



Analysis of India's payment system indicators in 2020

March, 2021

Acknowledgments

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PhonePe

For providing insights and data to build a case study on contact-less payments



Digital India Collective for Empowerment (DICE)

For supporting our initiative to help us in building our case study



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Section 1

Key highlights



Overall insights of a tumultuous year- 2020

The dichotomy of digital and cash payments:

- Contactless and *Aadhaar*-based payments drove digital payments in a year when the economy contracted by an estimated 10%.¹
- Meanwhile, currency with the public increased by 22% from the previous year as people geared up for emergency expenses.
- Interestingly, cash and digital payments continued to coexist and grow during 2020 as consumers sought convenience of digital payments and all-weather acceptance of cash.

01 Facts

A Demand of digital payments soared



B It was equally matched by an increase in supply

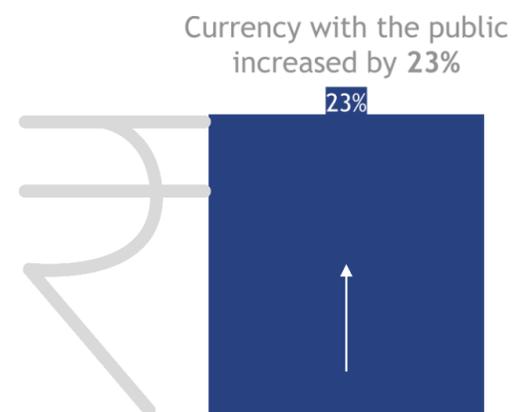


C Yet currency with the public continued to rise, because of its tangibility and widespread acceptance in times of uncertainty



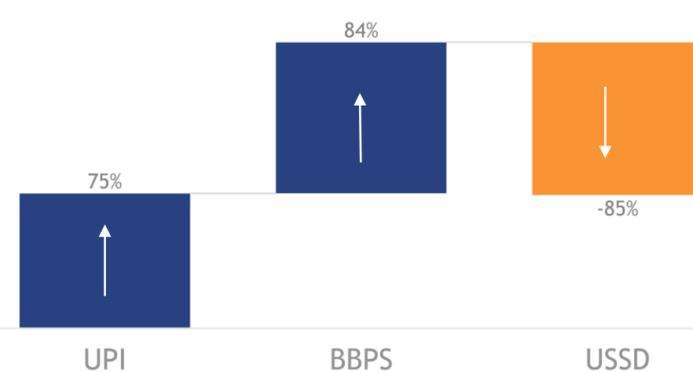
02 Key trends in payment ecosystem

YoY growth in cash (annual value)

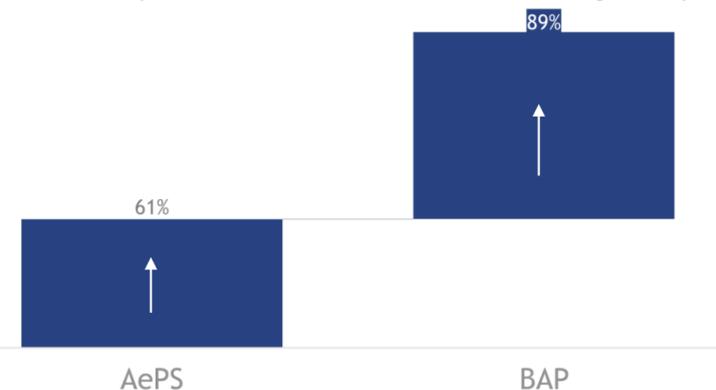


YoY growth of select digital payment instruments (annual volume of transactions)

Contactless payments category as a whole increased by 75%. The individual instruments grew by-



Aadhaar-based payments category as a whole increased by 61%. The individual instruments grew by-



Card payments category as a whole decreased by 19%. The individual instruments fell by-



¹Estimates by various rating agencies such as Moody's and Goldman Sachs | ²PWC | ³Digipay | ⁴We have used 366 days average of spot exchange rates for USD to INR conversion at the rate of 74.132 for all conversions in this report

The digital payment ecosystem has evolved and seen robust growth in India, but its impact has not been the same on everyone

In this report, we will vicariously live the lives of three Indian women, Punyata, Madhura, and Rashmi. Through their experiences, we understand the impact of COVID-19 on consumer behavior around payment instruments in India.

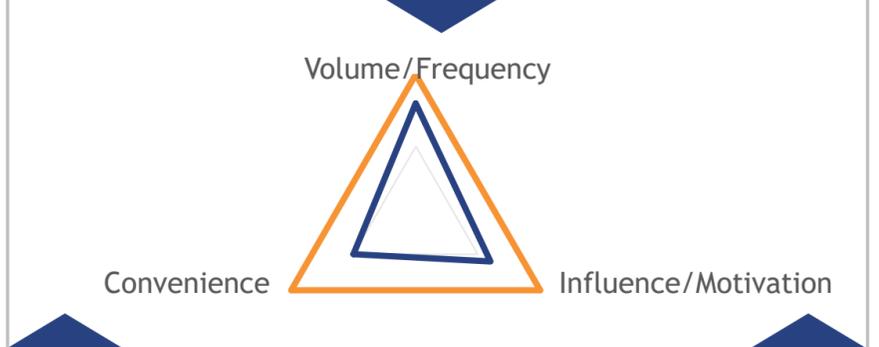
Punyata from Madhopur, Uttar Pradesh

26 years old | Studied till 10th grade | Owns a feature-phone




Punyata stays with her son and parents-in-law. Her husband works at a restaurant in Delhi and supports the family via monthly remittances.

Monthly inward remittances ensure a regular inflow of cash. Punyata has recently tried using BAP and BBPS to make cashless payments.



Social norms lead to restricted mobility. In such a case, Punyata's inability to digitally transact inhibits her financial freedom.

Punyata distrusts digital payment and prefers to use under her husband's supervision. She is however motivated to use branchless banking.

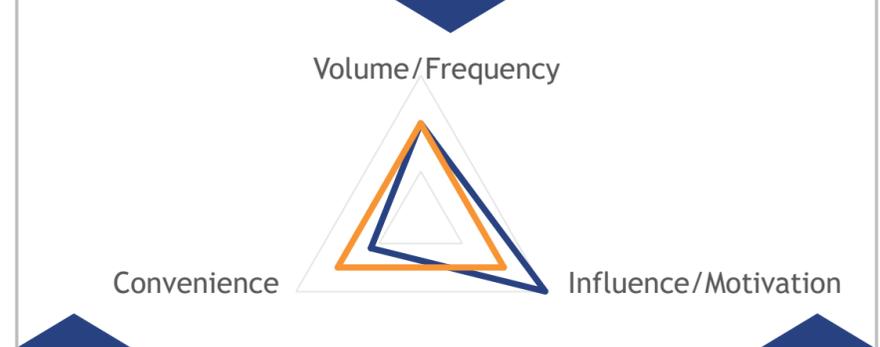
Madhura from Bangalore, Karnataka

30 years old | Diploma holder | Owns a limited smartphone




Madhura recently moved to Bangalore from the district of Raichur, Karnataka. She and her husband drive cabs with a major ride-hailing player.

Madhura has recently started using UPI to accept cab payments. But she still does not use apps to conduct other banking transactions.



While Madhura has found convenience in accepting payments digitally, she still finds banking apps complex and avoids using them.

Madhura's job and customer demand for digital payments have influenced her to adopt digital financial services.

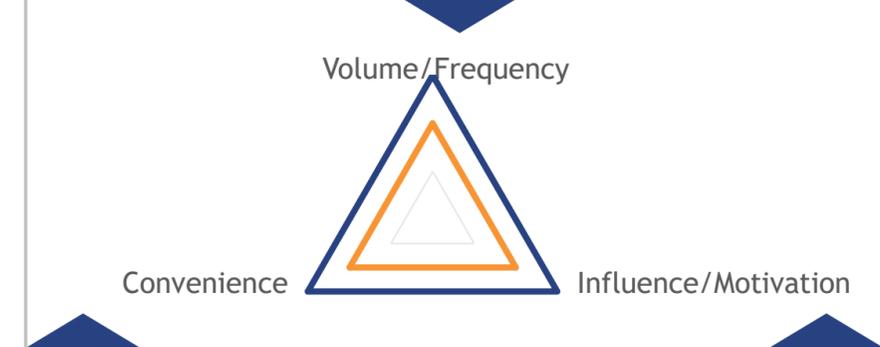
Rashmi from New Delhi

30 years old | Post Graduate | Owns a smartphone




Rashmi stays independently in Gurgaon and visits her parents over weekends. She works as a manager at a consumer internet startup.

Rashmi is an active user of fintech apps and conducts most of her transactions digitally. She is also an active user of credit cards



Rashmi finds it extremely convenient that she can do all her banking transactions online without ever visiting a bank branch.

Rashmi's social milieu and the mobile-first nature of her persona have been the key drivers in her adoption of fintech products

— Persona's financial services space (FSS) score — Threshold financial services space (FSS) for sustained use of DFS¹

¹MSC FSS framework has been adapted for DFS use. Please click [here](#) for the framework

A close-up photograph of a person's hands using a black payment terminal. The terminal has a keypad with numbers 1-9, 0, and function keys. A credit card is partially inserted into the bottom. The background is blurred, showing a retail or service environment with a computer monitor.

Section 2

Detailed analysis of payment system indicators

Section 2.1

Cash (currency with the public)

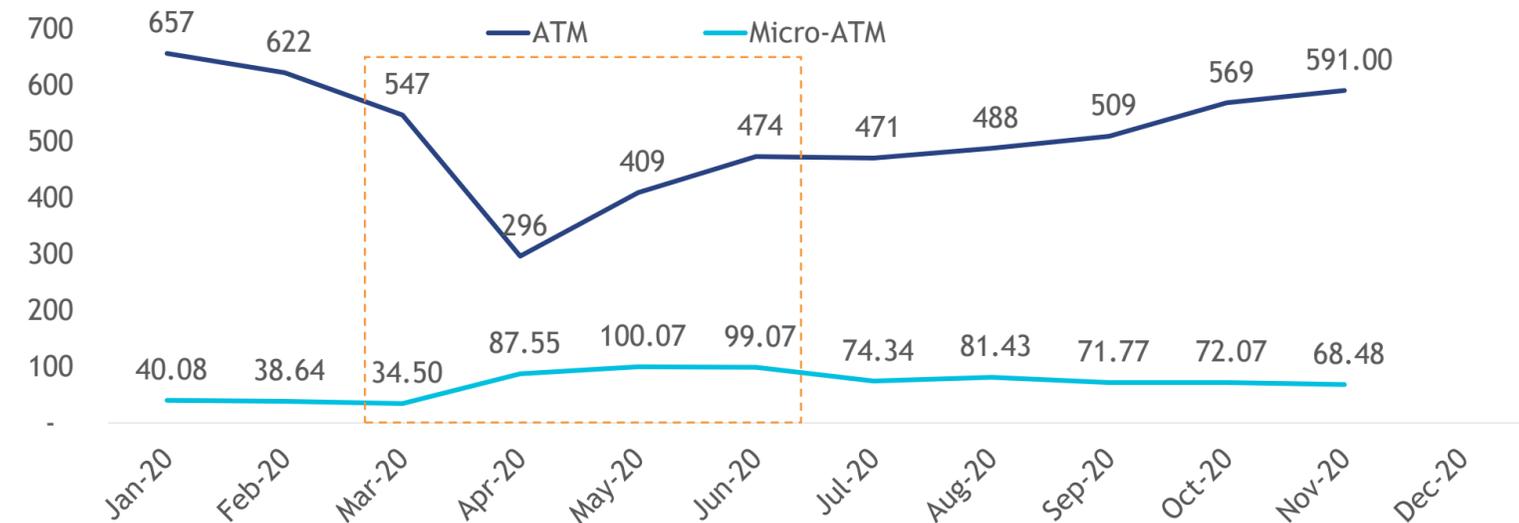


Cash and bank deposits—a year of two halves

Quarterly trends—cash, demand deposits and time deposits

Period	Currency with public		Demand deposits with banks		Time deposits with banks	
	Average Amount (INR billion)	Q-on-Q variations	Average Amount (INR billion)	Q-on-Q variations	Average Amount (INR billion)	Q-on-Q variations
1 Q1 2020	22,660	6%	15,768	8%	1,26,044	3%
2 Q2 2020	24,851	10%	15,849	1%	1,30,834	4%
3 Q3 2020	25,834	4%	16,406	4%	1,33,568	2%
4 Q4 2020	26,533	3%	16,597	1%	1,36,425	2%

Cash withdrawal (# million)



1 Pre-COVID-19: Starts high and stays high

2020 started with currency with the public at a high of INR 21,795 billion (~USD 294 billion), a ~12% YOY increase. This growth continued in Q1 2020 as interest rates on time deposits declined. A flight toward cash and drawdown on demand deposits started during the second half of Q1 2020. Fears about the impending pandemic amid an international lockdown and economic uncertainties meant people preferred to keep cash as a safety measure.

2 During-COVID: Demand for cash as a “safe asset” continues to rise

As the nationwide lockdown started and livelihoods were disrupted, people withdrew cash and held on to it as uncertainty prevailed. For residents of tier 2 and smaller cities and towns, limited options for digital payments encouraged higher cash withdrawals. This led to an average fortnightly increase of INR 355 billion (~USD 4.71 billion) in currency held by the public and an average fortnightly decline of INR 275 billion (~USD 3.65 billion) in demand deposits during Q2 2020.

2 During-COVID-19: Cash withdrawals show two distinct sides of India

While urban India stayed indoors and avoided using ATMs to minimize exposure, rural India thronged bank branches, ATMs, and BC points to withdraw DBT benefits in cash. Withdrawals at ATMs declined by ~35% in volume and ~33% in value, while they increased by 153% in volume and 61% in value at micro ATMs during Q2 2020 compared to the previous quarter.

3 Post-COVID-19: Economic uncertainties push people to keep their money as cash or invest in safe but low-cost time deposits

- Although currency with the public kept rising, the growth rate declined in H2 2020. While cash withdrawals at ATMs stabilized, they reduced substantially at micro ATMs as the government phased out emergency cash transfer programs during H2 2020.
- Q3 2020 saw a surge in demand deposits held at banks. However, the growth rate declined in Q4 2020 as banks reduced interest rates on saving accounts while loss of income led to withdrawals.

Economic uncertainties pushed people toward cash and bank deposits

Customer stories

Overall experience and impact of using cash before, during, and after the pandemic



Current impact

Key use-cases

Usage outlook

Cash for all household expense



Punyata recollects the rush and confusion as several rumors spread just before the lockdown. She heard that BC agent outlets would shut down—although the government had clarified that BC agents were part of essential services. In anticipation of BC agents going out of service, Punyata’s husband transferred INR 10,000 (~USD 135) to her savings account. She had to visit different BC agents several times to withdraw all her funds as the biometric scanner failed to read her fingerprints at most of the agent outlets.



All purchases

Continued high usage of cash because of it’s universal acceptance

Consistent cash withdrawals



Madhura and her husband’s income stopped entirely during the lockdown as cabs were not allowed to operate. Uncertain of when the government would lift the lockdown restrictions and in anticipation of emergency expenses, the couple withdrew INR 20,000 (~USD 270) from their joint savings account. They kept on withdrawing cash even as restrictions relaxed, which helped them manage the cost of buying groceries and other daily essentials.



Purchase of groceries and other daily essentials

Usage limited to household expenses from local vendors and retail stores

Cash for emergency purpose



Rashmi recollects the rush during the first week of the lockdown. To avoid stepping outside the house and potential exposure to COVID-19, her family withdrew a large amount of cash in a single transaction. “Even though we made most of the payments digitally, we wanted to be careful. So we kept cash with us for any unforeseen events.” Rashmi recalls that cash mostly helped purchase groceries and vegetables during phase 1 and phase 2 of the nationwide lockdown.



Only for emergency and local grocery purchases

Usage limited to rare cases where digital payments are not accepted

Impact level- Orange: Adverse, Cyan: No impact, Light blue: Positive, Dark blue: Accelerated)

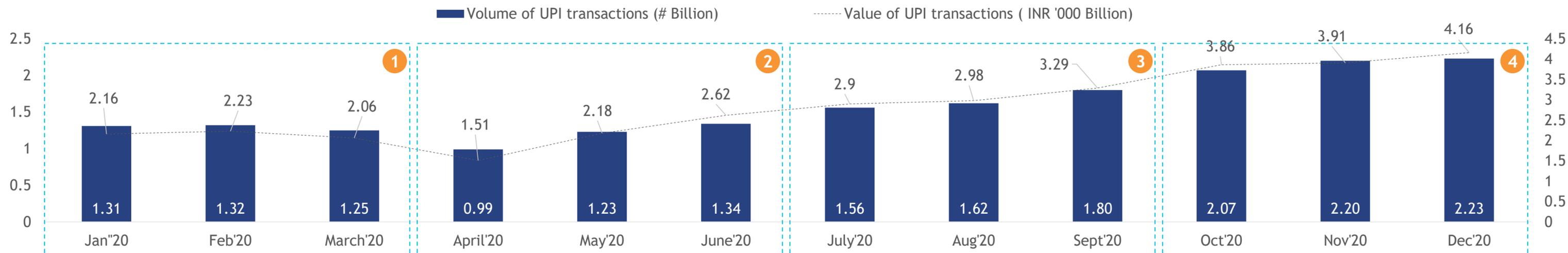
Section 2.2

Contactless payments



UPI's stellar growth guided India's day-to-day digital payments in 2020

United Payments Interface Statistics 2020



1 Pre-COVID: Consistent growth at BOY led by third-party apps

UPI's transaction volume soared to 3.87 billion in Q1 2020, an increase of 81% from Q1 2019. P2P and P2M transactions through third-party apps ([PhonePe](#), [Google Pay](#), and [Paytm](#)) primarily drove this growth. However, contraction in transaction volume and value began as India imposed the nationwide lockdown in the last week of March, 2020.

2 During-COVID: Being contactless, UPI becomes the preferred payment mode

- Restricted mobility, travel bans (especially in the Indian Railways, which accounts for a [significant share](#) in monthly UPI transactions), and reduced discretionary spending on non-essential items severely impacted UPI transactions in April 2020 (MoM decline of 20% in volume and 27% in value).
- When the restrictions of the lockdown were [relaxed](#), UPI transactions made a near v-shaped recovery and bounced back to pre-COVID-19 levels by the end of Q2 2020. UPI became one of the most preferred payment modes for online and offline purchases (via QR codes) amid social distancing.

3 Post-COVID: UPI has become more relevant as it blends the physical and digital space in the “new normal”

- UPI outstripped all other payment platforms in H2 2020, with daily volumes at an all-time high of 72 million in December, 2020. PhonePe and Google Pay continued to command [80%](#) of the market, split almost evenly.
- Initiatives such as “[auto pay](#)” for recurring payments, the entry of [WhatsApp Pay](#), the launch of secondary or back-up UPI ID to improve customer experience, guidelines on the UPI API's usage, and introducing B2B as a separate category added to UPI's adoption and growth.
- By the end of 2020, banks participation in UPI increased by 44%—[207](#) banks were live on UPI at the time of writing and cater to 165 million unique users. UPI has also inspired players globally to innovate in their respective markets- the latest is [PIX](#) from the Central Bank of Brazil.

UPI offered one of the safest modes of payments for P2P and P2M transfers

Customer stories

Overall experience and impact of using UPI before, during, and after the pandemic



Current impact

Key use-cases

Usage outlook

Low-digital literacy impedes usage



Punyata recalls the first week of the lockdown with deep sorrow. With confusion and fear in the village and fast-depleting pots of wheat, the family often had to skip meals to ration food. Most *kirana*²-shops remained closed for business because of the fear of contracting the virus. Punyata admits that if people around her could use UPI and the shopkeepers accepted it, rationing supplies could have been much easier for many households in her community.



Nil

Assisted trials and usage based on community's acceptance infrastructure

Timely intervention of UPI for a new user



Madhura's eyes light up when she hears of UPI. She recalls that she had never used UPI until the cooperative bank with which she banks started offering the service in January 2020. With no good reason not to try UPI, she soon joined the ranks of the millions of UPI users in India. The decision to use UPI turned out to be a blessing for Madhura, as she could make payments using QR codes without any contact. She could even accept cab payments via UPI once the lockdown eased.



Low-ticket sized offline-QR code payments at retail outlets

Increased self-usage for P2P and P2M transactions

Consistent user, satisfied with the product



Rashmi has been using UPI for two years to make online payments at nearby stores, order food through delivery apps, and shop online. UPI turned out to be even more convenient during the lockdown and allowed her to follow hygiene precautions. She used UPI to make offline payments via QR codes to purchase dairy, vegetables, and other essentials at physical outlets. She cannot imagine what the lockdown would have been like without UPI.



Medium- to large-ticket sized payments (online and offline via QR codes)

Advanced self-usage for P2P and P2M transactions

Impact level- Orange: Adverse, Cyan: No impact, Light blue: Positive, Dark blue: Accelerated)

Understanding PhonePe's journey in 2020 to becoming the market leader (1/2)

Beginning of 2020

PhonePe started the year as a key player in UPI and saw a monthly volume of 1.3 billion and a value of INR 2.16 trillion (~USD 29 billion) in February. PhonePe was also a leading player in a few other products, such as bill payments, FASTag, investments, gold purchase, and recharges.



Impact of the pandemic

UPI volumes declined to 1 billion in April (25% drop from Feb-20 volumes) during the nationwide lockdown. BBPS followed similar trends as well. PhonePe also suffered and witnessed comparable drops in volume and value in March and April. With shops shut, P2M volumes declined as well.



How did PhonePe recover to become the market leader?



By December, PhonePe surpassed a billion transactions (2x of PhonePe's June numbers) with a 40% market share in UPI and a 265 million-plus user base. It achieved this feat by strengthening its position in existing markets and diversifying its product and geography to capture new areas.

Coping strategies



Horizontal product innovation⁵

Vertical product innovation⁶

Existing markets

Launched new and affordable financial products, such as mutual funds and insurance, to build and protect the long-term wealth of users.

Introduced innovative features, such as the "Stores" page and "Pay Now," which allow users to make payments remotely without scanning store QR-codes.
Prioritized product experience over incentives.
Drove user engagement despite failing transaction volumes, which led to higher retention.

New and nascent markets

Introduced COVID insurance, which rapidly found a product-market fit with users who could not work from home (non-knowledge industries) and had to risk exposure to the virus

Increased offline presence to more than 16 million stores in 500+ cities, which led to a rise in overall transactions as lockdown restrictions eased across India.

⁵Adding new categories to existing products

⁶Building new use-cases or improving features of the existing product

Understanding PhonePe's journey in 2020 to becoming the market leader (2/2)

Impact of the coping strategies on PhonePe's business

Existing markets

Assisted onboarding

50% increase in use-cases, such as bill payments and recharges with PhonePe users who have bought top-ups for the phone numbers of other family members as well



Category creation

2X increase in digital gold sales driven by engagement. Users perceived gold to be a safe asset for investments



New and nascent markets

Usage & Retention

60% of users who registered in Q2 2020 continued to use PhonePe in Q4 2020, indicating sustained usage and high customer retention



Emergence of insurtech

600,000+ insurance products sold in six months, making PhonePe the fastest insurtech platform in the market



New use-cases

3x increase in activity and 50% rise in daily traffic on stores page after introducing the new features



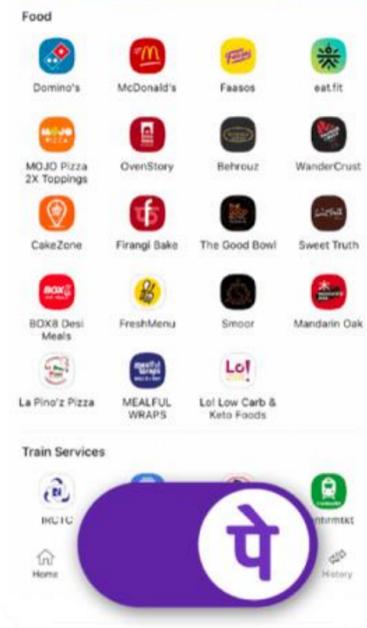
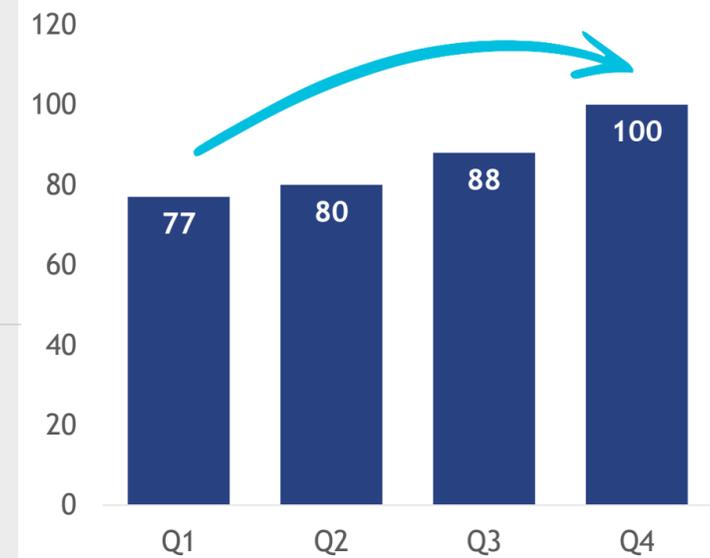
Organic inclusion

17% rise in daily active users with 85% of these new users belonging to tier 2 cities and smaller geographies



Consistent engagement

■ Average monthly active users (# millions)

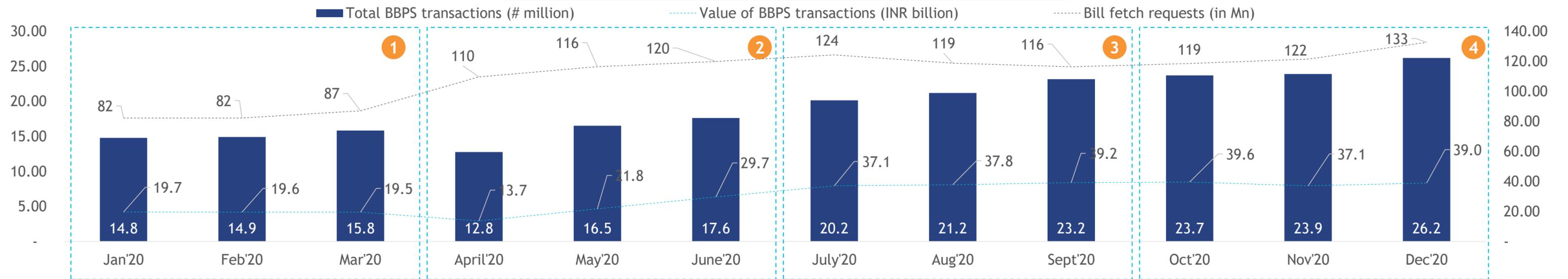


Path ahead for 2021 and beyond

- **The emergence of a super-app:** [PhonePe Switch](#) has shown early signs of traction with over 300 apps being added to it, including few marquee names, such as [Ola](#), [Swiggy](#), [Myntra](#), and [Delhi Metro](#). The Switch unlocks value from the supply side as it provides access to new users and reduces customer acquisition cost (CAC) for partner apps. Some partners have reported a 40% reduction in CAC. Partner apps are beneficial for LMI users for whom mobile storage is a scarce resource. These users can use partner apps without installing any of them and without going through the friction of using a browser.
- **Monetizing opportunity:** The [removal of MDR](#) has eroded margins from UPI. Thus, third-party financial products, such as insurance, mutual funds, and digital gold provide value-generating opportunities. The success of insurance is a strong signal that adding more financial products tailored to users' financial health will witness adoption and drive the bottom-line for PhonePe.

A sharp rise in billers increased the adoption of BBPS across India

Bharat Bill Payment System Statistics 2020



1 Pre-COVID: Lower than anticipated usage at BOY

With limited billers on the platform and people's preference for bill payments through cash, BBPS transactions did not grow much during Q1 of 2020. The contraction in transaction volume and value began as India imposed the nationwide lockdown.

2 During-COVID: Fall and recovery in usage as people seek alternatives to cash payments of bills

- As the nationwide lockdown set in, non-payment of routine bills due to existing or anticipated cash crunches and relaxations on payment of utility bills adversely impacted BBPS transaction in April, 2020. The MoM decline was at 19% in volume and 30% in value.
- When the lockdown was subsequently relaxed, BBPS transactions made a strong recovery by the end of Q2 2020 (QoQ increase of 3% in volume and 11% in value). Bill fetch requests increased by 37.52% in Q2 2020 (QoQ), indicating a rising need and intent for online bill payments.

3 Post-COVID-19: BBPS consolidates India's recurring bill payments industry under one payment system

- By integrating recurring payments, BBPS added ~19,000 unique billers in H2 2020 across 15 additional categories, including education fees, loan repayments, insurance, booking of cooking gas, municipality taxes, and subscription fees, etc.
- The revival of commercial activities, improvement in consumer spending, and the beginning of a delayed academic year added to the growth of BBPS transactions in H2 2020.
- The convenience of making round-the-clock bill payments to multiple billers from a single platform, and concerns over cash and cards being potential vectors of COVID-19, were the primary drivers for adopting BBPS. For billers, the collection of payments through partner networks, such as Vakrangee, increased their access in rural and semi-urban areas.

BBPS facilitated 24x7 payments to multiple billers from a single platform

Customer stories

Overall experience and impact of using BBPS before, during, and after the pandemic



Current impact

Key use-cases

Usage outlook

Process innovation can lead to digital usage



Punyata struggled to pay the electricity bill during the lockdown as she was used to paying directly at the local electricity board office. However, the local *dakiya* (postman) helped her to pay the utility bill using a micro ATM through BBPS at her doorstep. She could also recharge her mobile phone. However, she found it challenging to coordinate the visits with the *dakiya* and feared that it might result in delayed payments. Hence, she switched back to cash payments when the lockdown restrictions were relaxed.



Electricity and mobile recharge

Assisted trials with seamless operations can lead to digital usage

Assisted to self-service mode



Madhura used to pay the electricity and other utility bills at a nearby CSC outlet before the lockdown. However, restricted mobility and fear of contracting the virus prompted her to try out a payment app to pay the utility bills. With some assistance from her nephew, Madhura soon became proficient in using the app to pay bills, recharge her mobile, and pay for her DTH connection. She plans to continue this habit as it is quite convenient and efficient.



Electricity, DTH, and mobile recharge

Increased usage via self-service mode

COVID-19 led to digital- converts



Rashmi had always used PhonePe to pay her bills digitally through BBPS. During the lockdown, she managed to teach her mother to pay digitally using a payments app, which was a big win for her. Rashmi's mother has since started using PhonePe to make recurring payments for electricity and internet bills and to recharge her mobile and DTH connection.

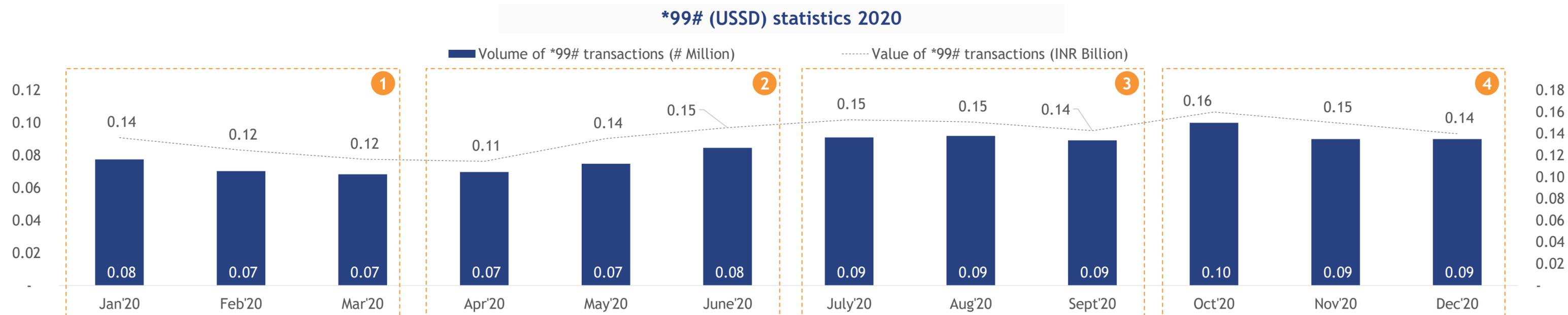


Electricity, Internet, OTT, mobile postpaid

Increased usage for self and role of handholding family members

Impact level- Orange: Adverse, Cyan: No impact, Light blue: Positive, Dark blue: Accelerated)

*99# (USSD) continued to underwhelm with a few banks backing out



1 Pre-COVID: A declining path for *99# with fading significance

- *99# (USSD) transaction volumes and values reduced in Q1 2020, suggesting its diminishing relevance and usage among India's [rising smartphone user base](#).
- Besides, limited awareness of the product features among feature phone users, clunky UI, complex on-boarding process, and limited use-case (A2A) further added to *99# (USSD)'s decline.

2 During-COVID: *99# was unaffected by lockdown-related restrictions

- The onset of the pandemic and nationwide lockdown had a limited impact on *99# transactions, unlike other contactless payment systems. While the transaction volumes remained the same as the previous quarter, transaction values dipped slightly in April, 2020 and recovered subsequently when the lockdown restrictions were relaxed. Poor usage levels during the pandemic point to a shift in the preference of feature phone users for cash and assisted modes of digital payment over *99#.

3 Post-COVID: USSD fails to impress, yet again as users flock to other digital payment instruments

- Despite a marginal improvement in H2 2020, *99# transaction volumes and values contracted back to pre-COVID levels by the end of 2020. Compared to other payment instruments, *99#'s poor performance suggests its limited applicability in key P2P and P2M use-cases that bolstered the growth of digital payments in India during and after the peak of the pandemic.
- With the rising use of smartphones and increased assisted usage options for feature phone users to make and receive payments, *99#'s adoption and usage continued to be sub-par.



USSD struggles to stay relevant with a clunky UI and limited product-market fit

Customer stories

Overall experience and impact of using *99# (USSD) before, during, and after the pandemic



Current impact

Key use-cases

Usage outlook

Once bitten, twice shy



Punyata had once used USSD to transfer INR 1,000 (~USD 14) to her brother. She had encountered multiple transaction time-outs and a transaction failure. She could finally complete the transaction after several attempts.

However, it took three days for the amount of the failed transaction to be reversed to her account. Since then, she has not attempted to use USSD for any transaction.



Payments, remittances, account balance inquiry

Limited usage with penetration of BC agents and doorstep banking

USSD not relevant anymore



Before she bought a smartphone, Madhura, like millions of Indians, used feature phones solely for voice calls and text messages. She did use the USSD short codes to check balance of her GSM connection but did not like the UI. She never used *99# for any financial transaction. Once she got a smartphone, she no longer had any use for *99#. She uses the telecom provider's app to check her balance.



Nil

No to diminishing usage

Unaware of USSD



As with Madhura, Rashmi used to check the balance of her GSM connection using USSD short codes. Though she had heard about *99# at the time of its launch, she never used it to make any payment or transfer.

She is not aware of any features of *99# and finds it difficult to believe that it still exists since the arrival of payment apps.



Nil

No usage

Impact level- Orange: Adverse, Cyan: No impact, Light blue: Positive, Dark blue: Accelerated)

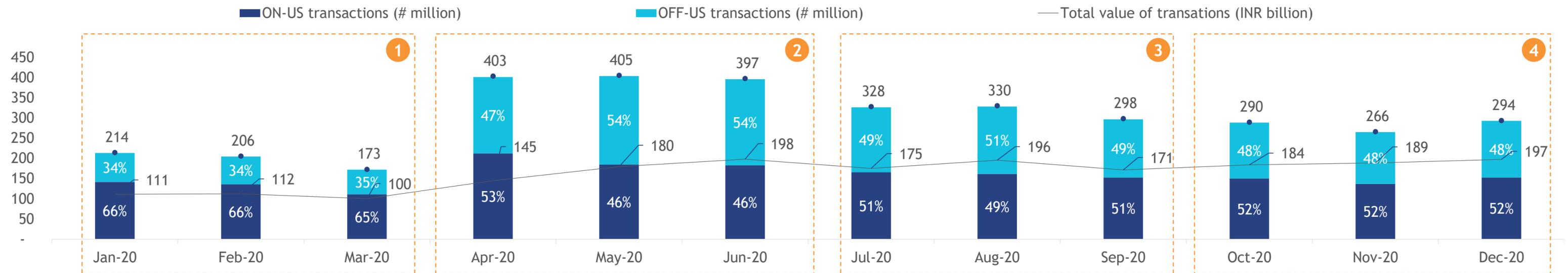
Section 2.3

Aadhaar-based payments



AePS provided a fillip to in-cash DBT through agent network across rural India

Aadhaar-Enabled Payment System statistics 2020



1 Pre-COVID: Delivery issues at the ground-level restrict AePS's uptake

The transaction volumes of AePS declined sharply by 41.52 million from January to March, 2020. Issues that affected AePS include recurring transaction failures, especially for OFFUS transactions, issues in the reconciliation of failed transactions, and non-uniform customer experience at BC agents.

2 During-COVID: AePS emerged as a critical cash-out medium for migrants, daily wagers, and other informal sector workers

- The [emergency cash transfer programs](#) of governments created a massive demand for withdrawal. Accordingly, micro ATM at BC agents and retailers took AePS transactions to an all-time high during the lockdown and the subsequent unlock phases in Q2 2020.
- NPCI processed 1.21 billion transactions through AePS in Q2 2020, of which 0.29 billion were OFFUS financial transactions worth INR 528.21 billion (~USD 7.01 billion)—an increase of 151% in volume and 61% in value over Q1 2020. Non-financial transactions, such as balance inquiry, mini statement, and UIDAI authentication also surged similarly.

2 During-COVID: Spike in transaction failures as volumes grow

The average rate of transaction failure for AePS was at [39% in April, 2020](#). The primary reasons being issuer bank in-operative, biometric mismatch, link failure, and transaction time-outs. Besides, delayed reversals of failed transaction amounts also impacted the users during the crisis.

3 Post-COVID: Payments bank provide a critical boost to AePS

- 4 • As the emergency cash transfer programs phased out, AePS transactions fell by 21% and 11% in volume in Q3 and Q4 2020 respectively compared to the previous quarter. However, transaction volumes in H2 2020 were at par with H1 2020 as several payment banks, such as [Paytm](#), started offering AePS facilities to their customers, which helped the OFFUS transactions to catch up with ONUS transactions.
- NPCI processed 449 million OFFUS financial transactions worth INR 1,125 billion (~USD 15 billion) through AePS in H2 2020 (an increase of 10% in volume and 31% in value over H1 2020).

AePS is popular in rural geographies for CICO and domestic remittances

Customer stories

Overall experience and impact of using AePS before, during, and after the pandemic



Current impact

Key use-cases

Usage outlook

A life-saver during the pandemic



Punyata is grateful to the government, banks, and BC agents for enabling AePS facility in her village. While the bank branches curtailed operational hours and services to reduce crowding in the branches, she always found the BC agent outlets up and running throughout the lockdown.

She was finally able to withdraw all her funds, despite several failed attempts, at BC outlets.



Cash-withdrawal

Continued assisted usage led by BC agents and postmen

Continued lifeline to family in rural India



Madhura never uses AePS for cash withdrawal as she prefers to use an ATM and debit card at a nearby ATM. However, AePS played a significant role in her household during the lockdown. Her parents visited the BC agent outlet in their village to withdraw the money that Madhura used to send every month. Her parents also withdrew their DBT government support payments at the BC. The BC agent was supportive and helped her elderly parents with their transactions.



Cash withdrawal for parents in the village

Continued assisted usage at the beneficiary end of remittance corridors

No use-case for AePS



AePS reminds Rashmi of a recent advertisement by Paytm Payments Bank. Yet apart from that, she has never used AePS. Whenever she needs cash, she withdraws it from an ATM outside her apartment complex.

However, she is quick to admire AePS for ensuring the social safety net of the LMI segments during the lockdown.

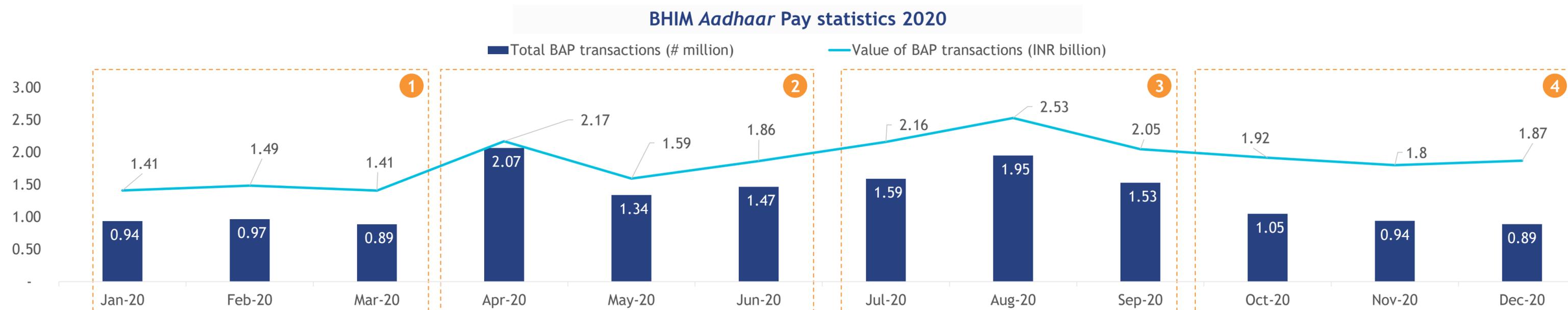


Nil

No use-case for AePS apart from doorstep service of cash withdrawal services

Impact level- Orange: Adverse, Cyan: No impact, Light blue: Positive, Dark blue: Accelerated)

BAP helped merchants to digitize small ticket-size purchases



1 Pre-COVID: Lower than anticipated adoption and usage at BOY

- With an average monthly transaction volume of 0.93 million during Q1 2020, the adoption of BAP was sub-par despite a strong use-case, especially for micro-merchants across semi-urban and rural locations.
- A lukewarm push from banks, lack of obvious demand from customers, lengthy transaction process, non-compatibility of biometric scanners, and the initial CAPEX required for biometric devices continued to slow BAP's progress.

2 During-COVID: Growing concerns over cash and cards being potential vectors of COVID-19 paved the way for BAP

- While restricted mobility and fear of contracting the virus suppressed cash transactions for merchants and their customers, it increased the adoption and usage of BAP, especially among feature phone owners.
- Beneficiaries of the government's cash transfer programs, migrants, daily wagers, and other informal sector workers are some of the major user segments.

2 During-COVID: Pandemic provides the necessary momentum

With relaxations in lockdown restrictions, BAP transactions decreased sharply during May and June, 2020. However, the average transaction volumes in May and June, 2020 were still substantially higher (~51% more) than the previous quarter.

3 Post-COVID: Acquiring banks drive merchants to use BAP

- 4 • BAP transactions continued to grow at 4% in volume and 24% in value in H2 2020 over H1 2020. The average transaction value also increased to INR 1,550 (~USD 21) in H2 2020, indicating a rise in the users who prefer BAP for small to medium ticket-size purchases.
- While cash-backs and incentives continued to create a positive impact and pull for both customers and merchants, push from the acquiring banks was a significant driver for people to adopt BAP. However, cash and UPI-based offline QR continued to give stiff competition to BAP.

BAP has gained popularity in rural areas but has no takers in urban centers

Customer stories

Overall experience and impact of using BAP before, during, and after the pandemic



Current impact

Key use-cases

Usage outlook

Cautious first-time user



Punyata learned first about BAP during the lockdown from an advertisement at a BC agent outlet. She found out that only a couple of merchants—a kirana store and a medical shop accepted payments through BAP. Once when she was short of cash, she used BAP to purchase medicines.

However, the experience could have been better as the transaction took a lot of time and the merchant was also not supportive.



Merchant payments

Assisted trials and product enhancements can lead to increase in usage

Unaware of BAP



Madhura was not aware of BAP before the lockdown. She does not think BP is useful for her as a combination of cash and digital payments works for most of her payments. She has also become comfortable transacting on a smartphone. She feels that BAP can help her parents and other people in the village to make small-value purchases and reduce their dependency on cash. However, people would require some initial assistance or handholding from merchants to start using BAP.



Nil

No use-case for BAP with smartphone ownership and urban location

No use-case for AePS



Rashmi was not aware one could use *Aadhaar* for merchant transactions. She does not think BAP is useful for her as she is comfortable using cash and UPI-based offline QR. Moreover, she considers any contact-based payments risky, given the chances of contracting the virus.

Besides, she has not seen any retail outlet in her neighborhood that accepts payments through BAP.



Nil

No use-case for BAP with smartphone ownership and urban location

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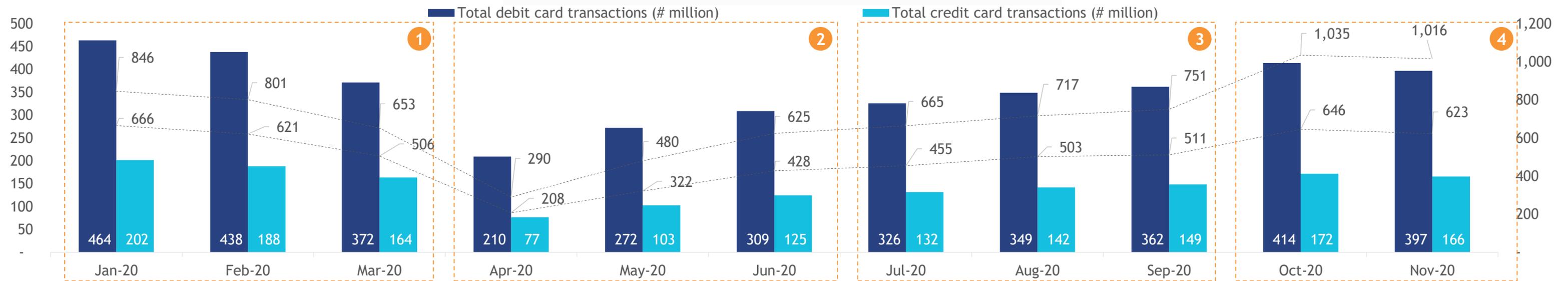
Section 2.4

Card-based payments



Card payments made a strong recovery after a record decline

Debit and credit card statistics 2020



1 Pre-COVID: After a strong opening, a gradual fall in transactions

The transaction volumes for debit and credit cards soared to 1,273 million and 554 million in Q1 2020—a YOY increase of 13% and 54% respectively. However, the transaction volumes declined through Q1 2020 amid scares about the impending pandemic and economic uncertainties. PoS transaction volumes fell by 22% for debit cards and 16% for credit cards in March, 2020 (MoM).

2 During-COVID: Growing concerns over cards being potential vectors of COVID-19 deals a blow to PoS and e-commerce transactions

- Card transactions, both online and offline, saw a record decline as the economy halted and people held on to their money. Transaction volumes plummeted in April, 2020 (MoM)—56% for debit cards (65% for PoS) and 59% for credit cards (69% for PoS).
- With the travel bans, the shutdown of hotels and eateries, and limited spending on daily essentials and groceries, the average ticket size declined by 21% for debit cards and 12% for credit cards in April, 2020.

2 During-COVID: PoS transactions ascend after the sharpest dip

Card payments made a strong recovery in May and June, 2020 backed by the revival of commercial activities and domestic travel, and improved consumer spending. PoS transactions rose faster to match e-commerce.

3 Post-COVID*: Festivities and high-value spends help in recovery

- 4 With the gradual lifting of restrictions on movements, the start of non-essential businesses, and the festive season, people's reliance on cards for conventional retail and online payments returned to pre-COVID levels. Transaction volumes increased by 31% for debit cards and 39% for credit cards in H2 2020* over H1 2020. The average ticket size also improved by 26% to INR 2,264 (~USD 30) for debit cards and 13% for credit cards to INR 3,600 (~USD 48) in H2 2020 as more households focused on making fewer but larger purchases and segregated payment instruments based on the value of transactions.

Source: [Debit and credit card statistics](#)

*Q4 2020 transaction data for debit and credit card comprises October and November, 2020 as the RBI is expected to release the transaction data for December, 2020 in March, 2021

Cards helped consumers with conventional retail and online purchases

Customer stories

Overall experience and impact of using debit or credit cards before, during, and after the pandemic



Current impact

Key use-cases

Usage outlook

Never used cards—not even during COVID-19



Punyata received a RuPay debit card from her bank soon after opening a PMJDY account. However, she misplaced the card even before she could activate it. She never felt the need to apply for a new debit card as she transacts mostly in cash, which she withdraws at the BC agent outlet or through the *dakiya* (postman) using biometric authentication. Besides, she fears misplacing the card again, which discouraged her from applying for a replacement.



Nil

Assisted trials but a high probability of graduating to UPI

Limited use of debit card



Madhura uses her debit card primarily at ATMs for withdrawing cash once a week. Only recently, her nephew helped her order a pair of shoes online using her debit card.

However, she fears that using a debit card on PoS devices and for online purchases exposes her to the risk of fraud or unintentional errors. She is more comfortable using UPI than a debit card for these purchases.



Essential but limited role of debit cards as a cash-withdrawal instrument

Increased self-usage for online as well as offline transactions

Avid credit and debit card user



Rashmi has been an avid debit and credit card user as far as she can remember. The loyalty points program offered on card-based purchases has also been a significant driver for her. Since she started using UPI, her debit card usage is limited to online purchases involving discount offers and cash withdrawals at ATMs. She uses her credit card quite often for conventional retail and online purchases. She feels that a credit card is secure for high-value transactions, both at PoS and on e-commerce platforms.



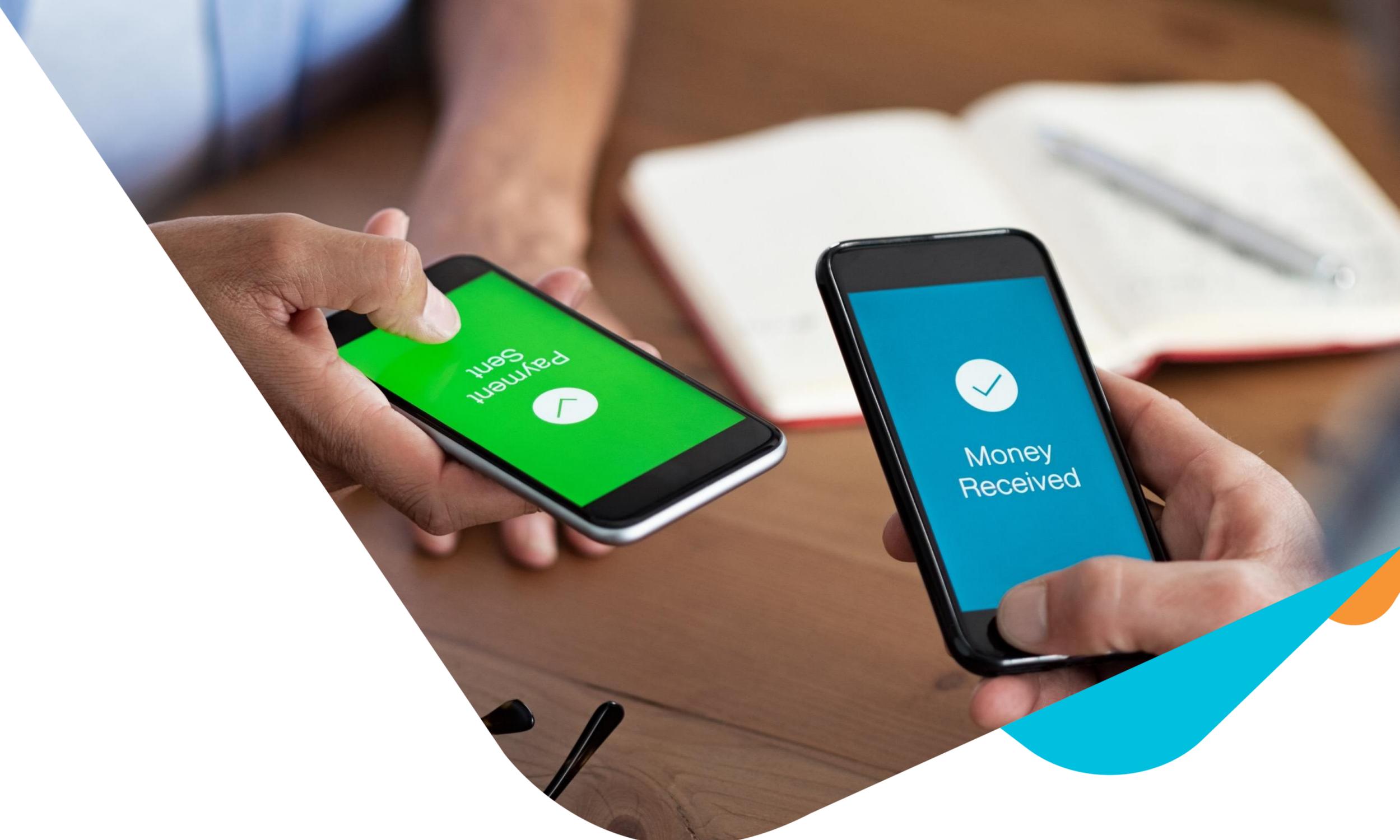
Medium to high-valued online transactions via credit cards

Increased usage of credit cards for medium to high-value transactions

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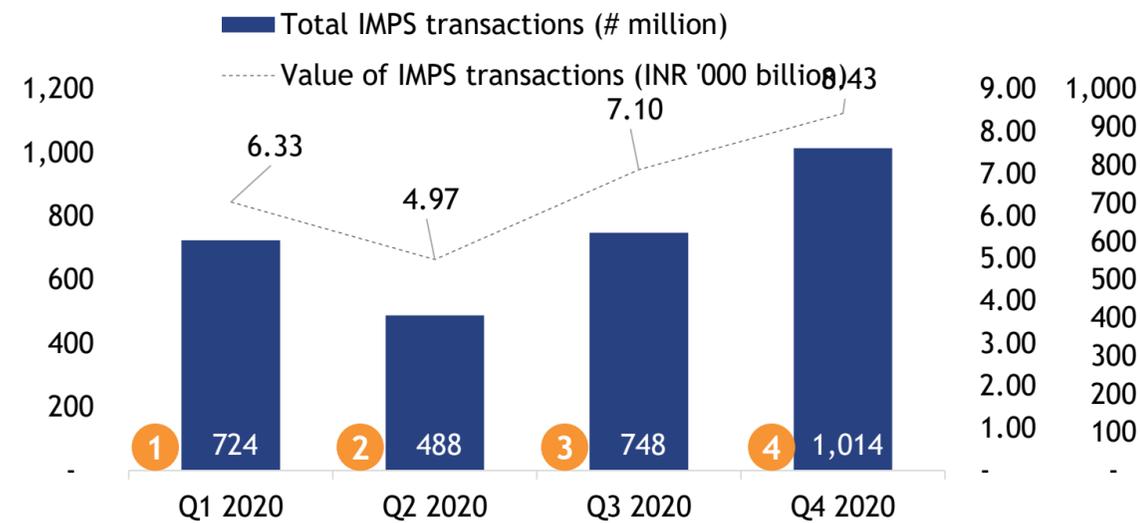
Section 2.5

Remittances

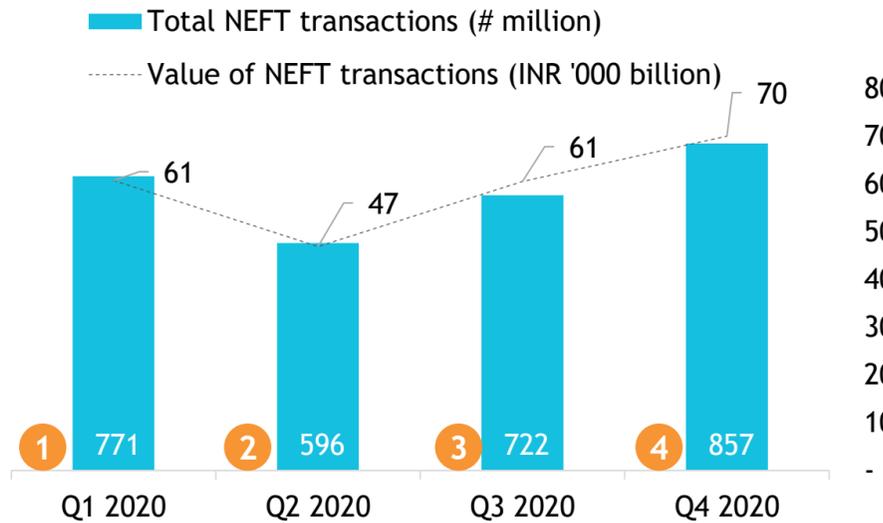


Remittances are recovering as the economy opens and the workforce returns

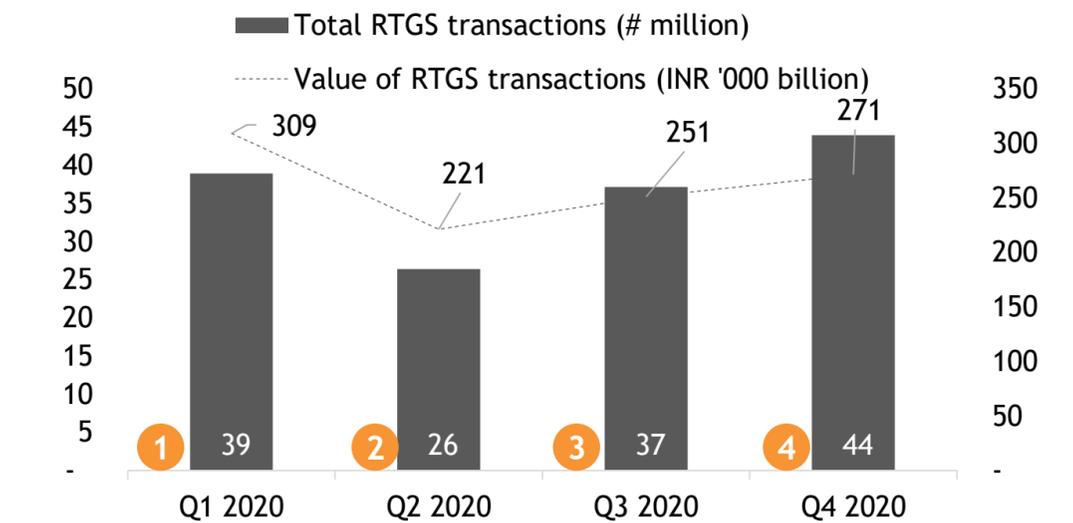
IMPS statistics 2020



NEFT statistics 2020



RTGS statistics 2020



1 Pre-COVID: News precedes the virus

Taken together, RTGS and NEFT cover around 90% of total payments in the country. Even before the government imposed the lockdown restrictions in India, news of the pandemic outbreak in other countries led to early trends in the contraction of remittances across the board.

2 During-COVID: As the economy halts, reverse migration begins

- The nationwide lockdown led to a sharp contraction in remittances in Q2 2020 over the previous quarter. RTGS transactions, mostly used by businesses for supplier payments, witnessed a decline of almost 32% in volume and 28% in value. NEFT transactions, mostly used by the white-collar segments, also declined by 23% in both volume and value.
- Domestic money transfer services took a severe hit. [Migrants moved back to their native places](#) in rural areas after non-essential economic activities were shut down in urban and semi-urban areas. IMPS transactions, mostly used for low-ticket-sized remittances, declined by 33% in volume and 21% in value in Q2 2020 over the previous quarter.

2 Post-COVID*: Remittances make a “v-shaped” recovery

- The economy began to revive across the board in H2 2020. As the government relief packages made their way to MSMEs and campaigns, such as [“vocal for local”](#) showed their impact, businesses found liquidity to build inventory and conduct business. Although the volumes of RTGS transactions increased by 24% in volume in H2 2020 over H1 2020, the aggregate value lagged by 2%. This indicates the cautious outlook of businesses as they try to recover using a prudent approach of limiting their inventory.
- As seen with GST collection, the revival in the economy brought migrants, daily wagers, and informal sector workers back to urban and semi-urban areas in H2 2020. Subsequently, IMPS transactions increased by 45% in volume and 37% in value in H2 2020 over H1 2020. Similarly, NEFT grew 15% in volume and 21% in value in H2 2020 over H1 2020 as use-cases, such as house rent, social lending, and school fees picked up.

Remittances proved to be a lifesaver for many Indians during the crisis

Customer stories

Overall experience and impact of using remittances before, during, and after the pandemic



Current impact

Key use-cases

Usage outlook

IMPS helped to face the lockdown



Punyata’s husband sent money to her account via IMPS every month before the lockdown restrictions stopped his work in the city and the associated income for a couple of months. However, he could still manage to send her INR 10,000 (~USD 135) in April 2020, which helped her manage the household expenses during the lockdown.

As the lockdown restrictions eased, her husband’s work resumed, and so did the monthly remittances via IMPS.



Monthly inward remittances via IMPS

Continued assisted usage for livelihood supporting cash-withdrawals

IMPS helped avert a crisis



Like Punyata’s husband, Madhura supported her parents by remitting part of her monthly earnings until the onset of the pandemic. During the lockdown, she was out of work as cabs were not allowed to operate. However, she could still manage to send INR 15,000 (~USD 200) from a local money transfer merchant outlet using IMPS. Such remittances turned out to be a life-saver for her ailing parents during the crisis. She now wants to learn how to send money from her mobile phone via UPI.



Monthly outward remittances via IMPS

Increasing usage for cash-in; Increasing aspiration to switch to UPI for convenience

Selective remitter



Rashmi uses UPI for daily small-value remittances, mostly to either pay a merchant or transfer funds to a friend. However, she switches to NEFT for transaction value higher than INR 10,000 (~USD 135)—monthly house rent being one such transaction. After moving out of her rented apartment during the lockdown, she has not made any high-value remittances until her recent loan of INR 12,000 (~USD 162) to her housekeeper.



High-value remittances via NEFT

Declining usage, limited only for few transfers of high value

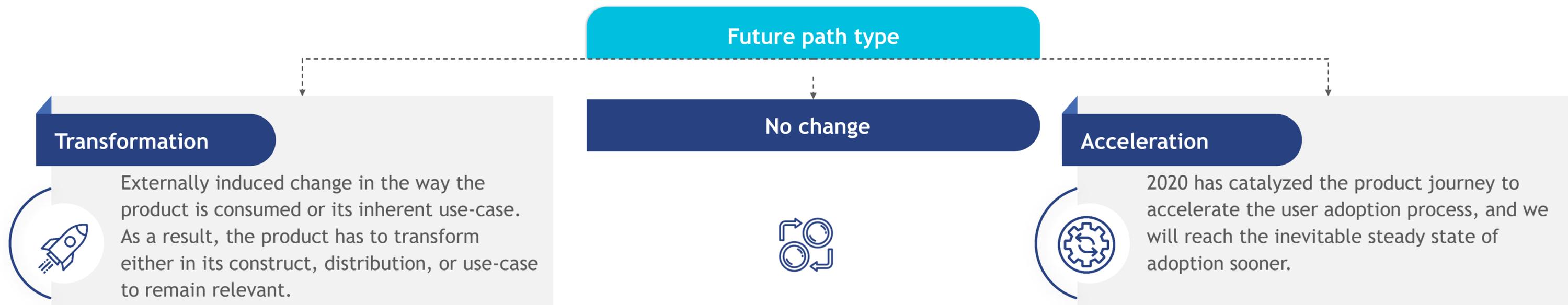
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A background image showing a person's hands interacting with a smartphone on a table. The person is also holding a yellow card, possibly a credit or debit card, near the phone. The image is partially obscured by a white diagonal shape on the left and a blue and orange graphic element on the right.

Section 3

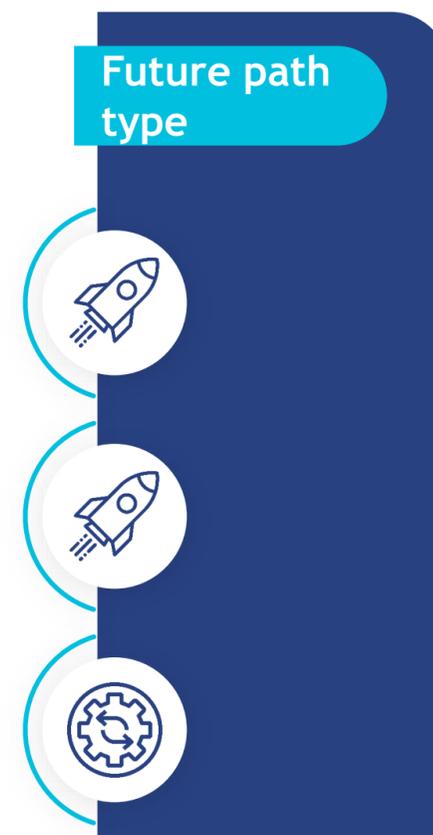
Forecast for the road ahead

Digital pathways offer a hopeful sign in India's payments landscape (1/2)



1 Contactless payments

- **Unlocking a new user base will be critical to UPI's trajectory of growth.** 120 million⁷ domestic migrant workers in India, who contribute to 80% of domestic money remittances, are a vital consumer segment that UPI will need to target. WhatsApp's entry into UPI with its base of 400+ million users will be a driving force to circumvent challenges around the digital readiness of such new user bases. However, the market cap of 30% and weak economics of the UPI model will hinder innovation from fintechs.
- **Assisted usage of bill payments will be critical to increase the adoption of BBPS.** India witnesses 7.5 trillion⁷ bill payments annually, of which only 30%⁷ are digitized. Billers can capitalize on this potential by improving access through partner networks for about 120 million¹ low and middle-income households to pay digitally, especially for those who do not possess smartphones and require assisted access to services.
- **USSD is likely to continue its struggle as a square peg in a round hole.** With smartphone penetration slated to increase to 67% and the increasing penetration of assisted agent-driven models, it will be difficult for USSD to find a product-market-fit.



⁷MSC analysis

Digital pathways offer a hopeful sign in India's payments landscape (2/2)

2 Aadhaar-based payments

- **AePS will need to reduce its over-dependence on direct benefit transfers (DBT).** Digitizing rural value chains to enable payments directly to a bank account will be critical for AePS to emerge out of DBT's shadow. High error rates, sometimes up to 62%, have been a thorn for AePS. Thus, a reinforced technology stack (especially from the banking partners) to handle usage spikes and resolve grievances will be essential to the story of AePS's growth.
- **Similar to USSD, BAP finds itself going against the natural flow of increasing smartphone penetration.** A biometric device costs ~INR 2,000 (~USD 27), which can be prohibitive for merchants in rural areas. Thus, financing options, subsidies, or pay-as-you-go models will be critical to driving adoption among merchants. Reduction in transaction turnaround time will also be core to driving usage.

3 Card-based payments and remittances

- **Debit cards will ride the e-commerce wave to target the next half billion users.** PoS devices that accept cards are prohibitively expensive for small merchants, restricting card acceptance to e-commerce platforms. Rationalizing MDR on various debit cards will also help RuPay to compete with other card networks and play a key role in debit card ownership in India.
- **The rise in disposable income and increasing creditworthiness of customers will drive credit cards in India.** With only 10% of credit bureau-appraised consumers owning credit cards, the time is ripe for fintechs with innovative underwriting models to disrupt and democratize the credit card industry.
- **Remittances will ride DMT and B2B waves.** An increase in working adults at 916 million and growing with a CAGR of 2% will drive remittances. However, established remittance channels will run the risk of cannibalization from UPI, especially for low to medium value remittances up to INR 10,000 (~USD 135)⁸.

Future path type



Future path type



⁸MSC analysis

What do the financial lives of our three persona look like in 2021?

User outlook

Products that will be key to their lives in the near-future

Critical triggers or drivers for adoption

Barrier(s) to usage

Punyata



- Assisted onboarding through agent-driven models
- Low-CAPEX models that help private players to provide innovative solutions
- Lack of smartphone ownership and weak internet connectivity
- Lack of trust in digital transactions
- Lack of use-case for digital payments in cash-based rural economy

Madhura



- Increasing smartphone ownership and digital readiness
- Mass acceptance and demand for digital payments
- Availability of ATMs for withdrawal
- Lack of digital readiness for self-initiated digital transactions
- Limited funds to sample the whole spectrum of payment use-cases

Selective remitter



- Convenience of digital payments
- Superior UX as well as attractive incentives
- No apparent barrier

Section 4
Annexes



Abbreviations and acronyms

APBS	<i>Aadhaar</i> Payment Bridge System
AePS	<i>Aadhaar</i> -enabled Payment System
AePS OFFUS	Intra-bank AePS transaction
AePS ONUS	Inter-bank AePS transaction
ATM	Automated Teller Machine
BAP	BHIM <i>Aadhaar</i> Pay
BBPS	Bharat Bill Payment System
BCs	Business Correspondent agents
BHIM	Bharat Interface for Money
BOY	Beginning of the year
CAGR	Compound annual growth rate
CAPEX	Capital expenditure
DBT	Direct Benefit Transfer
DMT	Domestic Money Transfer
EOY	End of the year
G2P	Government to person
H1	The first half of a calendar year (January to June)
H2	The second half of a calendar year (August to December)
IMPS	Immediate Payment Service

INR	Indian Rupee
LMI	Low-and middle-income
MDR	Merchant discount rate
MoM	Month on Month
MSME	Micro, small, and medium enterprises
NEFT	National Electronic Funds Transfer
P2M	Person to merchant
P2P	Peer to peer
PIDF	Payments Infrastructure Development Fund
PMJDY	Pradhan Mantri Jan Dhan Yojana
PoS	Point of sale
PPI	Pre-paid Payment Instruments
QoQ	Quarter on Quarter
RTGS	Real-time Gross Settlement
TAM	Total addressable market
TAT	Turn-around time
UPI	Unified Payment Interface
USSD	Unstructured Supplementary Service Data
YoY	Year-on-year

Annex 1: NPCI's key payments systems and channels

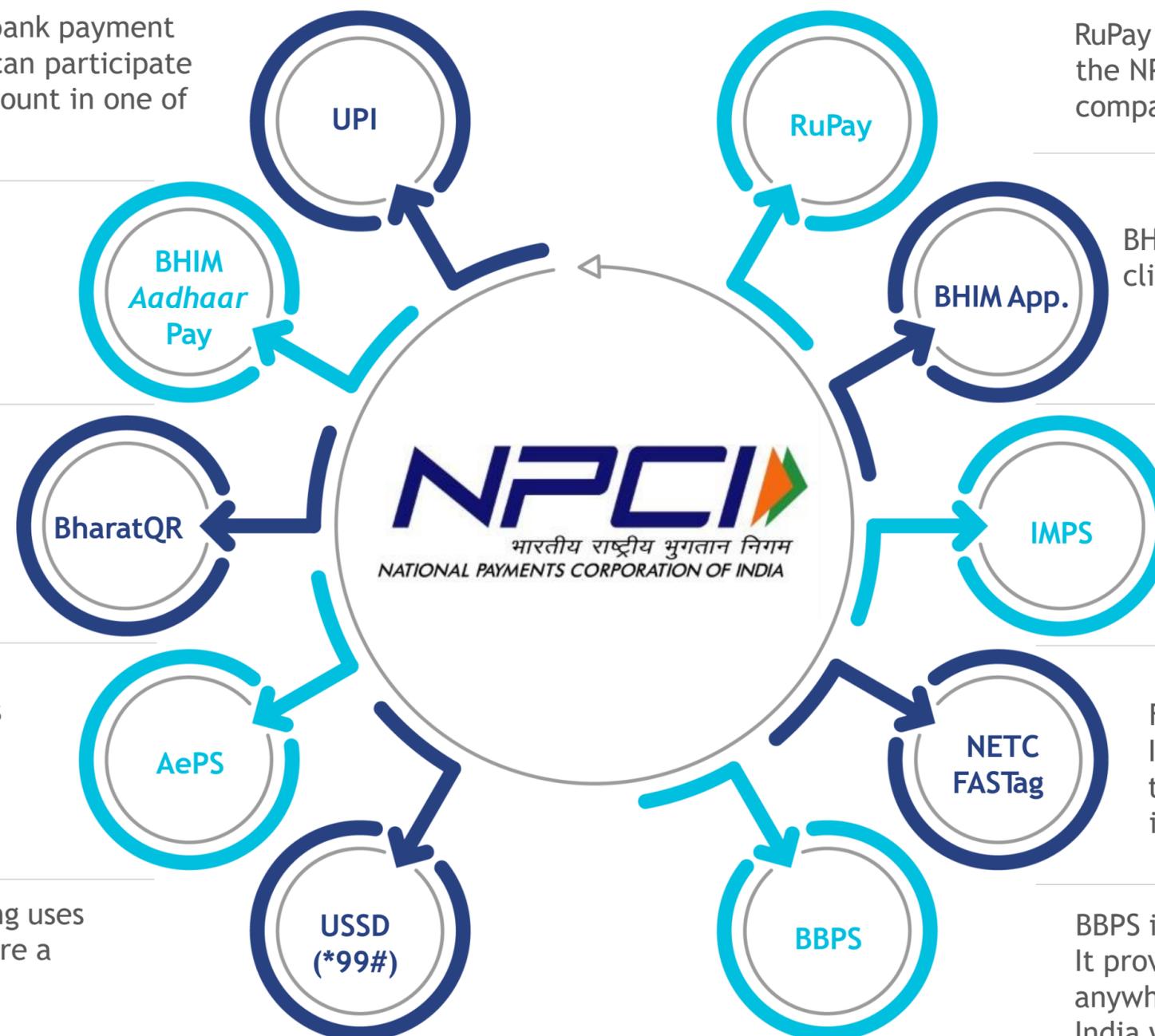
Unified Payments Interface is a real-time interbank payment system to send and receive money. Consumers can participate in P2P transfer as long as they both have an account in one of the registered banks.

BHIM Aadhaar Pay is an Aadhaar or biometric-based payments interface. It enables real-time payments to merchants through biometric authentication by using the Aadhaar number of the customer.

BharatQR is a common QR code-based payment system developed by the NPCI for the ease of payments and interoperability.

AePS is an interoperable instrument that allows banking transactions at PoS (MicroATMs) through business correspondents of any bank by using Aadhaar or biometric authentication.

The USSD channel service for UPI mobile banking uses quick codes for transactions and does not require a smartphone or access to the internet.



RuPay is a domestic card product of India developed by the NPCI. The card has a magnetic stripe for backward compatibility and an EMV chip.

BHIM is a smartphone mobile application that acts as client software for the Unified Payments Interface.

Immediate Payment Service is a real-time interbank payment system, widely used for money transfer in India.

FASTag is a device that employs Radio Frequency Identification (RFID) technology to enable direct toll payments while a vehicle is in motion.

BBPS is a one-stop ecosystem for the payment of all f. It provides an interoperable and accessible "anytime anywhere" bill payment service to all customers across India with certainty, reliability, and safety.

The National Payments Corporation of India (NPCI) is an umbrella organization that operates retail payments and settlement systems in India. It was established in 2008 by the Reserve Bank of India (RBI) and the Indian Banks' Association (IBA) to create a robust payment and settlement infrastructure in India.

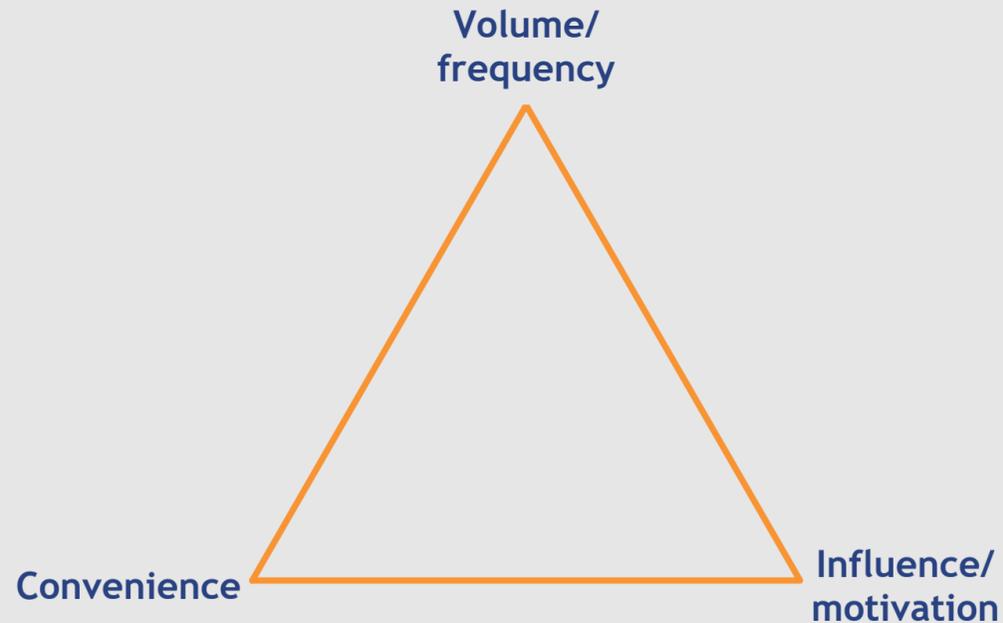
Annex 2: Status of India's payments infrastructure

#	Parameters	As on	Data (# million)
1	PMJDY beneficiaries	December, 2020	415.83
2	Aadhaar assigned	December, 2020	1,370.51
3	Smartphone users	January, 2020	500.00
	Active internet users	May, 2020	574.00
4	Rural internet users	May, 2020	264.00
	Urban internet users	May, 2020	309.00
	Cards	November, 2020	952.82
5	Credit cards	November, 2020	60.11
	Debit cards	November, 2020	892.70
6	RuPay cards	August, 2020	300.15
	Pre-paid Payment Instruments (PPIs)	November, 2020	2,044.32
7	Wallets	November, 2020	1,885.77
	Cards	November, 2020	158.55
	ATMs	November, 2020	0.23
8	Bank-owned ATMs	November, 2020	0.21
	White-label ATMs	November, 2020	0.02
9	Micro ATMs	November, 2020	0.36
10	POS	November, 2020	5.42
11	BHIM Aadhaar Pay POS	August, 2020	1.15
12	Bharat QR	November, 2020	3.05
	Banking outlets in villages	March, 2020	0.60
13	Branches	March, 2020	0.05
	BC agents	March, 2020	0.54

Annex 3: FSS framework adapted for use of digital financial services

The [Financial Services Space](#) (FSS) framework has been adapted for use of digital financial services (DFS) or fintech apps. The framework depicts an environment that is conducive for a woman to conduct digital transactions on her own. The threshold of the three dimensions represent the minimum sufficient conditions for a woman to start using DFS and sustain the engagement and usage. However, if a woman crosses any of the thresholds, she can be set on the path toward sustained use of DFS.

Threshold volume- The woman should use digital financial services or fintech apps regularly along with a regular flow of cash in her account.



Threshold convenience- The woman should feel comfortable and safe to use digital financial services and in the process, start to appreciate the convenience brought about by it.

Threshold influence- The woman should have sufficient incentives (people or livelihood) that motivate her to start using digital financial services and negate distrust of DFS (if any).

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Our impact so far

550+ clients

>850 publications

Assisted development of digital G2P services used by **875 million+** people

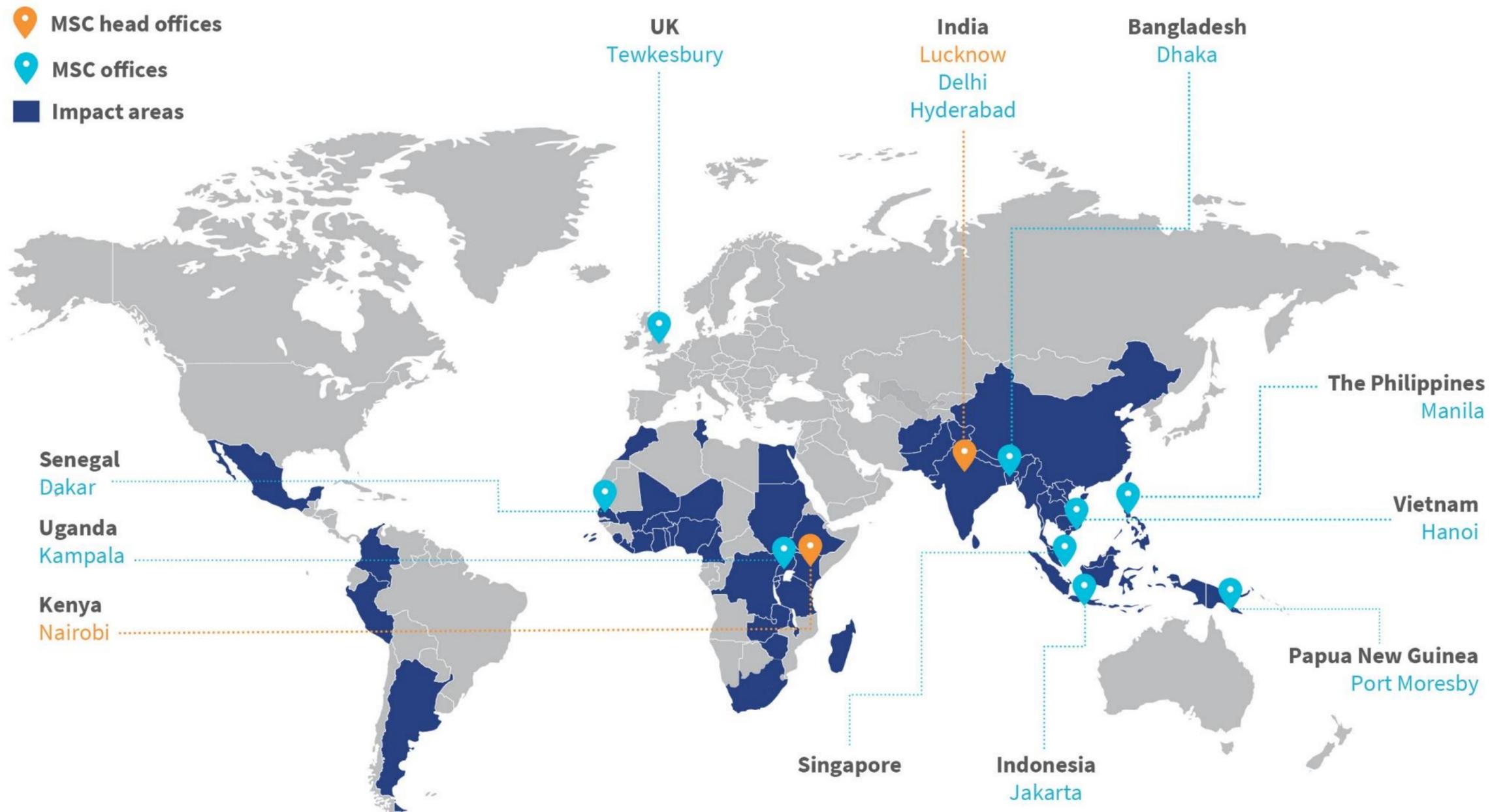
Implemented **>850 DFS projects**

Developed **275+ FI products** and channels now used by **55 million+** people

Trained **9,000+** leading FI specialists globally

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