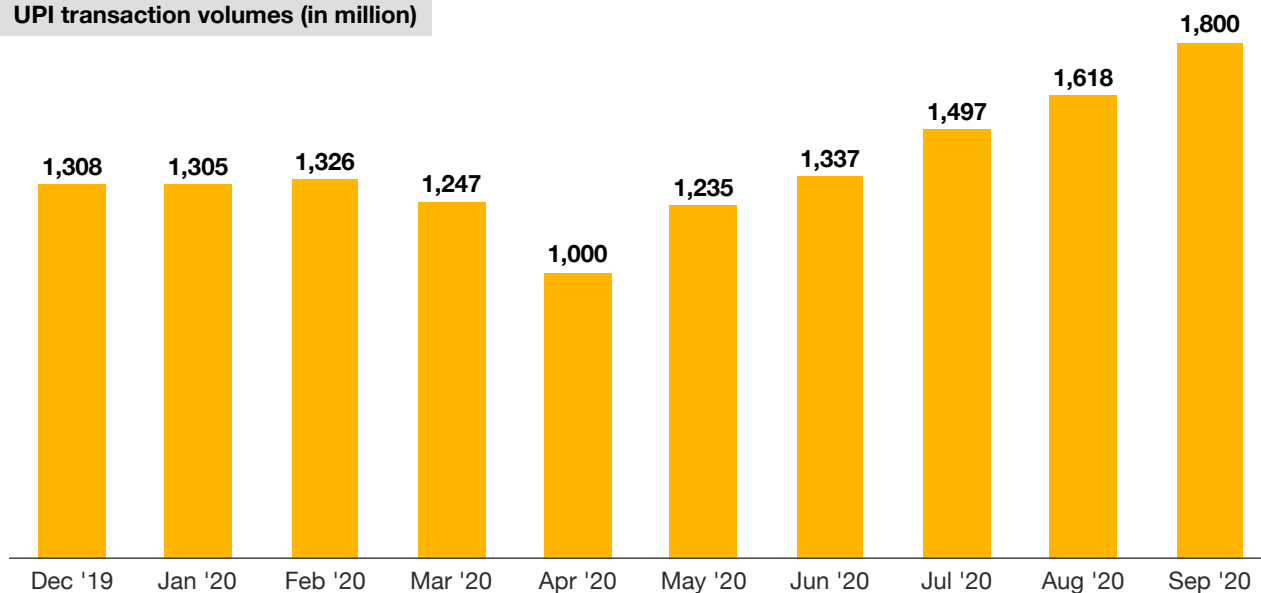
Source: RBI and NPCI

To boost digital transactions and enhance security as well as customer convenience, the RBI has taken numerous steps such as the adoption of the National Common Mobility Card (NCMC), licences to White Label ATM operators, issuance of Europay, Mastercard and Visa (EMV) and Near Field Communication (NFC) based cards and customer grievance redressal. The Government played an active role in popularising digital payment instruments by organising Digi-Dhan Melas across the country and incentivising customers and merchants through the Lucky Grahak Yojana and Digi-Dhan Vyapari Yojana and cashback offers at fuel stations on payments through digital modes.

The growth and potential of digital payments have allowed numerous FinTechs and payment companies to flourish in recent years. Payment companies have leveraged investor funding to diversify their existing product portfolio and become full-stack financial service providers, with a lot of them venturing into lending, wealth management and insurance aggregator platforms. Customers are now offered a one-stop solution for all their financial needs, and this has significantly boosted the customer experience.

However, COVID-19 affected the growth trajectory of payments and reduced economic activity across the nation. Faltering consumer spending led to a decline in digital payments in the short term. As per the data published by the NPCI, April 2020 saw a drop of 20% in the volume of UPI transactions. However, transaction volumes have started recovering and have already reached pre COVID-19 levels. The increase in UPI transactions is due to increased consumer interest in making bill payments and recharging mobile phones online, and purchase of non-essential goods on e-commerce platforms. There has been a shift in the consumer mindset during the COVID-19 crisis and the subsequent lockdown as they have started using digital modes of payment even in sectors like education.

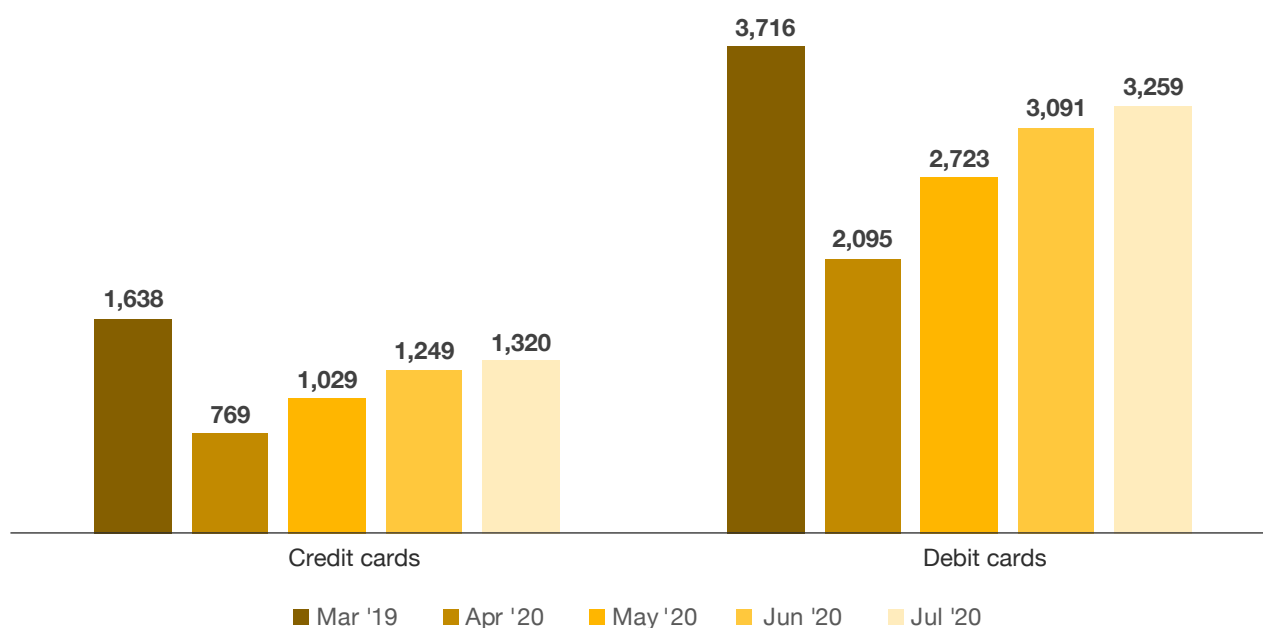
UPI transaction volumes (in million)



Source: NPCI statistics

Also, as per data released by the RBI on card payments, volumes are returning to pre COVID-19 levels for both credit and debit card transactions. The outlook for the long term is positive: The revival of the global and Indian economy will be accompanied by a shift to digital payments across the length and breadth of the country as digital transactions across sectors can continue even during adverse situations, such as the current COVID-19 crisis.

Card payments recovery (in INR lakh)



Source: RBI

While the upward trend in digital payments had already been established in the past few years, the nationwide lockdown enforced in March 2020 accelerated the adoption of digital payments.

The pandemic led to a surge in the usage of digital payment modes among customers, with kirana stores also embracing these modes.

Along with record-breaking UPI transactions and growing acceptance of prepaid payment instruments (PPIs) due to app-based solutions, there has been an increase in the risk of fraud. As per RBI data, there has been a significant jump in fraud transactions in the last few months. The RBI, banks and other players in payment ecosystems will have to step up efforts to strengthen cyber security and make customers aware of potential frauds.

Another trend that is emerging is the increase in failed transactions due to technical declines. Ten of the top 30 Indian banks recorded a 3% failure in UPI transactions in September 2020.³ The surge in UPI transactions is also testing the banking infrastructure and technical systems, which are not adequately equipped to handle the rise in volumes. The RBI, along with the NPCI, is pushing banks to reduce the number of technical failures and work on a real-time redressal system for handling customer complaints. This will reduce the turnaround (TAT) time for banks and speed up the whole process.

We've also seen global investors taking an interest in the Indian digital payment space in the past few years and expect it to continue attracting investments in the coming years. In the first six months of 2020, India's FinTech sector attracted USD 1.47 billion in investments, which is almost 60% higher than that received in the corresponding period last year.⁴

In 2019, total investments in the Indian payments/FinTech space were worth USD 3.7 billion compared to USD 1.9 billion in 2018. Investments in payment companies rose nearly three times to USD 2.1 billion from USD 660 million in 2018.⁵

As of June 2020, there are about more than 2,174 FinTechs in the country, of which 1,500+ came into existence in the last four years.

With global attention fuelling innovation in the digital payment space, the real winners will be merchants and end consumers, who will be offered multiple easy-to-use payment options while availing various allied services.

Over the next few years, we expect the Government of India and the RBI to continue to play a pivotal role in shaping the growth story in payments. This is likely to create a favourable environment and encourage a greater number of non-traditional players to develop innovative payment solutions and become a part of the overall Indian payment ecosystem. This in turn will enable more innovative business models to emerge in the coming years.

3 <https://economictimes.indiatimes.com/tech/technology/surging-upi-failure-rates-worry-banks/articleshow/78779204.cms>

4 <https://www.bloomberquint.com/business/india-fintech-investments-surge-despite-adverse-times>

5 <https://m.economictimes.com/small-biz/startups/newsbuzz/payments-business-leads-fintech-deals-in-india/articleshow/74467955.cms>



Future of top payment modes

From cash as the primary mode of payment and usage of debit cards being limited to cash withdrawals at the beginning of the century, the Indian payment landscape has evolved to widespread adoption of multiple payment products and systems like prepaid payment instruments (PPIs), Immediate Payment Service (IMPS), UPI, NETC, BBPS and Aadhar-enabled Payment Service (AePS). Use cases of cards for e-commerce transactions have expanded and form factors have changed through tokenisation. IMPS and UPI have provided faster mobile-based payment options to customers. Low-value transactions are increasingly being made through these modes, and prepaid wallets and cards are also emerging as other preferred options.

These instruments have helped acquirers (banks) deepen their merchant base.

BBPS has provided an organised platform for bill payments. Similarly, NETC and NCMC have allowed digitisation of payments at toll gates on highways and public transport respectively. In addition, players are offering remittance services to the migrant population.

The COVID-19 pandemic, which brought the global economy to a standstill, triggered a transformation in payments, and customers are expected to increasingly opt for contactless, QR and mobile-/wearable-based digital payment modes.

In addition, wallet providers received an impetus after the RBI announced a new PPI category, and wallets are likely to see greater adoption in the near future.

1 UPI

Since its launch in 2016, UPI has grown exponentially at a CAGR of 414%, clocking 1,246 million transactions in March 2020. However due to COVID-19, UPI transactions declined by 20% to 999 million in April 2020. Since then, there's been a huge upswing in UPI transactions, with an all-time high of 1,800 million transactions having been recorded in September 2020. With new use cases around UPI and growth in person-to-merchant (P2M) transactions, we expect UPI to see continued growth in FY21–22.

As per industry sources, P2M transactions accounted for 40% of the total number of UPI transactions in the last financial year, and grew by almost 100% in the last six months.⁶ With many innovative P2M use cases in the market, we are expecting P2M to grow at a higher pace in the coming years – a trend that will be supported by the latest instructions from the regulators on B2B payments.

⁶ <https://timesofindia.indiatimes.com/business/india-business/upi-starts-growing-after-dip-in-april/articleshow/76144257.cms>


 **1,800** million transactions in Sep'20

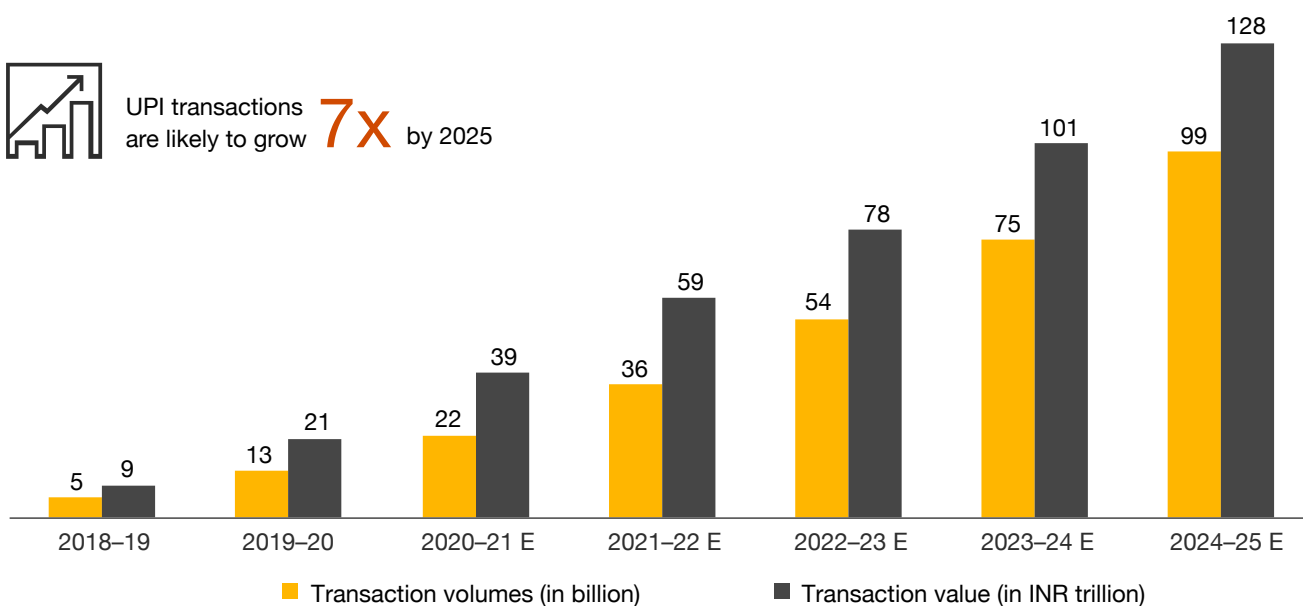
 CAGR of **414%** since inception in 2016

 **200** million plus active monthly users




 **40%** P2M out of total UPI transactions

Projected growth of UPI transactions

 UPI transactions are likely to grow **7x** by 2025



Source: PwC analysis of RBI and NPCI data

 Growth in P2M use cases	 Overall digital payment growth fuelled by UPI	 Other growth drivers
<ol style="list-style-type: none"> Top players have already onboarded more than 20 million offline merchants. Various new use cases like ASBA and AutoPay have emerged. UPI has also been enabled as a payment mode for FASTag recharges, credit card outstanding payments, etc. 	<ol style="list-style-type: none"> The digital payment user base is expected to reach 300 million by 2022. UPI is the second largest payment mode in India. UPI is giving tough competition to e-wallets for P2M payments. NPCI is looking to expand UPI's reach to the international market. 	<ol style="list-style-type: none"> As per the Government mandate, MDR will not be charged on UPI transactions for now. There are various use cases under the Ministry of Finance's UPI 2.0 mandate for merchants with a revenue <INR 50 crore to offer UPI, UPI QR, RuPay and other digital payment modes.

Source: PwC analysis of data from internal research

UPI 2.0

UPI 2.0 was launched in 2018 with the aim of expanding UPI with more use cases. Invoice verification, linking of overdraft account, additional security through signed intent and QR are some of the features introduced in UPI 2.0. Apart from these features, a one-time mandate was also launched which can work as a post-dated cheque.

In July 2020, the NPCI extended this one-time mandate to a recurring mandate. Customers can now set a recurring mandate with UPI and pay mobile bills, electricity bills, loan EMIs, entertainment/OTT subscriptions, insurance premiums, mutual fund investments, transit fare, etc., up to INR 2,000 without PIN-based authentication. If the amount is more than INR 2,000, a PIN is required to execute every instalment/subscription.

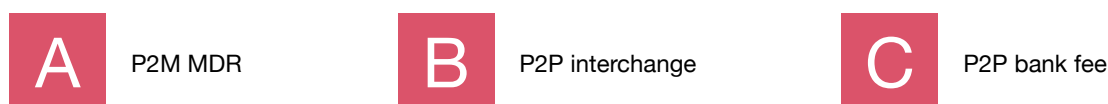
Recurring payments can be a game changer in terms of UPI payment adoption and growth in India. This can provide a major push to the volumes and revenue for UPI players.

UPI revenue

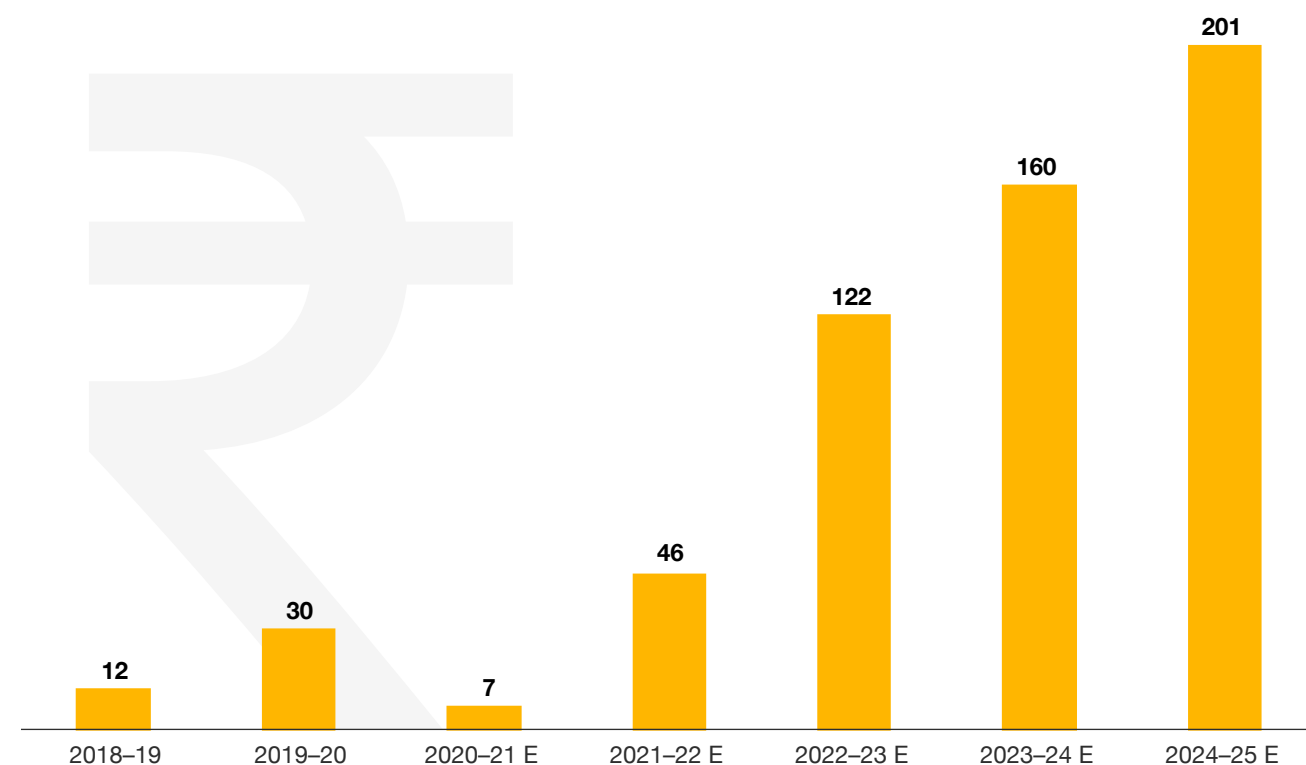
The Government has mandated a zero MDR for all domestic UPI transactions, except some B2B, EMI, overdraft transactions, etc., to promote UPI payments in India. This move has impacted the revenue numbers for all major UPI players and hence, the revenue pool of UPI as a payment mode.

We also expect P2M to overtake P2P transaction numbers in the near future, and this will be supported by the aggressive merchant acquiring strategy of most UPI players.

Income lines for participants



UPI revenue growth (in INR billion)



Source: NPCI

2 NETC

The National Electronic Toll Collection (NETC) system has seen steady growth in the last few years. Recent mandates by the Government of India have put NETC on an exponential growth trajectory. NETC volumes were 64 million, 93 million and 110 million in the months of December 2019, January 2020 and February 2020 respectively. However, owing to the nationwide lockdown, the volumes plunged by 90% to 10 million in April 2020. After economic activity resumed in the country and restrictions on inter-state movement were lifted, the volumes gradually returned to pre COVID-19 levels, and 110 million NETC transactions were recorded in September 2020.⁷



Transactions growing at a CAGR of 123%



580 million+ transactions in FY19–20



27 issuing and 11 acquiring banks



18 million+ tags CAGR of 120%

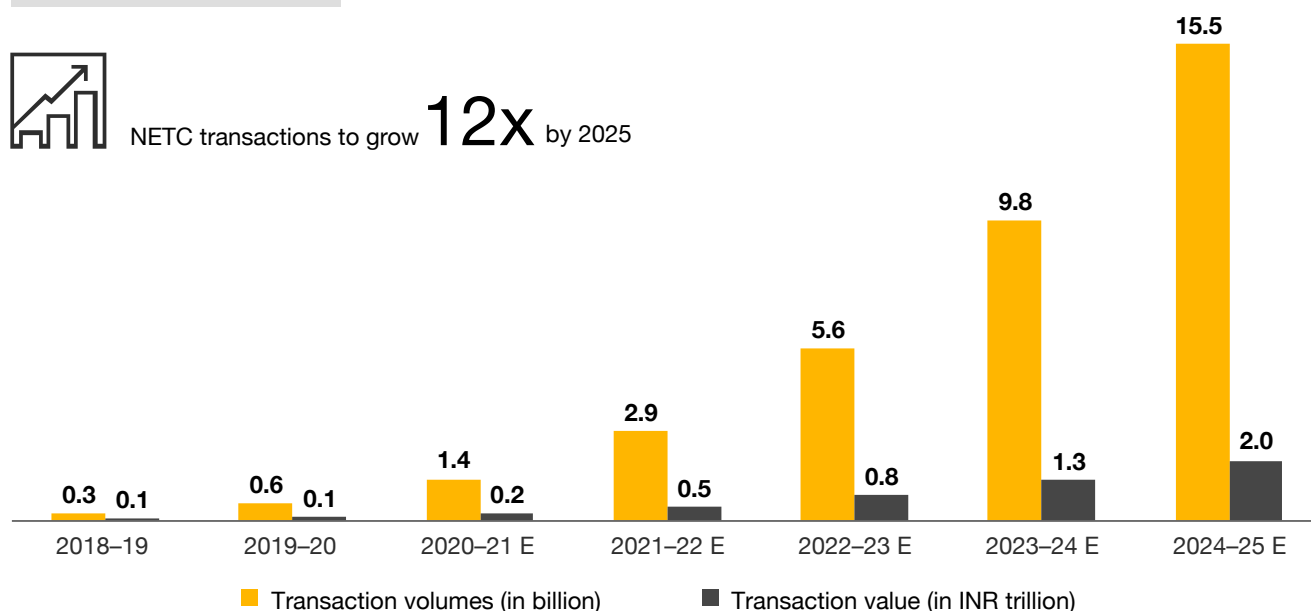
Source: NPCI

Currently, NETC covers 390+ national toll highway plazas and seven state toll plazas. We believe these numbers will grow in the coming years. Further, with the emergence of many new use cases and an extended Government push on usage of FASTAGs at tolls, we expect up to twelve times growth in NETC transaction volumes by 2025.

Projected growth of NETC



NETC transactions to grow **12x** by 2025



Source: PwC analysis of RBI and NPCI data

NETC growth drivers

Government push to promote NETC

FASTag has become mandatory for all vehicles from last year. 18 million FASTags have already been issued and this number is likely to reach up to 25 million by next year.

All vehicle manufacturers and dealers have already associated with FASTag issuers to enable new vehicles to get RFID tags.

All national highway tolls plazas are now FASTag enabled. State highway toll plazas are also rapidly shifting to the FASTag system following the Government mandate.

Various new use cases expected

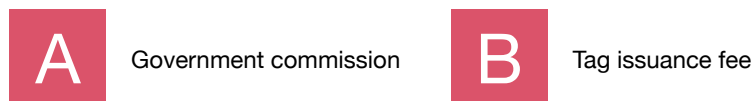
Fuel payments using FASTag at petrol pumps, along with purchase of foods and groceries at shops at the petrol pumps

Various Government or private parking spaces

Collection of police fines

⁷ www.npci.org.in

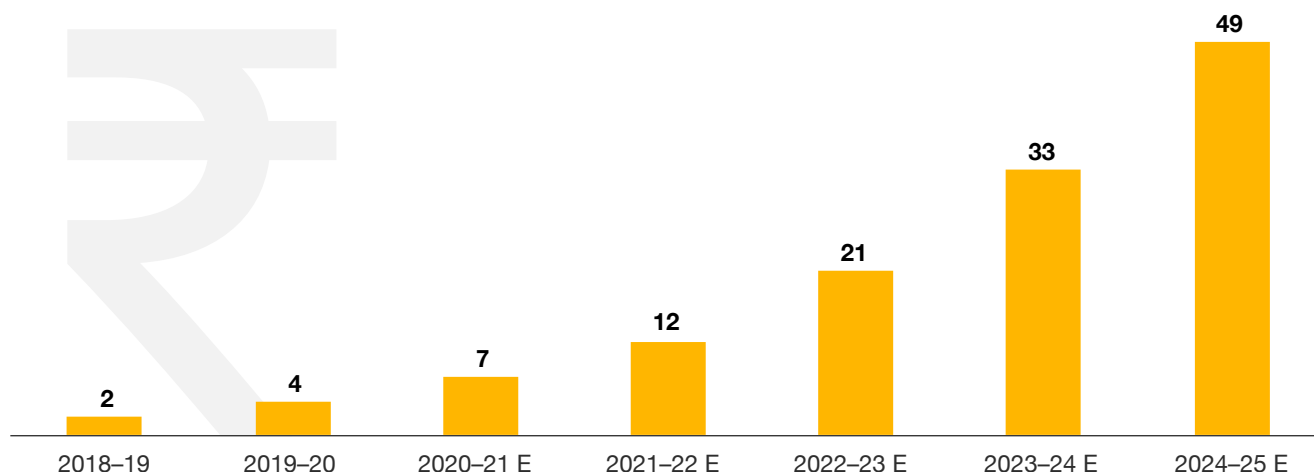
Income lines for participants



- Issuers are focusing on e-commerce as a cost-effective channel for selling FASTags.

With the Government's mandate and inclusion of state toll booths under NETC's purview, this can be a great revenue-generating opportunity for the entire ecosystem.

NETC revenue growth (in INR billion)



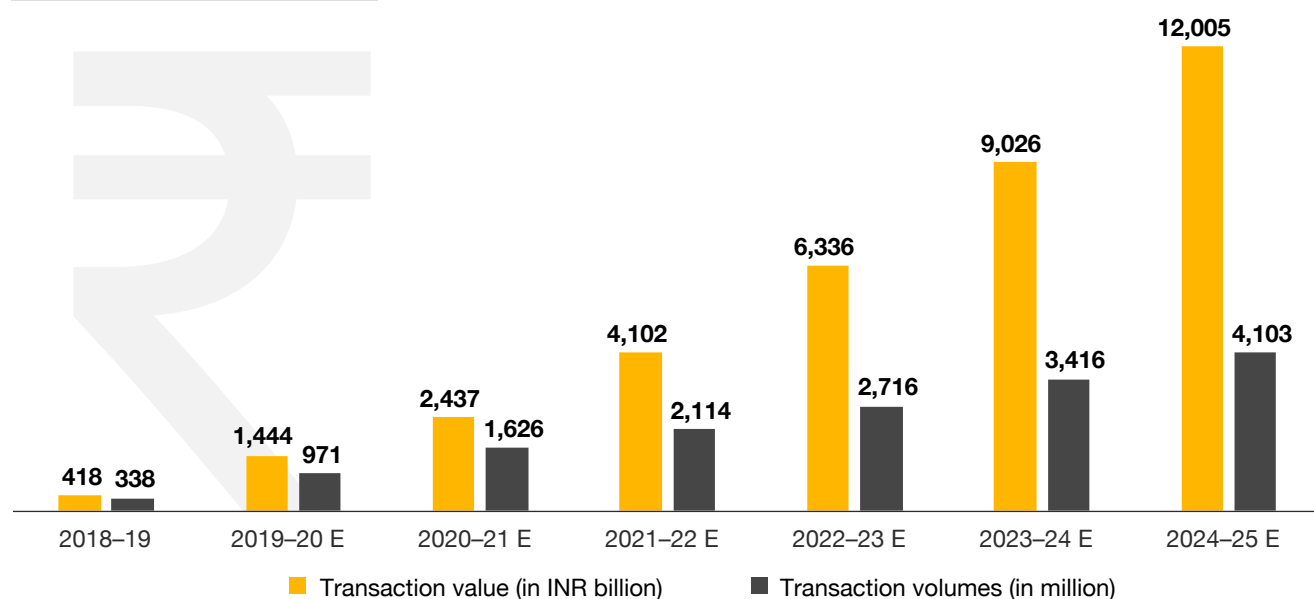
Source: PwC analysis of NPCI data

3 Bharat Bill Pay System (BBPS)

Utility bill payment, which was earlier a distributed market with every player developing and implementing its own standalone system, has started converging.
















Post the COVID-19 pandemic, we've seen a slight decline in the number of payments made through the Bharat Bill Payment Central Unit (BBPCU) in April 2020 – 12.8 million transactions as compared to 15.9 million in March 2019. However, this 20% decline was followed by a growth of 65% until August 2020, which saw 21.2 million BBPS transactions. Continued onboarding of billers under existing as well as new categories is providing an impetus to the growth of BBPS transactions.

Growth in BBPS Transactions



Source: PwC analysis of NPCI and MeitY data

Business categories

Existing categories		New categories	
 1. Electricity	 2. DTH	 1. Life insurance	 2. Health insurance
 3. Postpaid bills	 4. Water	 3. Credit card	 4. Educational institutes
 5. Landline bills	 6. Piped gas	 5. Local taxes	 6. Invoice payments
		 7. Housing societies	 8. Gyms
		 9. FASTag	

Factors contributing to growth of BBPS

Continued onboarding of billers under existing categories

City gas distribution and water are two biller categories which will continue to get onboarded onto BBPS as new geographical areas are brought under gas distribution and the Smart Cities programme is expanded beyond 100 cities.

Expansion into new biller categories

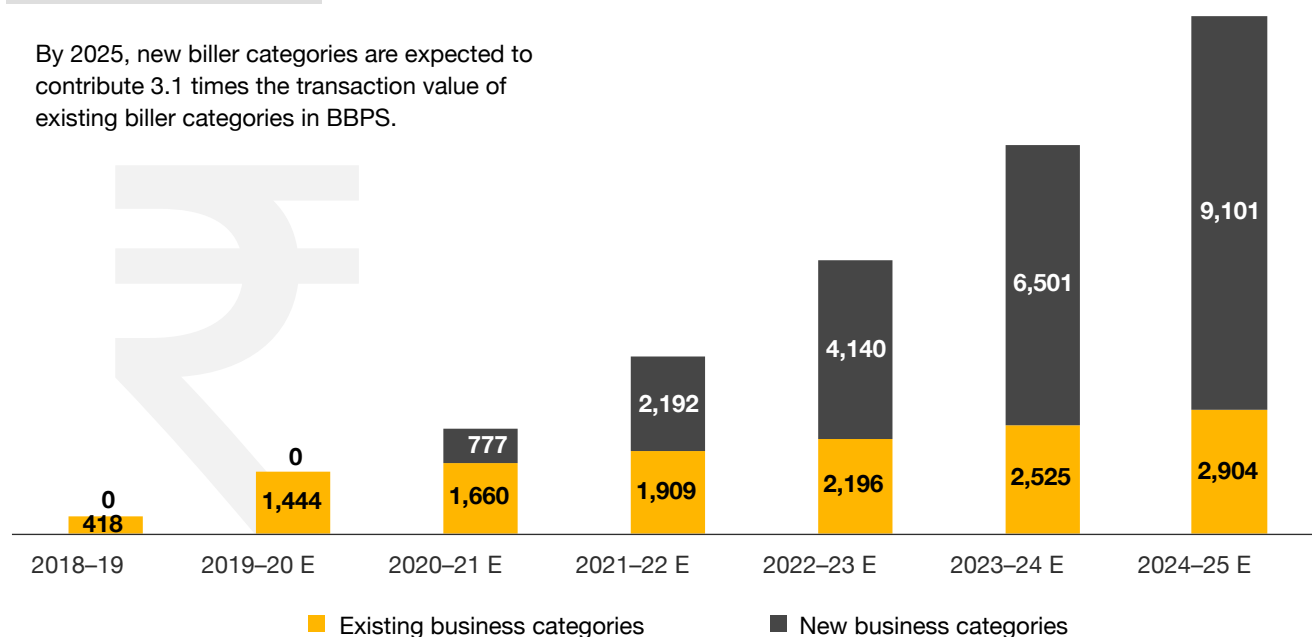
Expansion of BBPS to include new biller categories for recurring bills (except for prepaid recharges) will provide a fillip by bringing additional transaction volumes from segments like insurance, credit cards, local taxes, educational institutions, housing societies and clubs. Consumers are also expected to continue to pay their bills online in the near term.

Integration with banking and mobile applications

Banks and mobile applications are integrating their customer-facing systems to support BBPS transactions. The consumer preference for paying bills online due to the COVID-19 situation is expected to continue.

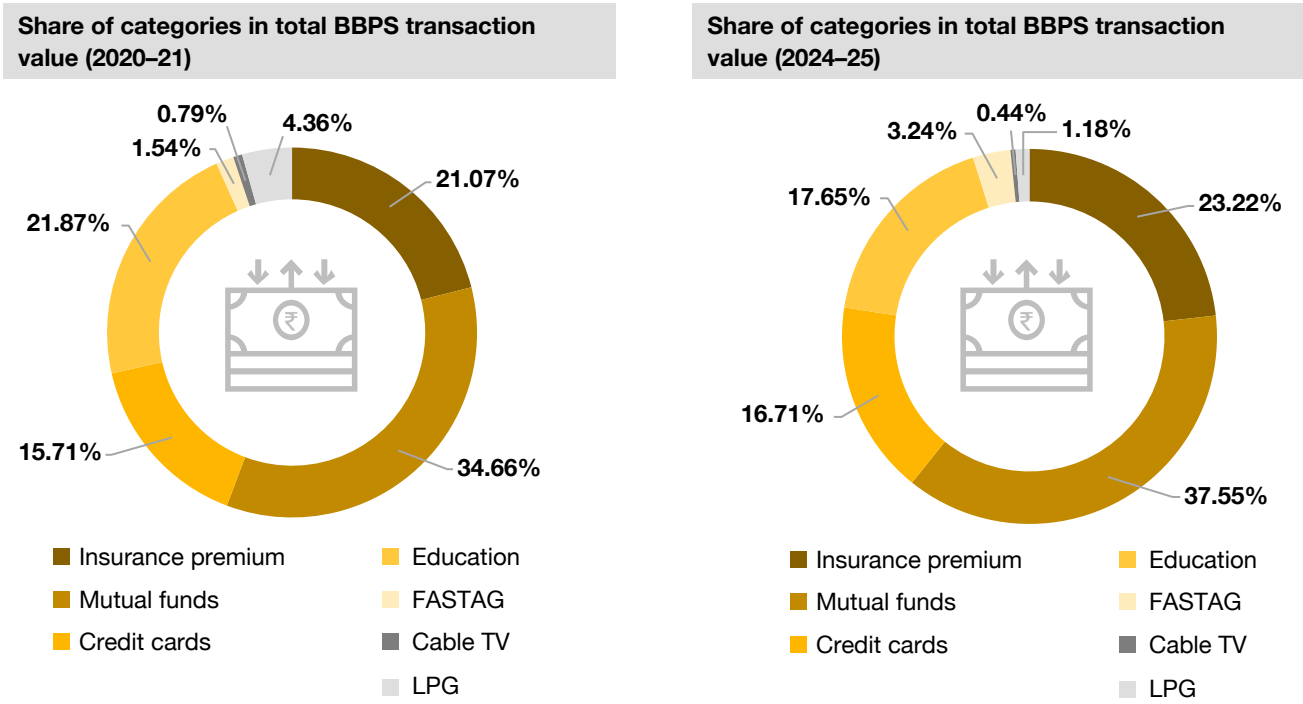
Existing vs new category

By 2025, new biller categories are expected to contribute 3.1 times the transaction value of existing biller categories in BBPS.



Source: PwC analysis of NPCI and MeitY data

Estimated transactions from new biller categories



New biller categories

Credit cards

Banks will be able to provide their customers access to multiple credit card companies rather than relying on the listing provided by the existing service provider they have integrated.

Education

Educational institutes and coaching institutes with a large student base can offer BBPS as a fee payment option.

Insurance

Health and life insurance premiums can be paid at intervals through BBPS. Operating units (OUs) can allow customers to set up standing instructions on available payment channels.

Mutual funds

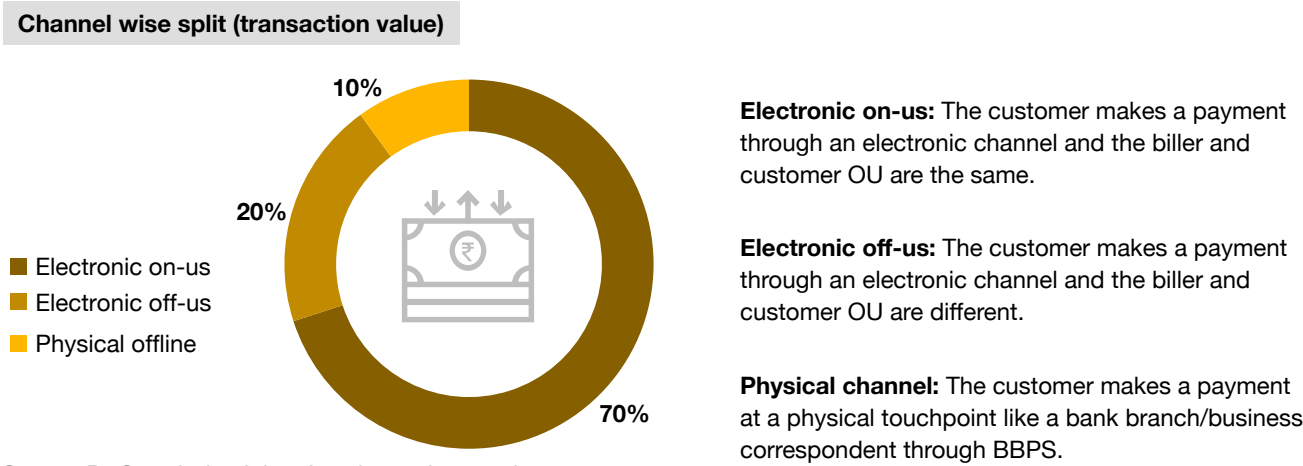
BBPS can be used to receive micro SIPs through the existing business correspondent network and boost savings in unbanked and under-banked areas.

LPG

With increasing penetration of LPG connections and digitisation of the booking process and payments, BBPS will gain sizeable volumes on a recurring basis.

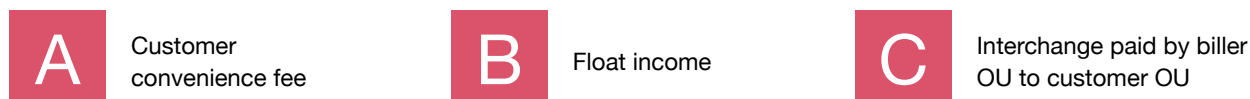
FASTag

With the facility to recharge FASTags through BBPS, customers will have the convenience of making payments through multiple integrated channels.

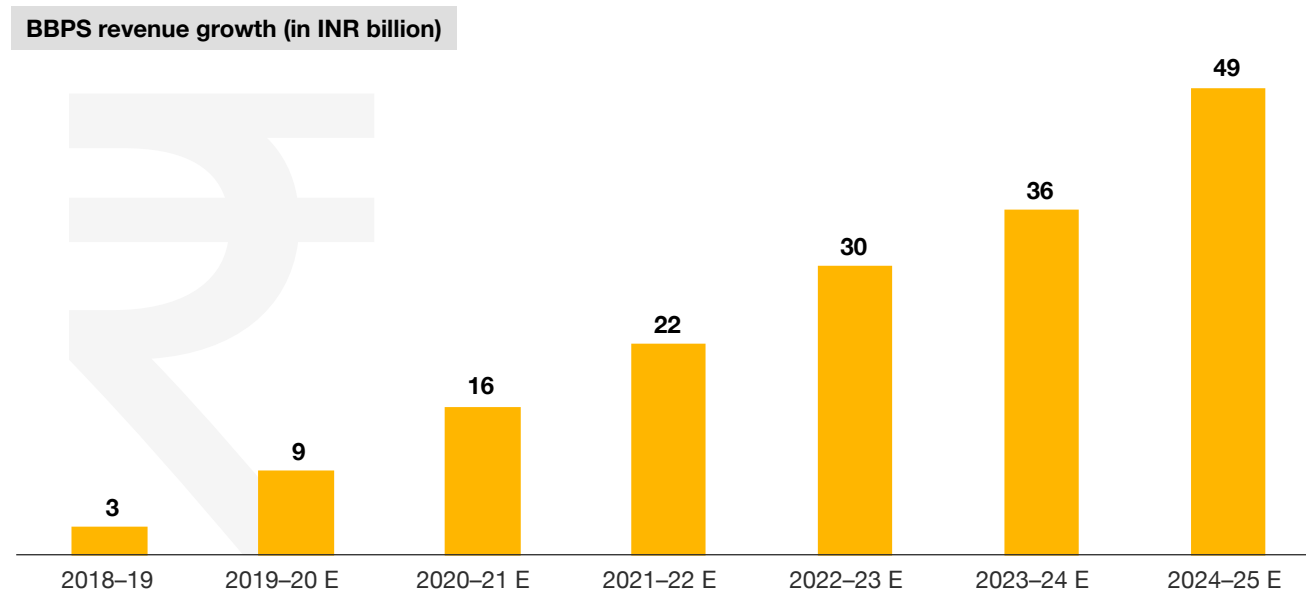


Source: PwC analysis of data from internal research

Income lines for participants



Revenue growth in BBPS



Source: PwC analysis of BBPS data

Until the introduction of BBPS, bill payments was a fragmented market. The centralised platform, along with the integration of multiple payment channels and addition of billers – especially new biller categories like credit cards, insurance, educational institutes and housing societies – is expected to provide a fillip to BBPS. Expansion and integration of physical customer touchpoints with BBPS in semi-urban and rural areas will further boost transaction volumes on the platform.

4 Cross-border remittances

Cross border remittances have grown at a CAGR of 8% since 2016. This growth indicates greater movement of the semi-skilled and unskilled workforce between countries.⁸

India is the biggest beneficiary of cross-border inward remittance from the Middle East. At the same time, India sees outward remittance largely towards neighbouring countries such as Nepal and Bangladesh. However, with the COVID-19 outbreak, in 2020, global inward remittances are expected to decline by about 20% and outward remittances by 25% due to the economic crisis resulting from the prolonged shutdown across nations and restricted movement of goods and people across borders.⁹

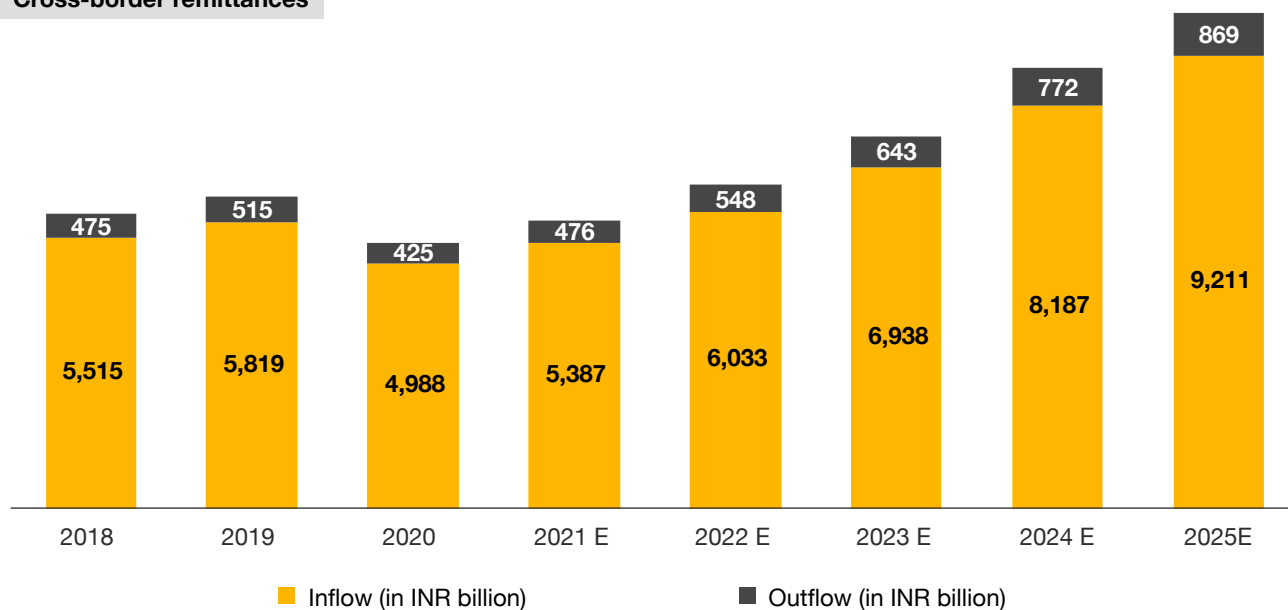
As global economies start easing lockdown restrictions and resume economic activities, cross-border migration of people will gradually increase, eventually leading to steady recovery of the volume of global remittances. The total value of remittance is expected to witness a 1.7 times increase from INR 5,990 billion in 2018 to INR 10,080 billion in 2025.¹⁰

⁸ <https://www.worldbank.org/en/topic/migrationremittancesdiasporaissues/brief/migration-remittances-data>

⁹ <https://www.worldbank.org/en/news/press-release/2020/04/22/world-bank-predicts-sharpest-decline-of-remittances-in-recent-history>

¹⁰ <https://www.worldbank.org/en/topic/migrationremittancesdiasporaissues/brief/migration-remittances-data>

Cross-border remittances



Source: PwC analysis of World Bank data

Factors contributing to growth in cross-border remittances



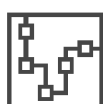
Migration of Indian semi-skilled and unskilled workforce to the Middle East and migration of similar workforce from neighbouring countries into India will continue to be the major factor fuelling growth of cross-border remittance in India.



Availability of digital channels along with enabling regulations and newer technologies for faster payments will provide necessary transaction ease to remitters. UPI, which is currently being used for inward remittances, is being explored for outward remittances too. This is will reduce turnaround times and help increase customer acceptance, which will catalyse growth of cross-border remittances.

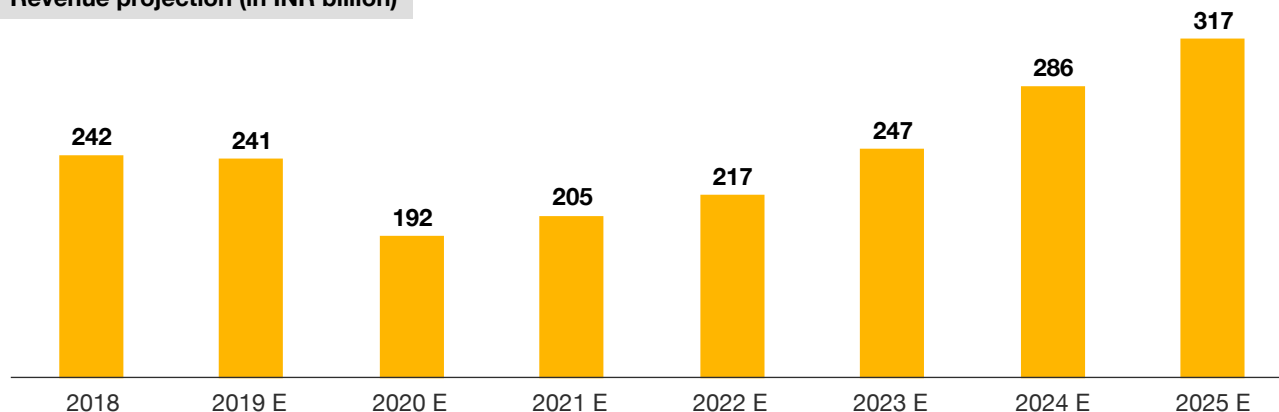


A vast network of physical touchpoints, nurtured by existing and emerging players through global partnerships, will provide easy access to remitters and beneficiaries. High availability and reliability of the network will encourage remitters and beneficiaries to use formal remittance channels.



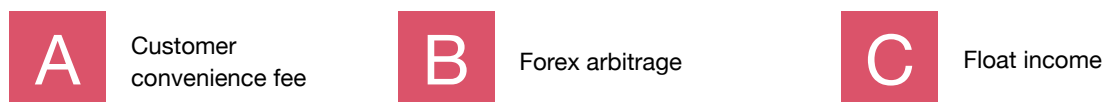
Payment companies across the world are using blockchain technology (DLT infrastructure) to enable cross-border transactions and exchange payment messages by leveraging the traditional fiat currency or digital currency (crypto and CBDC). In this case, banks act as participating banks, and settlement and clearing take place between these banks using the distributed ledger. This helps in ensuring transparency.

Revenue projection (in INR billion)



Source: PwC analysis of World Bank data

Revenue sources



Owing to the slowdown caused by the COVID 19 pandemic, we will observe a sharp decline in the revenue opportunities for payment companies due to the reduction in customer convenience fees and lower float income.

Faster payment rails, introduction of blockchain and improved technology will lower the cost of remittance and this reduction will be passed on to customers.

Leveraging the business correspondent network for last-mile service delivery will be critical for deriving maximum benefits from growing cross-border remittances. This will open a revenue stream for a business correspondent-based banking model which is trying to attain profitability. The business correspondent model can be leveraged primarily in semi-urban and rural areas of the country for 'cash-out' services for beneficiaries.

5 Cards

Debit and credit cards: Key figures

No. of debit cards as on July '20	No. of credit cards as on July '20	Value of credit card transactions is growing at a CAGR of 22%	Value of debit card transactions is growing at a CAGR of 25%
852 million	57 Million		

PoS credit and debit card transactions have grown at a CAGR of 19% and 21% respectively in the last four years. India has been adding approximately 10 million credit cards every year since 2016. On the other hand, debit card growth is stagnant since the penetration of debit cards is already on the higher side, although usage is still low.¹¹

With a Government push and increasing digital penetration, cash transactions will move to cards and other payment modes, and we expect card transactions to grow by more than 20% in the next five years. However, the negative impact of the COVID-19 pandemic on many sectors of the Indian economy such as auto, electronic and consumer durables, hotels and restaurants, physical retail stores, e-commerce (non-essential), and tourism and hospitality, along with the nationwide lockdown, has curtailed growth of this payment mode.

While there are a few areas (e.g. online medical health services and pharmacies, grocery stores, mobile recharge and bill payments) where digital payments will continue to rise, overall, there was a sharp decline of about 50% in the volumes of both credit and debit card transactions in April 2020. Since then, consumer spending has started to increase and we believe it will reach pre COVID-19 levels by the end of this financial year. However, an overall decline of 15% and 20% in debit and credit card transaction volumes respectively can be expected in FY 2020–21.

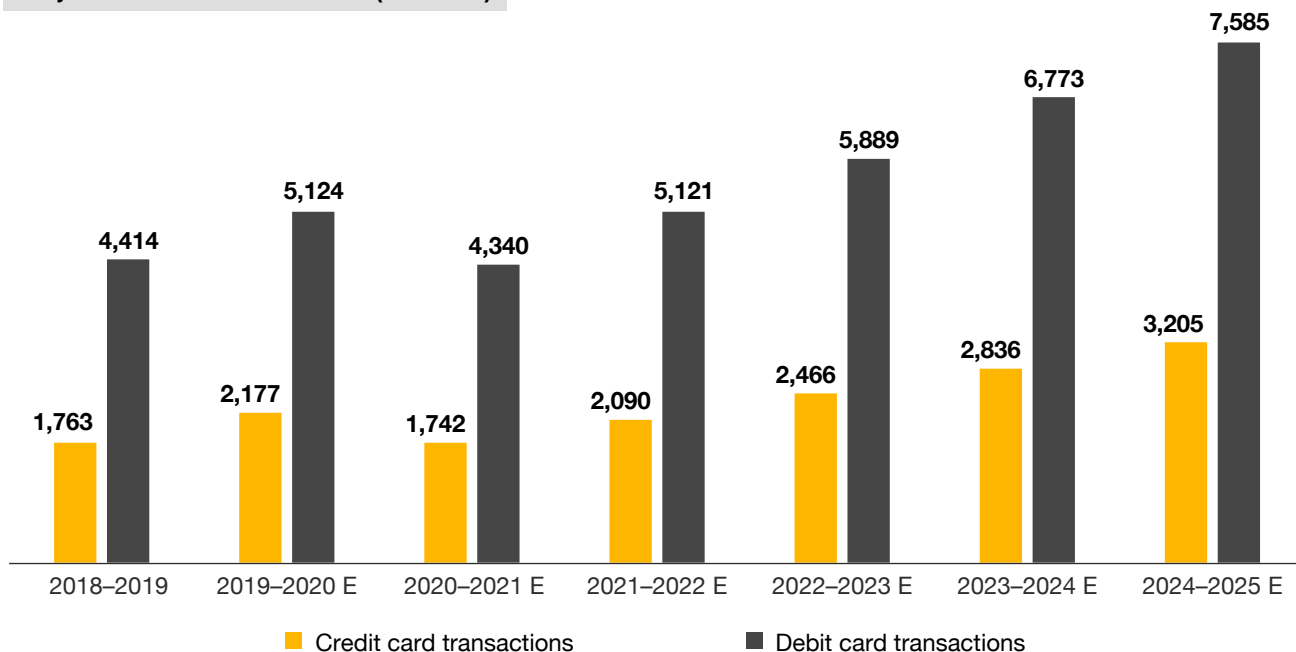
Considering the continuous push from the Government for adoption of digital payment instruments, we will eventually see an increase in the usage of both debit and credit cards in the coming years. It is also expected that the current pandemic will bring about a change in customer behaviour and lead to wider adoption of card payments. A transaction pattern where customers prefer to use credit cards for high-value purchases and debit cards for day-to-day purchases may emerge.

Adoption of dual-use cards to support NCMC will further increase usage of cards and convert a large chunk of cash transactions in the public transport sector (state road transport corporations, city bus services, mass transit system, etc.) to the digital mode. Tokenisation of cards, which is currently at a nascent stage, to support mobile-based transactions will further boost low-ticket transactions at physical stores.

As per RBI data, the number of debit cards decreased by around 96 million from March 2018 to March 2019. This was due to the RBI's guidelines to mandatorily change cards from magstripe to EMV chip by March 2019. Since the activity was still going on, all magstripe cards were deactivated, and these numbers will start increasing once the replacement is completed.

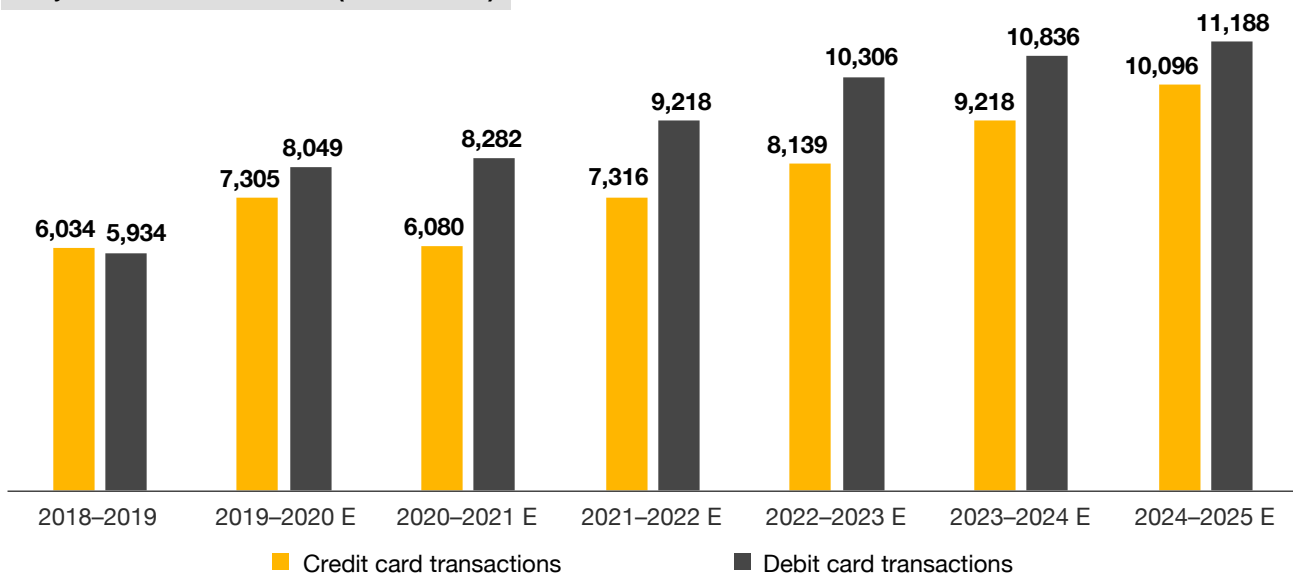
¹¹ <https://www.rbi.org.in/scripts/AnnualReportPublications.aspx?Id=1293#:~:text=Source%3A%20RBI,-IX.,%E2%82%B98.0%20lakh%20crore%2C%20respectively>.

Projected transaction volumes (in million)



Source: PwC analysis of RBI and NPCI data

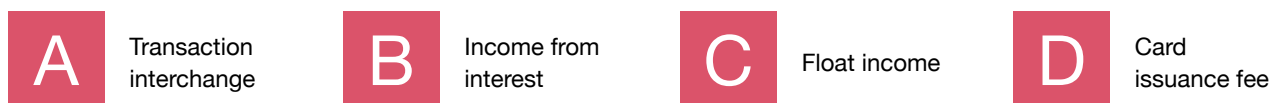
Projected transaction value (in INR billion)



Source: PwC analysis of RBI and NPCI data

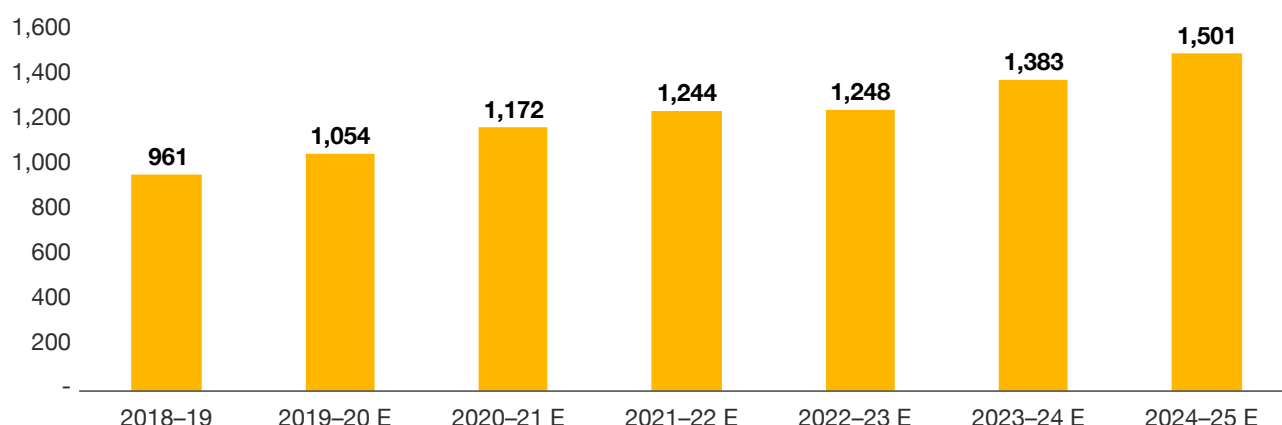
Cards revenue pie

The following are the major card revenue sources. Interest and transaction interchange account for more than 60% of the revenue from cards for an issuer.



The recent government mandate of zero MDR on RuPay transactions will push card transaction usage and adoption in India. However, it will impact the overall revenue stream of players as MDR is one of the major sources of revenue for them.

Revenue projection (in INR billion)



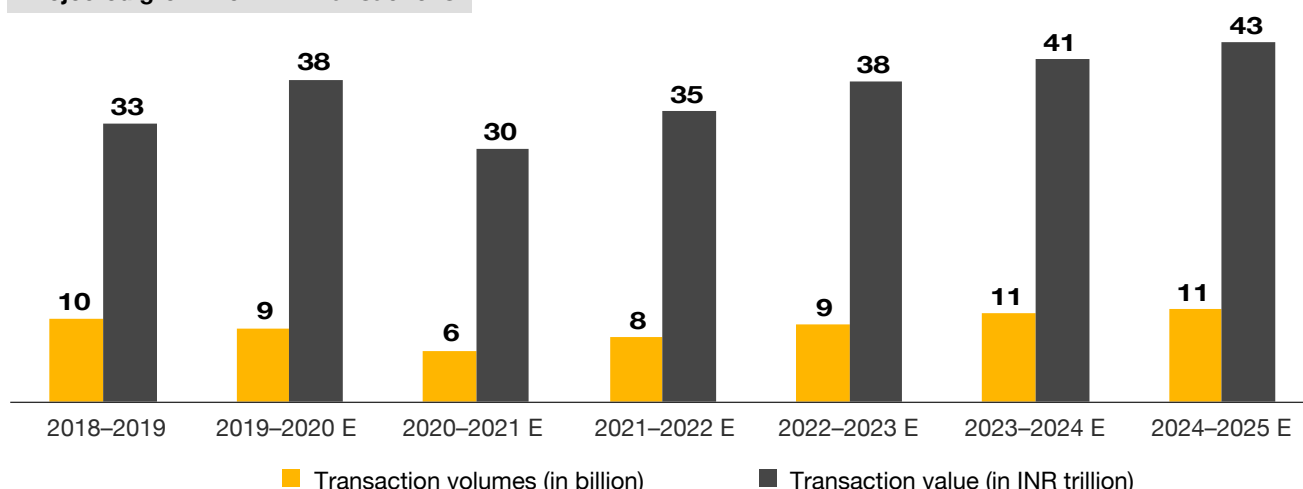
Source: PwC analysis of RBI and NPCI data

ATM transactions

Cash-based transactions continue to be the preferred mode of payment in India, despite the growth trajectory of digital payments. As of February 2020, there were 2.34 lakh ATMs in India, out of which 47% were offsite ATMs.¹²

ATM transactions in India have been growing at a CAGR of 9% in the last 3–4 years. The COVID-19 crisis has significantly impacted the economy and the resultant lower disposable incomes and reduced consumer spending are expected to lower transaction volumes in 2020–21. ATM transactions are expected to rebound with gradual economic recovery in 2021–22 and continue to grow thereafter.¹³

Projected growth of ATM transactions



Source: PwC analysis of RBI data

Apart from regular financial transactions, there were more than one billion non-financial transactions in the last financial year.¹⁴

Revenue from ATM transactions

There are mainly three types of revenue sources for ATM transactions:

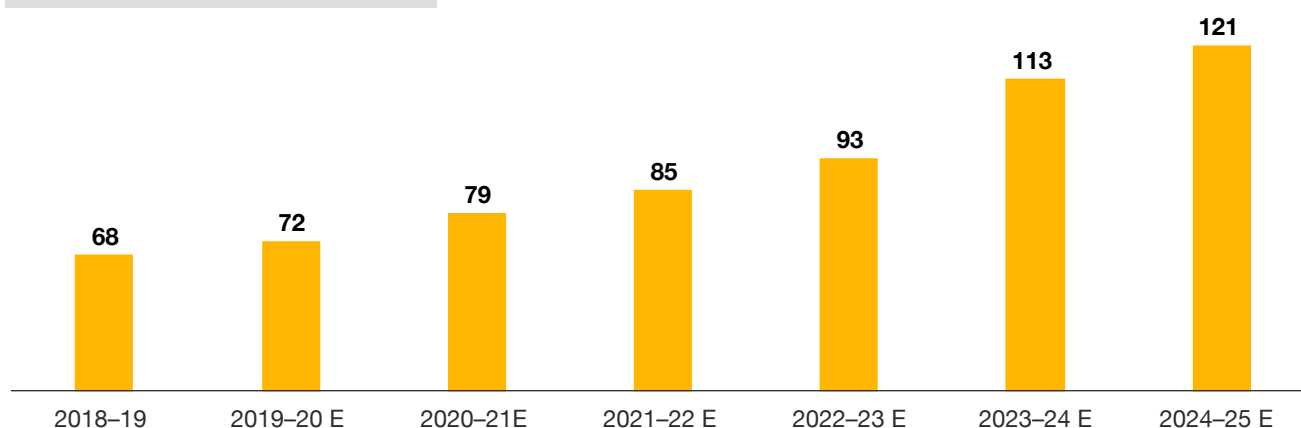


¹² <https://m.rbi.org.in/Scripts/ATMView.aspx?atmid=107>

¹³ https://www.rbi.org.in/scripts/BS_ViewBulletin.aspx?Id=18867

¹⁴ https://www.rbi.org.in/scripts/BS_ViewBulletin.aspx?Id=18867

ATM revenue growth (in INR billion)



Source: PwC analysis of RBI data

Income from interchange fee earned from financial transaction at ATMs is the largest contributor to revenue in the ATM business. A dip in transactions will impact interchange income from ATMs the most.

Merchant acquiring beyond transaction processing

As per RBI data, as of July 2020, there were a total of 5.08 million point of sale (PoS) merchants in India – a 20% growth in comparison to July 2019.¹⁵ The entry of numerous non-traditional acquirers has put the merchant acquiring business on a growth trajectory. This was difficult earlier as only banks were operating in the acquisition space. Post demonetisation, there was a sudden increase in the number of card payment acceptance points which mainly contributed towards small-ticket transactions.

Due to the impact of the COVID-19 crisis, PoS merchant acquiring growth is likely to be low. We expect the growth to either remain at the same level or increase by only 1–2% in FY 20–21.

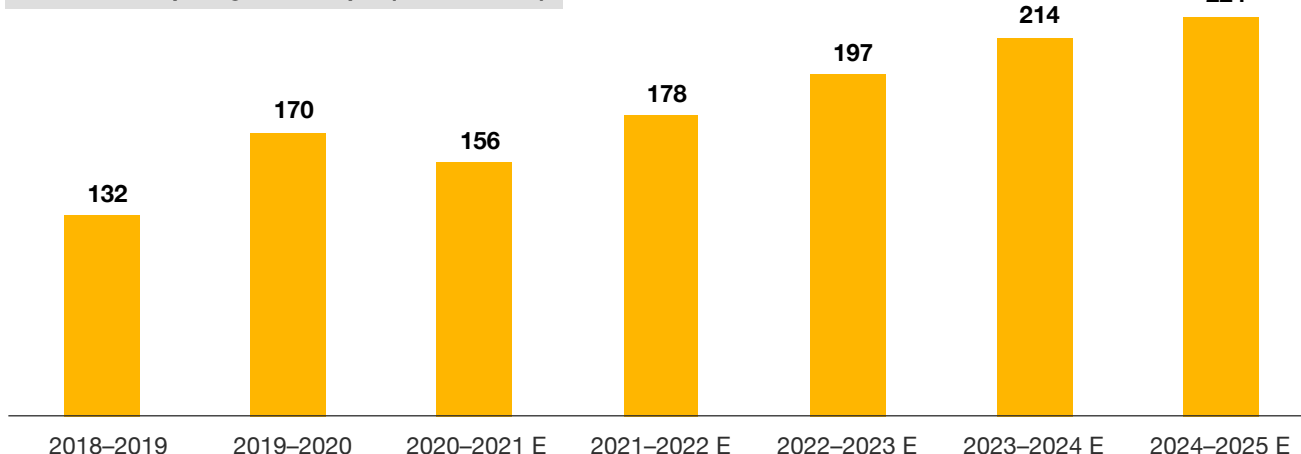
Merchant acquiring has always been a low-margin business due to many internal and external factors. Acquirers are working towards introducing new revenue streams in the business. Value-added services (VAS) like billing solutions, GST solutions, expense-management apps and integrated payment solutions are helping acquirers to increase their revenue.

Revenue pie for the merchant acquiring space

There are mainly three types of revenue sources for the merchant acquiring business:



Merchant acquiring revenue pie (in INR billion)

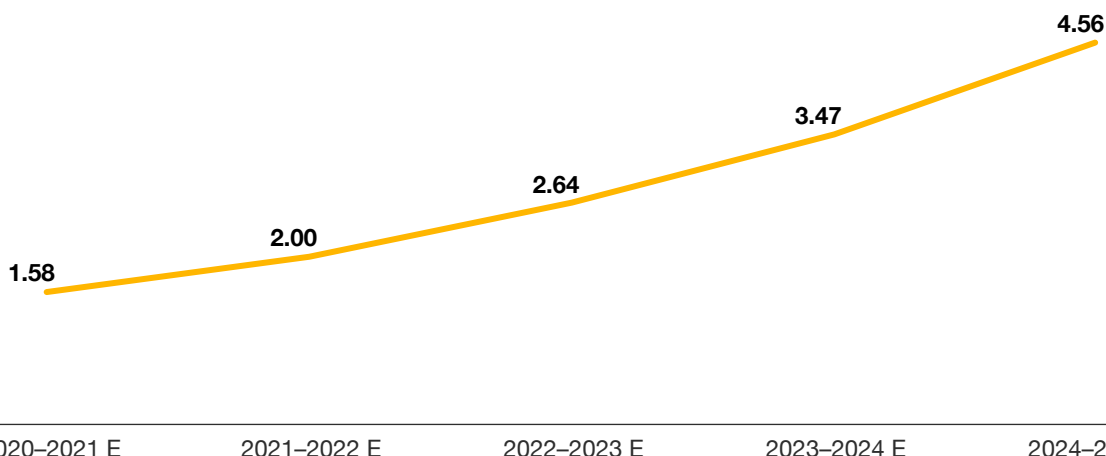


Source: PwC analysis of NPCI data

¹⁵ <https://www.rbi.org.in/Scripts/ATMView.aspx?atmid=113>

What will VAS add to the overall and individual revenue pie?

VAS revenue opportunity (in INR billion)



Additional revenue from merchant cash advances/lending

Merchant cash advances (MCAs) are the credit line provided by acquirers against the history/projection of card transactions over a specific course of term. This is not a loan but rather a credit period that helps merchants in managing their cash flows. Acquirers charge some interest against this credit line depending on how much merchants use and when.

Most acquirers have started providing this facility to merchants and are earning a good amount of alternative revenue, apart from income from MDR.

Huge competition, coupled with Government and regulatory guidelines, will continue to put pressure on MDR and revenue from core commoditised businesses. The COVID-19 crisis has also impacted acquirers' earnings. The Government is focusing on digital transformation of small and medium-sized enterprises (SMEs). Providing VAS to SMEs seems to be the next logical step for merchant acquirers and third-party service providers to build a sustainable business model. Adding VAS to existing acquiring solutions will benefit the complete ecosystem. Independent software vendors (ISVs) can think beyond their conventional business ideas and integrate their products with payment propositions. Doing so will open up a new revenue source for these players. We firmly believe that there will be a shift from physical PoS outlets to online PoS as businesses dealing with groceries, essentials, pharmaceutical products, etc., will move online and banks will explore options like soft PoS to enable smartphones to be used as PoS devices, thereby eliminating the need to invest in a PoS device.

Some sectors like travel and hospitality will impact the overall volume of PoS transactions for some time. However, we believe that overall PoS transaction volumes will start increasing in the next one or two years.

6 AePs

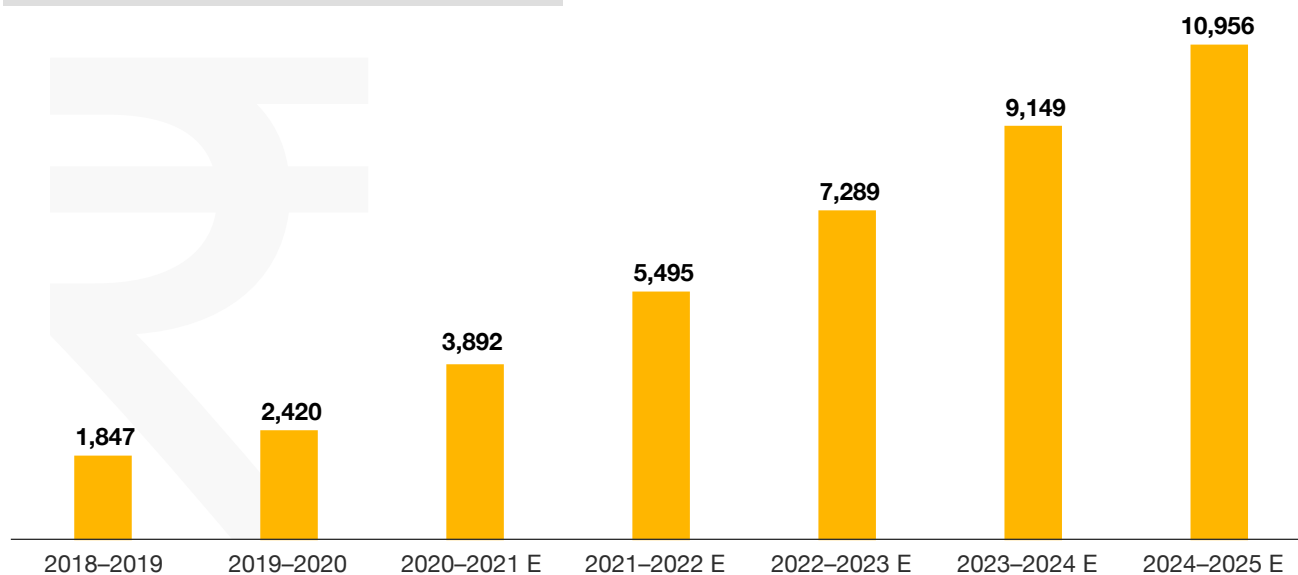
AePS is a bank-led model that uses Aadhar authentication to allow online interoperable transactions at PoS (micro ATMs) terminals through business correspondents of any bank. AePS was launched to facilitate banking services in unbanked/rural areas and disburse Central and state government entitlements under schemes such as the National Rural Employment Guarantee Act (NREGA), social security pension and pension for disabled or senior citizens, using Aadhaar authentication.¹⁶

Since its launch in 2016, AePS has grown at a CAGR of 137%. It recorded over 400 million transactions in April and May 2020, owing to direct disbursement under the stimulus packages announced by the Government during the COVID-19 crisis.

AePS has gained traction in the market and we believe its adoption would increase in the coming years. The figure below shows the growth of AePS in terms of transaction volume and value over the years, along with expected future growth.

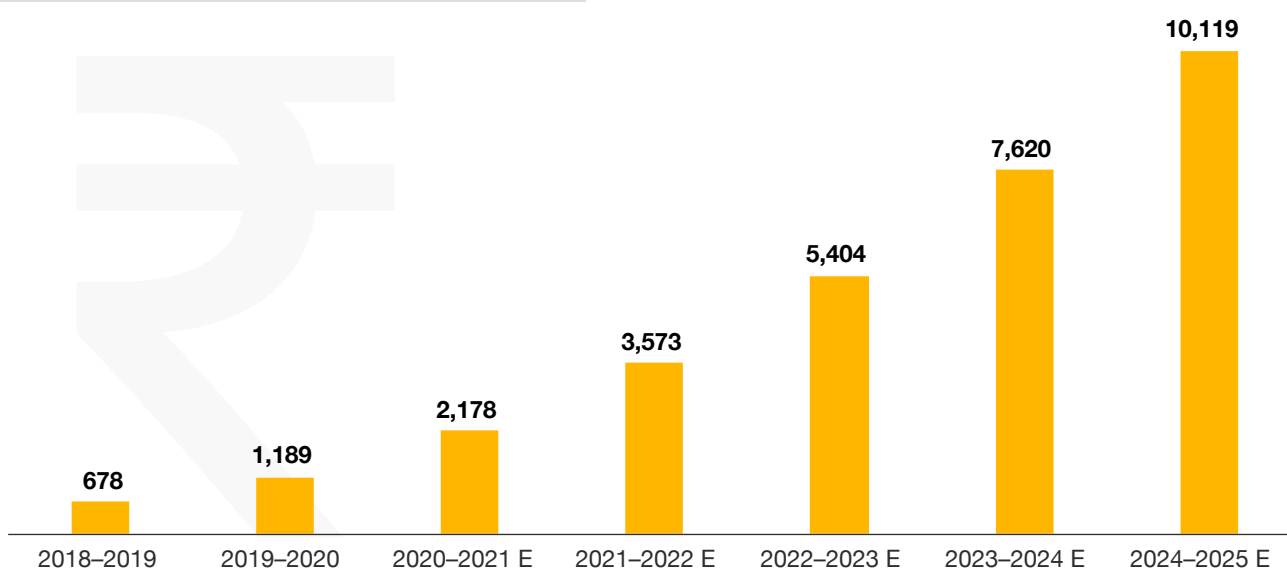
¹⁶ <http://cashlessindia.gov.in/aeaps.html>

Growth in AePS transaction volume (in million)

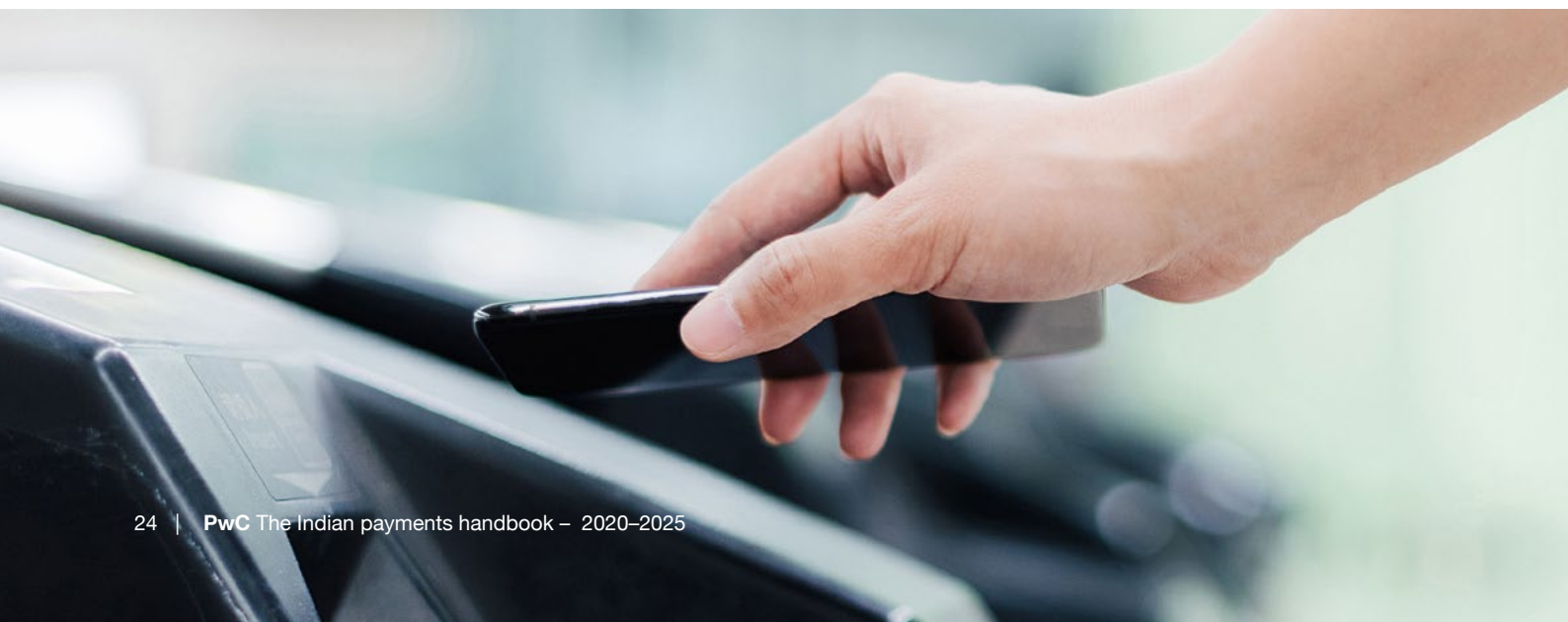


Source: PwC analysis of NPCI data

Growth in AePS transaction value (in billion)



Source: PwC analysis of NPCI data

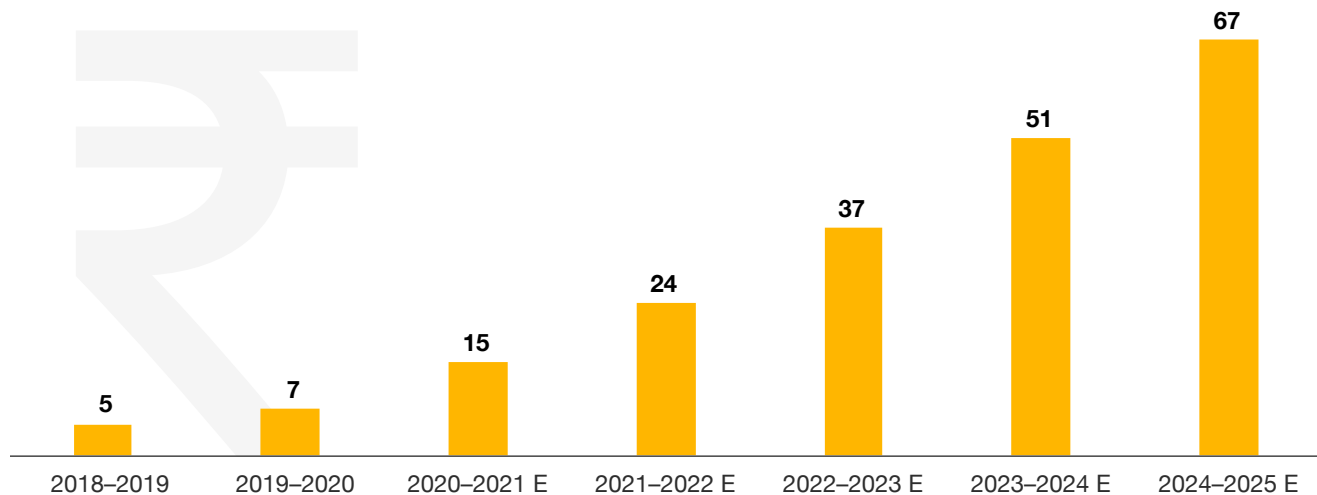


AePS revenue

The revenue sources for AePS participants are as follows:



Growth in AePS revenue (in billion)



Source: PwC analysis of NPCI data

AePS was launched to drive financial inclusion in the country and it has been a game changer for the Government in disbursements.

With the Government looking to promote Aadhar-based payment, the number of AePS-based transactions has increased significantly over the years.

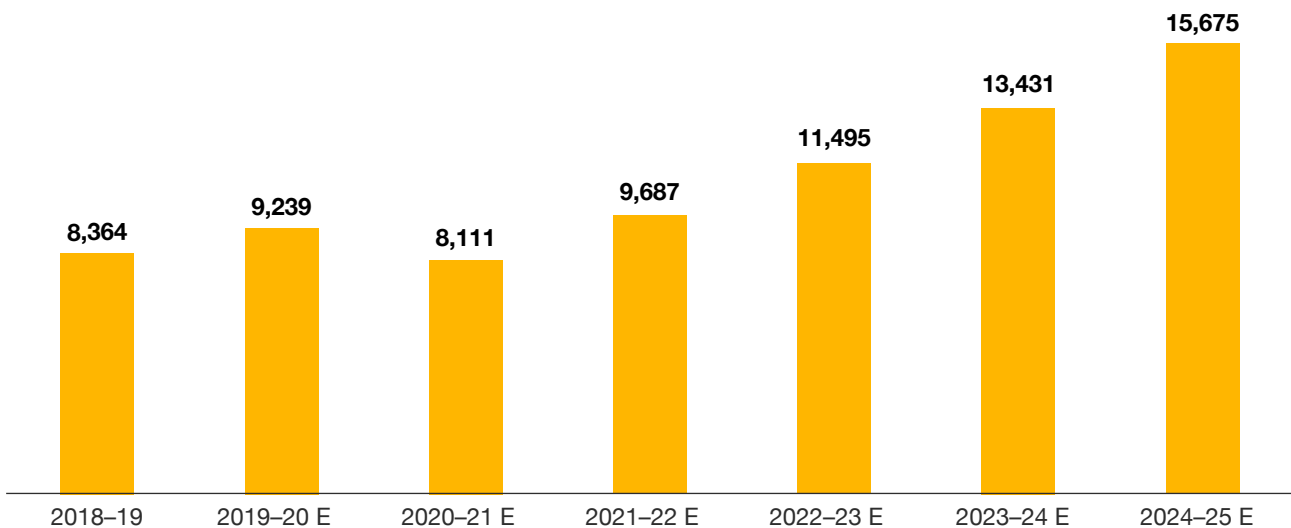
The BHIM-Aadhaar digital payment tool can be a cost-effective method for merchants who don't want to invest in building PoS infrastructure. This can help acquirers who are unable to onboard merchants on physical PoS earn additional MDR revenue. Additionally, it doesn't require customers to bring a physical card to the location while making a payment, which further eliminates the need for them to remember any PIN and creates a frictionless experience.

7 Prepaid payment instruments

Prepaid payment instruments (PPIs) have been prevalent in the market since 2002. However, use cases of PPIs have remained limited to gift cards, meal reimbursements, foreign exchange cards and reloadable cards for general usage such as paying merchants. PPIs witnessed a surge in usage after app-based mobile wallets became operational. Mobile wallets made payment more convenient and demonetisation led to users accepting PPIs easily. A few years since their introduction, mobile wallets are now being used for bill payments and money transfer, further enhancing the usage of PPIs.

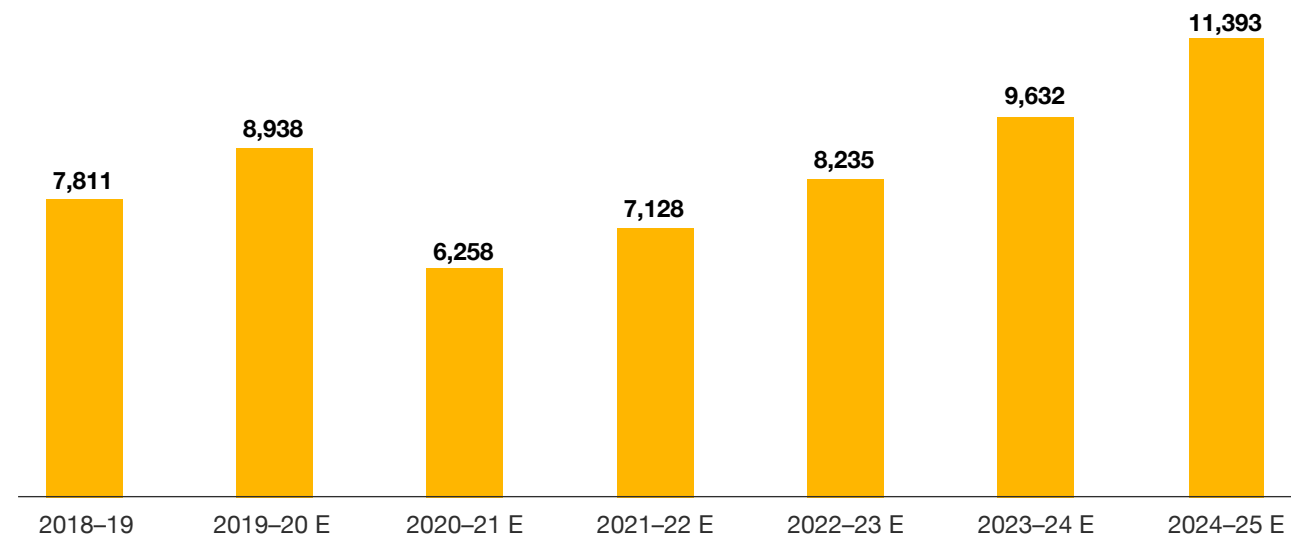
Forex cards are gradually becoming a preferred PPI among outbound travellers.

Growth in transaction volume (in million)



Source: PwC analysis of RBI data

Growth in transaction value (in INR billion)



Source: PwC analysis of RBI data

The value of transactions through PPIs is expected to reach approximately INR 11,000 billion by 2025, recording a growth of 1.3 times over 2019.¹⁷

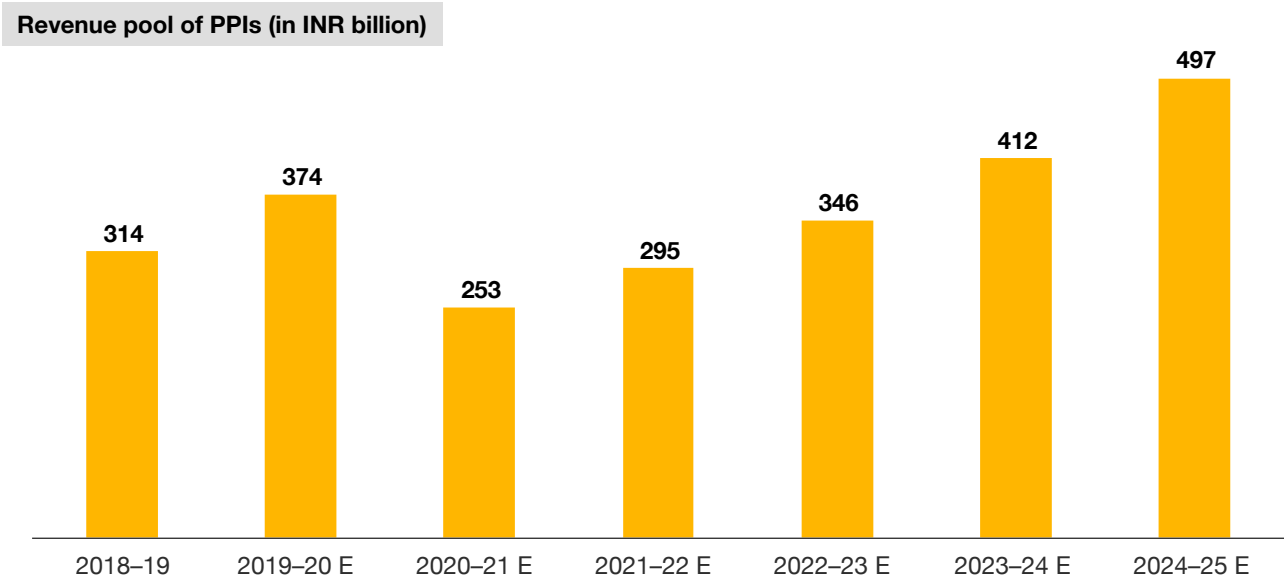
Gift cards are the biggest category under PPIs, capturing about 70% of the total market and having an exceptional year-on-year (YoY) growth rate of approximately 86% until 2018 in terms of both transactional volumes and value. However, the COVID-19 crisis is expected to impact the gift cards market and cause a slowdown.

¹⁷ <https://www.alliedmarketresearch.com/gift-cards-market>

As COVID-19 impacted incomes worldwide, households focused on conserving cash rather than spending it. This resulted in low demand for gift cards and led a decline of around 30–35% can be seen in the global market size.¹⁸

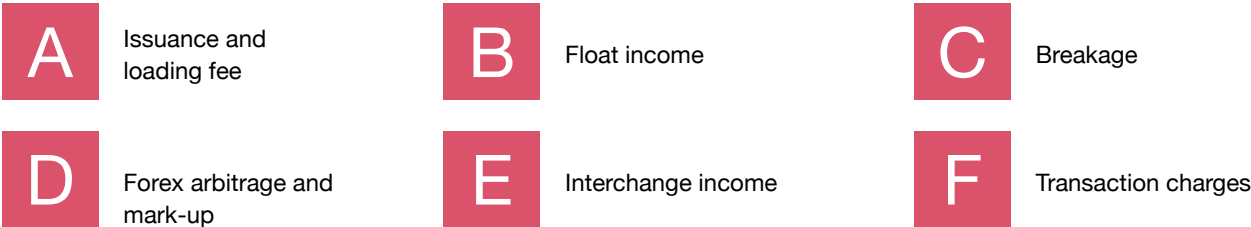
The hospitality and tourism sectors have also been impacted adversely by the pandemic, leading to a huge reduction in usage of travel cards. A gradual resurgence in business travel will lead to limited recovery in the demand for travel cards.

Wallets will see increased traction for P2P transfers, bill payment and P2M payment for essential services, owing to the lockdown and aversion to exchanging cash.¹⁹ However, some wallet players have increased their handling fees for merchants and consumers, leading to merchants not accepting such wallets for transactions. PPIs are gradually emerging as one of the most preferred payment instruments in the country. The demand for PPIs is largely driven by corporates for corporate gifting, reimbursements, forex requirements for corporate travellers, etc. Multi-wallet prepaid instruments for fuel reimbursements, medical expenses, telephone expenses, incentives, etc., are generating demand from corporates.



Source: PwC analysis of RBI data

The revenue sources from PPIs are as follows:



The PPI landscape is witnessing the entry of a large number of PPI processors. Innovative solutions are being developed to meet corporate requirements, resulting in a shift towards transactions done using PPIs.

Meal cards have emerged as another untapped area as service providers look to replace paper vouchers with digital products. Oil marketing companies can actively support issuance of fleet cards for large transport operators.

As people gain confidence in digital transactions, more travellers will continue to opt for forex cards that are now being offered with additional benefits like discounts and reduced mark-up.

Recent RBI directions introducing a new category of semi-closed PPIs will provide a lifeline to wallet providers who were finding it difficult to complete the KYC of existing wallet users. This will also provide an impetus to low-ticket digital transactions through prepaid instruments.

¹⁸ PwC analysis of RBI and NPCI data

¹⁹ <https://www.pwc.in/consulting/financial-services/fintech/dp/impact-of-the-covid-19-outbreak-on-digital-payments.html>



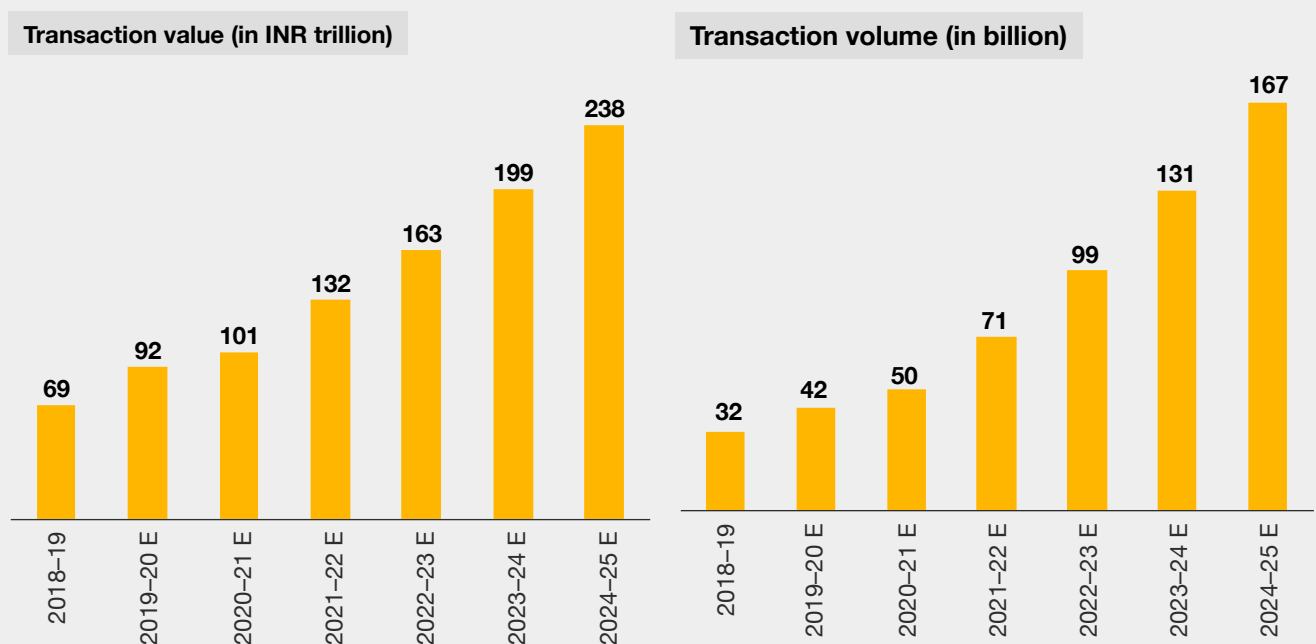
How will the market shape up?

Over the last four years, the digital payment market in the country has grown at a CAGR of 23% in volume and 21% in value.²⁰

Recent steps taken by the Government and the RBI, and the rising number of FinTechs and their collaboration with banks for rolling out innovative and consumer-friendly products will continue to boost the growth of digital transactions in the country.

By 2025, it is estimated that the volume and value of digital transactions in India will reach INR 167 billion and INR 238 trillion respectively.²¹

Value and volume of digital transactions in India

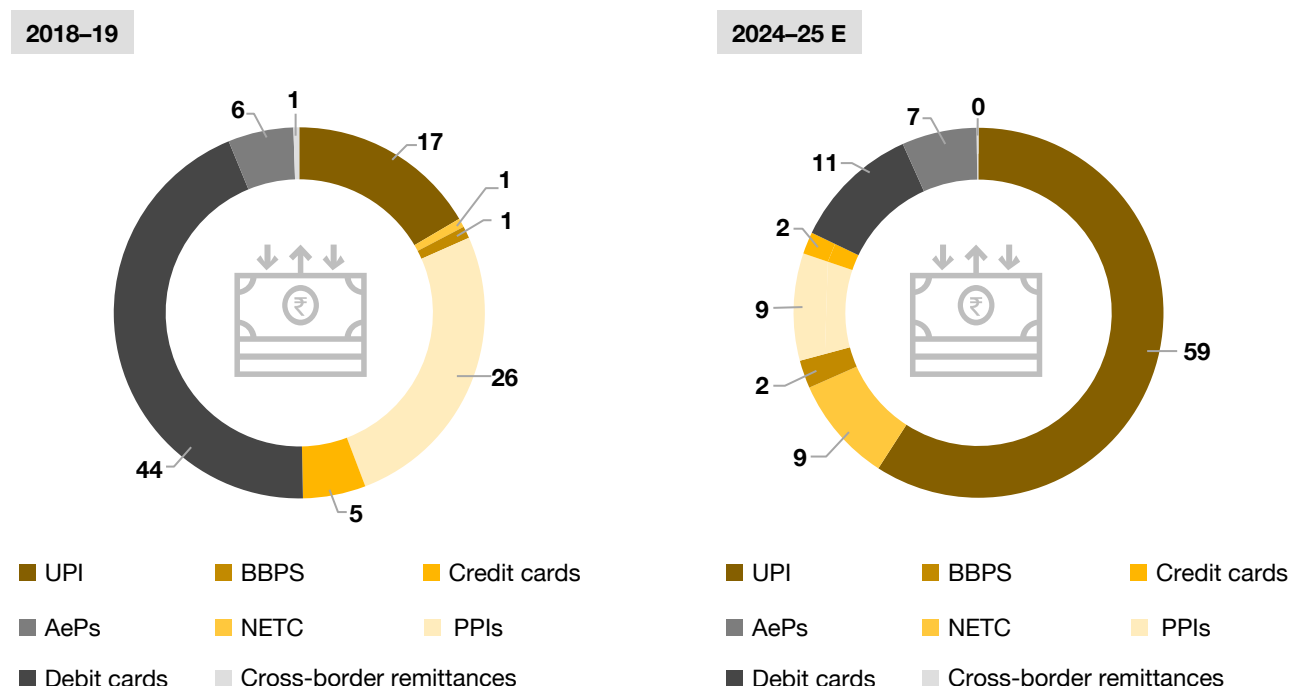


Source: PwC analysis of RBI data

²⁰ PwC analysis of RBI and NPCI data

²¹ Ibid.

Percentage share of digital payment instruments in terms of volume



Source: PwC analysis of RBI data

It is expected that over the next few years, UPI will emerge as the most preferred mode of transaction among Indians. Use cases like cash withdrawal and recurring transactions on UPI will play a catalytic role in the growth of UPI transactions in the country. We expect UPI to have the maximum share of digital transactions by 2025. UPI transactions will increase at neighbourhood brick-and-mortar stores with low-transaction ticket sizes.

The emergence of UPI will directly impact the growth of PPIs and both debit and credit cards. With the introduction of card tokenisation and NCMC, cards will continue to remain relevant in the Indian payment ecosystem. Post COVID-19, it is expected that customers will shift towards using debit cards for regular payments and credit cards for high-ticket purchases. Customers will also increasingly opt for contactless transactions and the recent RBI guidelines to allow contactless transaction (supported by a PIN) for transactions above INR 10,000 are a step in the right direction. Over the next few years, form factors will undergo a change in certain pockets of the country, mainly metro and urban centres. Mobility- and wearable payment devices supported by card tokenisation will be adopted faster in these centres.

Merchant acquiring, which is largely based on physical PoS, will need to be broad based to include QR codes supporting UPI and wallets to balance the changing usage pattern of digital payment modes.

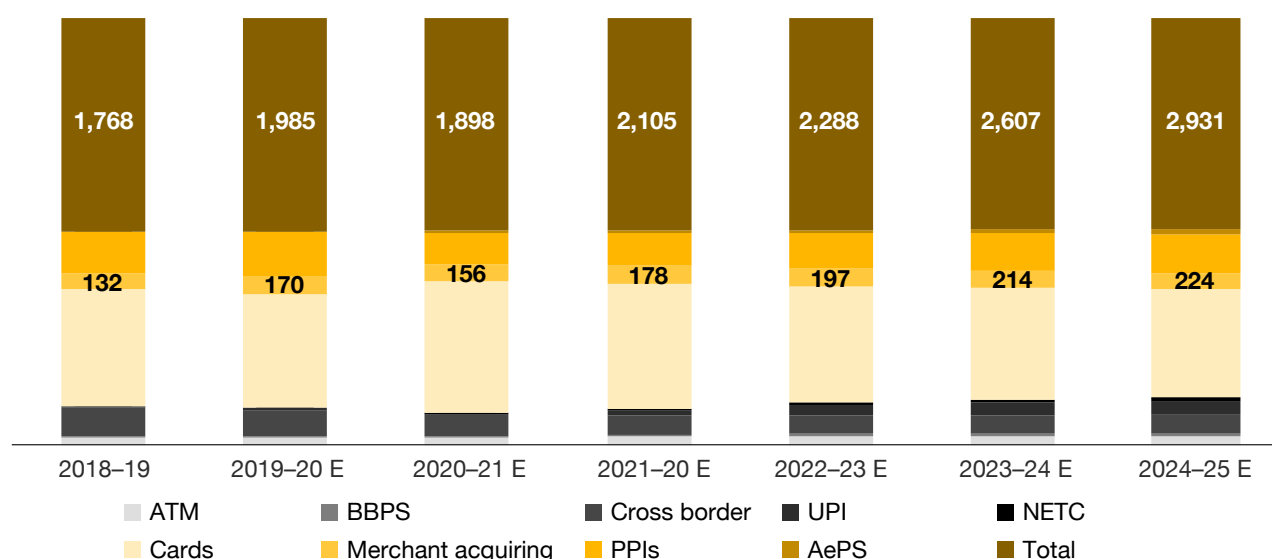
BBPS will continue to consolidate the bill payment market and opening of new categories will provide additional volumes to the platform. Integration of the BBPS with multiple payment modes – supported by mobile platforms – will allow faster adoption of the BBPS for bill payment. Customers will increasingly opt for digital modes of payment even as the effect of COVID-19 wears off. Additionally, with social distancing being the new normal and utility companies encouraging minimal crowds at their own collection points, we may see channel partners/business correspondents who are integrated with BBPS emerging as preferred bill collection points.

NETC will continue to gain momentum as it will digitise low-value cash transactions. It is expected that additional use cases like parking and fuel payment will help in faster adoption of the instrument.

With emerging payment technologies and their use cases across sectors, the momentum witnessed in the growth of digital payments is expected to continue. This will create a revenue pool of INR 2,931 billion by 2024–25 for players in the payment ecosystem.²²

²² PwC analysis of RBI and NPCI data

Revenue pool (in INR billion)



Source: PwC analysis of RBI data

Debit and credit cards will continue to be the highest revenue generators for players in the payment ecosystem. Revenue from merchant acquiring business will witness slow growth due to a gradual movement towards the zero MDR framework for card- and UPI-based transactions.

It is expected that the MDR on NETC transactions will gradually reduce and be compensated for by the growth in NETC transactions to help build up the revenue pool.

The introduction of a new category of semi-closed PPIs by the RBI will provide a lifeline to wallet operators which contribute to the revenue growth in PPIs, apart from other products like gift cards, travel cards and semi-closed cards for corporate reimbursements.

Cross-border payment will also contribute to revenue growth at a flat rate as emergence of new technologies will reduce the cost of remittance for end consumers.

Factors contributing to the growth of digital payment

Improved mobile and internet penetration

Improved mobile and internet penetration, along with e-commerce, have provided the necessary boost to digital payments. According to an ASSOCHAM-PwC study, there were 468 million smartphone users in India in 2017. Telecom operators are providing affordable data options, along with access to subscription-based digital media and entertainment platforms, online shopping, gaming, etc.²³

Regulatory and Government intervention

Interventions by the Government and the regulators have played a catalytic role in creating necessary infrastructure in the country to support digital payment. Interventions like rationalisation of MDR, digitisation of payment acceptance in Government departments and facilities, launch of NCMC and electronic toll collection are a few examples of the Government's focus towards digital payment.

Tech-savvy millennial population

Tech-savvy millennials are driving the adoption of digital payments. This segment of the population aspires for faster and convenient payment options that are currently being catered to by mobile-based payments. Increasing usage of smartwatches and fitness trackers supporting token-based transactions will further strengthen the digital payment market in India.

Innovative products and platforms

These have contributed significantly to the growth of digital payment in the country. Mobile wallets provide convenient payment options to customers. Similarly, UPI, which has made inroads into the P2P payment landscape, has emerged as another popular payment instrument. The disaggregated bill payment market is being digitised by BBPS. The entry of non-traditional players in the market has given a boost to innovative digital products and platforms.

²³ <https://www.assochem.org/newsdetail.php?id=7099#:~:text=India%20to%20have%20859%20million%20smartphones%20users%20in%202022%3A%20ASSOCHAM%2DPwC&text=As%20of%202017%2C%20the%20number,million%20smartphones%20users%20by%202022.>

The COVID-19 crisis will act as a catalyst for the increased adoption of digital payment modes

Beneficiaries of digital payments

The growth of digital payments in the country has benefited multiple stakeholders. Some of the prominent stakeholders who have gained are:



Banks

Banks have been able to diversify their payment systems by switching from cards as their primary payment instruments to faster payment systems like UPI and IMPS. New products like BBPS and NETC are additional avenues for increasing digital transactions and earning more revenue. These new products and platforms are being leveraged to retain and acquire customers.



Non-bank entities

Non-bank entities have emerged as significant players in promoting digital payments. PPI licence holders are actively collaborating with banks, brands and technology providers to develop products suited for specific customer segments. The entry of non-bank entities as direct participants in the UPI ecosystem has provided them with opportunities to grow in the payment space and introduce innovative solutions in the market. The New Umbrella Entity (NUE) framework would enable non-bank entities to collaborate with banks/FinTechs and enhance their customer relationships, and help them expand their reach in the market.



FinTechs and BigTechs

Multiple FinTechs and BigTechs are using IndiaStack to develop their services around digital payments. These FinTechs are closely working with banks and non-bank entities in redefining customer experience and capturing a major share of the customer wallet by generating adjacent business opportunities in terms of lending, insurance, wealth and other overlay services.



Technology service providers

Existing and new technology service providers (TSPs) have developed solutions enabling banks to onboard newer payment products and platforms. These TSPs are working closely with banks/non-banks to develop tailor-made products based on market demands.

How is the QR market shaping up?

Quick response (QR) code enabled payment instruments are new-age payment instruments that are shaping India's digital payment landscape. It had made digital payments simpler, cheaper and readily available at minimal cost when compared to traditional PoS machines.

QR code enabled payment instruments have reduced entry barriers for merchant acquirers and are rapidly picking up pace in terms of usage since demonetisation. Bharat QR, launched in September 2016 by the Government of India, has gained quick and wide acceptance across the country for being a more economical payment solution compared to PoS terminals and ATM outlets. It has eased payment processing for both merchants and consumers. Today, all major private and public banks have adopted Bharat QR for both acquiring and issuing.

All the UPI-enabled apps in India support scanning of Bharat QR and UPI QR to enable digital payment. Various public sector entities have also started accepting bill payment via Bharat QR. Such developments have made digital payment more acceptable to customers.

As per the RBI, approximately two million Bharat QR codes have been deployed in the market by acquiring banks and around 20 million transactions are recorded every month on Bharat QR. The latest data from the RBI shows that the usage of Bharat QR has grown by 40% from 10–15 million per month in FY19–20.²⁴

QR code based payment would be the most cost-effective way of expanding the digital footprint in the payment ecosystem. This mode has the potential to significantly accelerate the growth of digital payment in the country.

24 <https://rbidocs.rbi.org.in/rdocs//PublicationReport/Pdfs/ANALYSISQRCODED11971A9B9874EAFA1A61478F461E238.PDF>

Touchless payment (NFC)

Meanwhile, the NPCI is planning to introduce NFC capabilities in PoS infrastructure. This will further extend the reach of UPI transactions for offline merchants using PoS devices. It will also help the NPCI compete with global card networks like Visa and Mastercard which have strong associations with banks in terms of contactless payments (tap and go) made via their NFC-enabled chip cards.²⁵ With zero MDR imposed by the Government on its products, the NPCI is exploring more use cases to generate newer revenue opportunities for banks using the UPI infrastructure. It is also allowing banks to issue prepaid card instruments on the UPI network through payment apps.

Currently, approximately 20% of PoS terminals are NFC enabled. Touchless solutions such as NCMC and original equipment manufacturer (OEM) mobile apps/wallets have become prominent over the past few years and digitisation of payments will further increase acceptance of NFC-based infrastructure, along with mobile-based solutions.

Pan-India Umbrella Entity (PUE)

In February 2020, the RBI drafted a framework for setting up a pan-India umbrella entity (PUE) focusing on retail payment systems in India.²⁶ This initiative would strengthen the payment infrastructure in the country and drive innovation opportunities for new-age private sector banks, payment processing companies, IT service providers and FinTechs.

The emergence of PUE will allow players to enter retail space beyond ATMs, white-label solutions, PoS and Aadhaar-based payment, thereby helping them widen their reach and increase their brand value through partnerships with PUE.

Payment industry players can leverage their existing payment platforms and infrastructure to set up new payment methods, partner with payment aggregators, billers, etc., and expand their footprint among competitors. This would ensure that users are more aware about digital payments and help in creating robust infrastructure and opportunities for innovation and growth.

With the help of PUE, multiple use cases are expected to emerge to fill the white spaces in India's payment landscape, with regard to open API platforms, cross-border remittances, PoS switch and Government payment platforms. PUE is a commendable initiative by the regulators to encourage the use of digital channels for retail payments and manage relevant risks such as credit and liquidity.

Emergence of payment super apps

Many payment super apps have emerged in India over the past few years. Apart from allowing users to make digital payment, these apps provide other services such as ticket booking, games, online shopping, banking and consumer finance. The emergence of super apps is one of the primary reasons why UPI transactions have grown since demonetisation.

The success of these payment super apps has helped India establish itself as a major digital economy and exceed growth expectations in terms of both the value and volume of digital transactions.

In India, top players in the payment super apps space account for around 90% of the total market share of UPI payment providers. As of September 2020, the leading payment super app had approximately 75 million active users, followed by 60 million and 30 million users, respectively, for the second and third most used payment super app.²⁷

The leading payment super app in India was the most downloaded app worldwide in August 2020 with more than 10 million downloads, 80% of which were from India itself.²⁸ The wide adoption of digital payment during the COVID-19 crisis and the nationwide lockdown in March are the reasons behind the surge in downloading and using such payment super apps.

25 <https://www.livemint.com/news/india/upi-to-launch-nfc-based-payments-to-challenge-visa-mastercard-in-india-11596560940295.html>

26 <https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=11954&Mode=0>

27 <https://entrackr.com/2020/09/google-pay-most-downloaded-fintech-app-globally-in-august/>

28 Ibid.

IV

Conclusion

The evolution of the payment ecosystem is bringing to fore new ideas, systems, products and use cases. Some of the conventional payment systems and their business models are being challenged as part of this evolution. The traditional boundaries between banks, FinTechs and technology players are likely to diminish, and players can utilise suitable opportunities to move up the value chain and expand their revenue pools.

As the economy continues to recover from the COVID-19 crisis and consumer behaviour shifts towards using less cash, adoption of digital payment modes will continue to grow.



Mobile and wearable devices will emerge as preferred modes for making contactless payments and promoting card tokenisation and QR-based solutions in the future.



While we have witnessed the adoption of digital payments in metro and tier I cities, stakeholders should focus on developing products to attain similar success in semi-urban and rural areas of the country.



Regulatory sandbox with 'retail payments' as a theme provides an opportunity to aspiring players to fill the white space.



The emergence of PUE will lead to much-needed competition in the retail payments space for the development of newer and efficient payment solutions and alternative payment infrastructure.



We envisage that untapped areas like offline payments will be explored further in rural areas. Exploratory activities around digital currencies will provide customers with an alternative to cash.





In the coming years, the digital payment landscape in India will be defined by:

01

Overlay services: India's digital payment ecosystem has grown rapidly in the past few years. The growth has been fuelled by multiple factors, including digital overlay services offered by businesses. Today, companies are leveraging overlay services such as request to pay (RTP) to reduce their collection costs and enhance customer relationships. Such organisations leverage real-time payment solutions to offer VAS to their customers. We believe that companies can generate profits by leveraging digital overlay services and enhancing their relationships with customers.

02

Contextual payments: Companies or banks are moving towards contextual payments by leveraging data analytics and artificial intelligence (AI) to understand customer requirements by analysing their past transactional or behavioural data. Contextual payments drive operational efficiency and improve straight-through processing (STP) rates by eliminating manual tasks and helping banks to improve their transaction processing rates, and thus becoming profitable. We believe that contextual payments would continue to drive the market and be a key go-to-market solution for banks to enhance customer experience and ensure cost efficiencies.

03

Offline payments: The digital payment infrastructure has been evolving over the past few years. The volume of digital payments is growing every year and offline payments have played a significant role in this development. The launch of the NCMC-based open-loop smart card, which can be used offline on all payment systems (transit operators, retail, e-commerce, etc.) across India – using stored value (offline value/amount stored in physical cards) – will further boost the digital payment industry. As of now, NCMC is focused more on transit. Once the infrastructure is ready, we believe that offline payments will play a significant role in driving the growth of digital payments.

04

Invisible payments: Contactless payments have gained considerable traction, as seen from the record-breaking volume of UPI transactions during the COVID-19 crisis. Real-time payments are set to drive the digital payment market. Digital payments will also pave the way for business opportunities in sectors like insurance, retail, e-commerce and education.

Growth of digital payments also needs to be supported by robust and scalable infrastructure, strong regulations and participation of diverse players. Developing and implementing tighter cyber and information security guidelines to make the payment ecosystem more secure will help in ensuring that users are able to trust digital payment modes.

In the future, all participants in the digital payment ecosystem – regulators, payment system operators, financial institutions, banks, FinTechs and service providers – will be required to continue collaborating amongst themselves to sustain the growth achieved in the digital payment space over the last few years.

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