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2020 India **Mobile Payments** Market Report

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Executive summary

India's push toward cashless payments accelerated in 2019. Mobile payments that bypass card rails rose 163% to \$286 billion in 2019. Point-of-sale transactions completed using debit and credit cards, including online and in-app transactions, grew 24% to \$204 billion.

S&P Global Market Intelligence estimates that card and mobile payments represented only 21% of \$781 billion in retail purchases at brick-and-mortar stores in 2019. While a contraction in economic activity amid lockdowns due to the coronavirus outbreak will adversely impact cashless payments, mobile payments should be relatively resilient. Their uptake will accelerate due to concerns over usage of cash and plastic that interacts with potentially virus-infected surfaces.

Popular mobile payments services in India are overlaid on Unified Payments Interface, a banking industry-sponsored protocol that lets people link their bank accounts with their phone numbers through payment apps.

India processed the highest number of real-time transactions in 2019, according to our review of instant payments in five large economies. But the country's real-time transactions per capita of 10 in 2019 are the lowest in the group.

Consumer apps provided by Google and Walmart-owned PhonePe have tightened their grip on UPI payments, but Alibaba-backed Paytm made greater progress in building a bank-like platform.

Growing losses make Paytm and PhonePe dependent on investor support. Their publicly traded rivals, Google and Amazon, have deep pockets and can subsidize losses. The industry is bracing for greater competition with the entry of Facebook's WhatsApp.

Fintechs have already gained control over payment relationships. As banks are expected to reduce their exposure to credit cards and personal loans, fintechs could double down on their financial services bets.

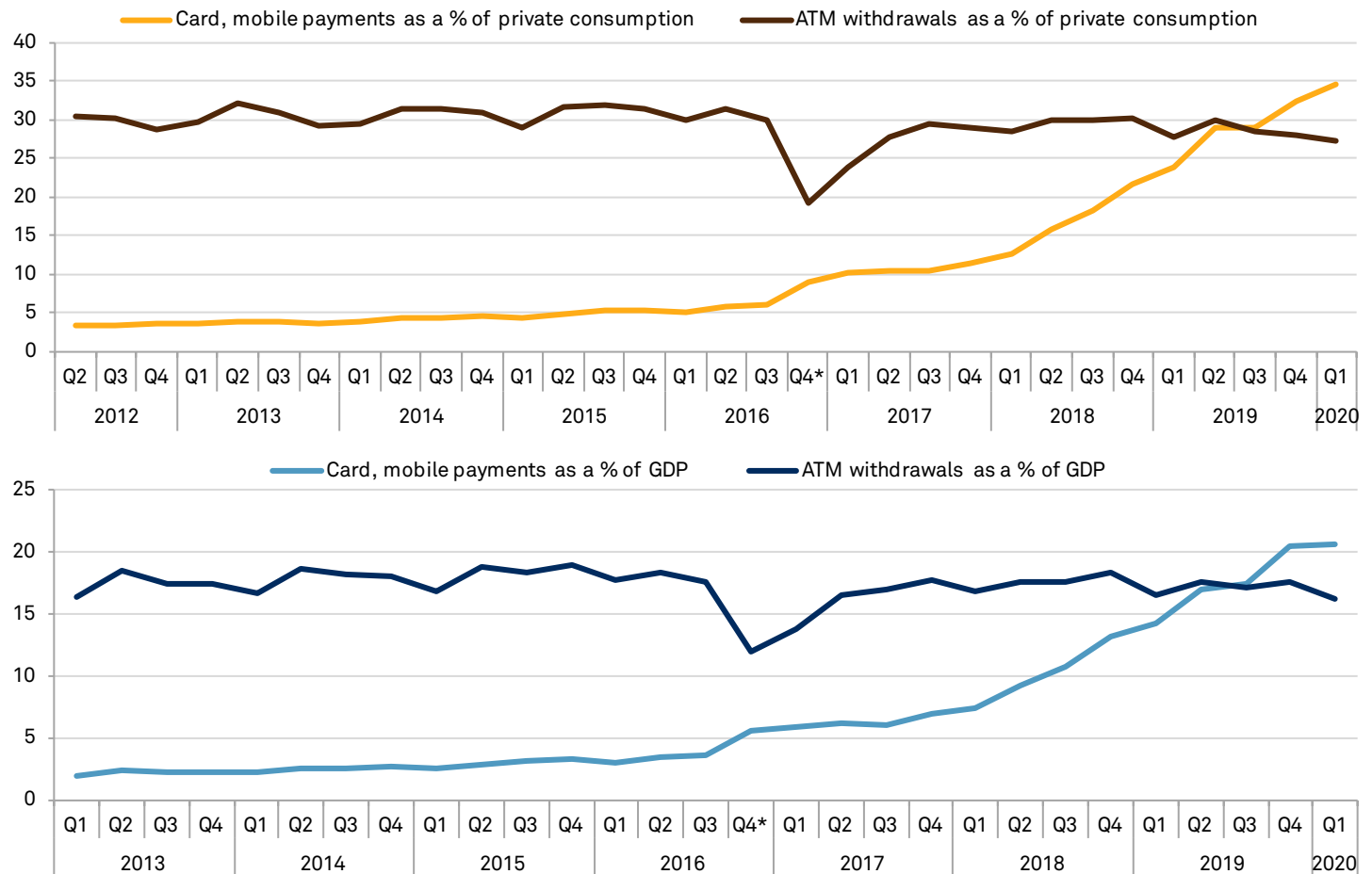
Market overview, size and international comparisons

Rise and rise of cashless payments

India's push toward cashless payments accelerated in 2019, as card and mobile payments as a percentage of GDP rose to 20% in the quarter ended Dec. 31, 2019, from 13% in the same quarter of 2018.

Card, mobile payments exceeded ATM withdrawals for 1st time in 2019

Periods represent calendar quarters



Data compiled June 1, 2020.

* On Nov. 8, 2016, the Indian government announced the demonetization of all 500-rupee and 1,000-rupee bank notes.

Private consumption reflects the private final consumption expenditure estimated by the government of India, which includes the expenditure incurred on final consumption of goods and services by the resident households and nonprofit institutions serving households.

Card payments represent point-of-sale transactions completed using debit and credit cards, and include online transactions.

Mobile payments represent transactions processed through stored-value wallets and Unified Payments Interface, a real-time interbank payment network.

ATM withdrawals include money withdrawn through micro ATMs and point-of-sale terminals at merchant establishments for November and December in 2019, and for the first quarter of 2020. For the prior periods, it represents only debit and credit card withdrawals at ATMs.

Sources: Reserve Bank of India; The National Statistical Office; National Payments Corp. of India

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Cashless payments, especially mobile payments, got their initial major boost following a government decision to withdraw 500-rupee and 1,000-rupee notes from circulation in November 2016. The temporary currency shortage in the aftermath of demonetization nudged the public toward cashless payment options. Even as cash came back into the system in the following years, people continued to use mobile and card payments.

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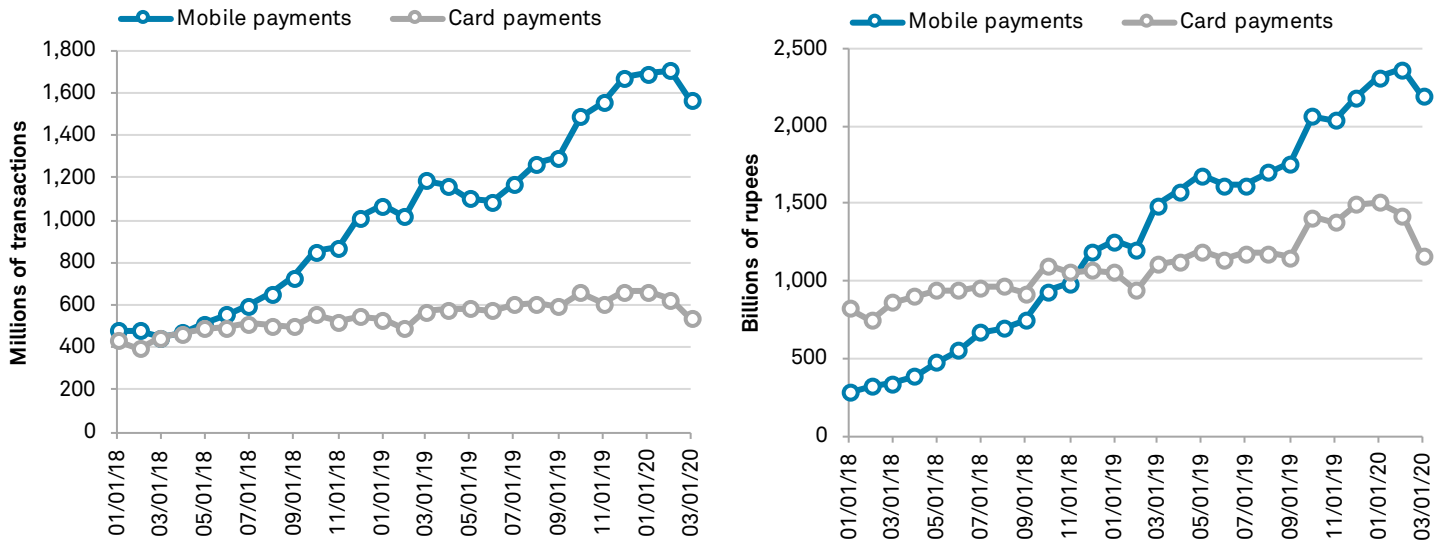
In a sign that demand for cash has been slowing in more recent times, ATM withdrawals for the first time came in lower than card and mobile payments based on value in 2019. And for each ATM withdrawal, Indians made more than two transactions using either cards or mobile phones.

Mobile payments competing with cards

Payments handled by mobile devices are soaring in India, driven by the popularity of bank accounts as an in-app payment method. Unlike Apple Pay or other mobile wallets that allow customers to make electronic transactions using a linked debit or credit card, popular payment apps in India promote an alternative to cards.

Mobile payments initiated by payment apps comprising account-to-account transfers and payments made from stored-value accounts rose 163% to \$287 billion in 2019. By comparison, point-of-sale transactions completed using debit and credit cards, including online and in apps, rose 24% to \$204 billion. While a large number of transactions handled by payment apps include peer-to-peer transactions, mobile phone account recharges and utility bills, mobile payments are increasingly becoming a popular payment choice for retail transactions at the point of sale and online.

Mobile payments growing faster than cards in India



Data compiled June 1, 2020.

Card payments represent point-of-sale transactions completed using debit and credit cards, and include online transactions.

Mobile payments represent transactions processed through stored-value wallets and Unified Payments Interface, a real-time interbank payment network.

Sources: Reserve Bank of India; National Payments Corp. of India

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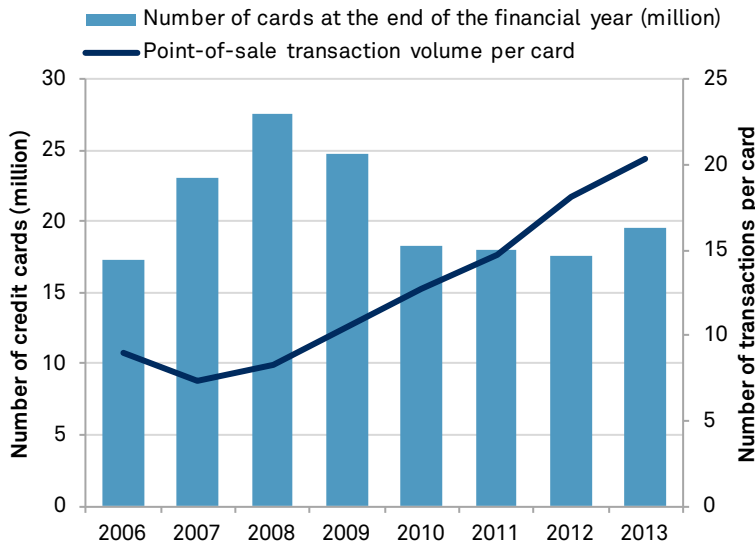
For cashless payments in India, there are plenty of person-to-merchant transactions to chase. Total retail expenditure online and offline at the point of sale exceeded \$806 billion in 2019, according to 451 Research, which is part of S&P Global Market Intelligence.

Much of the growth potential exists in the form of offline transactions, with in-store sales accounting for more than 96% of total retail sales in 2019. We estimate that cards and instant interbank transfers facilitated by mobile payment apps represented only 21% of \$781 billion in in-store transactions in 2019 as cash remains the primary payment method for the majority of merchant payments.

Coronavirus crisis to boost mobile payments

High growth rates in cashless payments seen in recent years are, however, unlikely to repeat amid an economic slowdown due to the novel coronavirus pandemic. But we expect mobile payments to be more resilient and gain a bigger lead over card payments.

Indian banks shrunk credit cards following 2008 financial crisis, but usage frequency rose steadily
 Periods represent financial years



Data compiled March 30, 2020.
 Number of credit cards issued by banks do not include those withdrawn or blocked.
 Card payments represent point-of-sale transactions completed using debit and credit cards, and include online transactions.
 Source: Reserve Bank of India
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As forecasts of a global recession abound, the Indian economy is expected to suffer from the pandemic and nationwide lockdown. S&P Global Ratings in late May slashed its gross domestic product growth forecast for the fiscal year ending in March 2021, to a contraction of 5.0% from an earlier growth projection of 1.8%. A decline in private consumption expenditure could have some adverse impact on cashless payments this year.

If history is any guide, credit card transactions could be at the highest risk among retail payments. Between fiscal 2008 and fiscal 2010, credit card issuers slashed about one-third of accounts, closing 10 million credit cards on a net basis. Although credit card transactions rebounded in fiscal 2011 due to greater frequency in usage, banks seemed reluctant to issue new credit cards through fiscal 2014 and have since nearly tripled the number of accounts to 55.3 million at the end of December 2019.

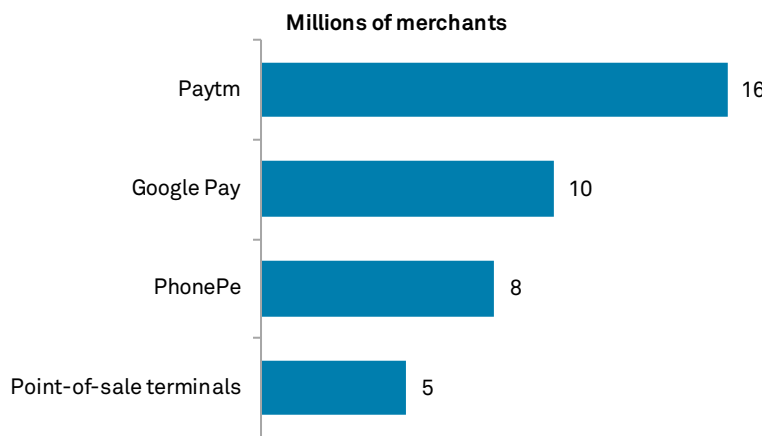
Debit card issuance, however, remained strong in the years following the financial crisis and got a further push from a government-driven financial inclusion program launched in 2014 under which banks onboarded millions of low-income individuals and issued 291 million debit cards as of May 20, 2020. While the share of debit cards in India's point-of-sale and online expenditure gradually rose over the years, cash withdrawals at ATMs remain the bigger use case for debit cardholders.

Despite accounting for only 6% of total cards outstanding, credit cards currently represent about 44% of total POS and online transaction value. A potential slowdown in credit card issuance could therefore further widen the divergence between card and mobile payments.

The removal of merchant discount rates on card and mobile payment transactions handled by banking consortium National Payments Corp. of India and the requirement for large businesses to offer those cashless payment options to customers, effective Jan. 1, will likely further boost the popularity of cashless payments.

Social distancing measures and concerns around using cash will likely nudge merchants to promote contactless payments. The widespread prevalence of low-cost, Quick Response codes could further strengthen the dominance of mobile payments that bypass card rails.

Payment companies blanketing India with QR codes



Data compiled March 11, 2020.
 Figures for PhonePe and Paytm were disclosed in December 2019 and February 2020, respectively.
 Google Pay's figure reflects more than 10 million Google Pay for Business app downloads on Android phones.
 Figures for point-of-sale terminals are as of December 2019.
 Sources: Company disclosures; Reserve Bank of India
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For example, Paytm alone counts partnerships with 16 million merchant stores, which support QR-code payments. In comparison, card-enabled point-of-sale terminals stood at only 5 million as of December 2019. Small merchant stores are increasingly adopting standard QR codes that are compatible with solutions offered by all popular payment companies.

The plumbing behind mobile payments

Popular mobile payments services in India are overlaid on Unified Payments Interface, a banking industry-sponsored protocol that allows people to link their bank accounts with their phone numbers through apps provided by payments service providers and to make instant fund transfers between bank accounts.

UPI processed nearly 11 billion transactions in 2019, making India a rare large market where consumers increasingly use account-to-account transfers to send money to other individuals and pay for goods and services. Based on a monthly rate of \$31 billion in February, UPI payments are already clocking more than \$373 billion in annualized payment value in 2020. India's mobile payment users typically bypass card networks and have little need to top up closed-loop electronic wallets.

The UPI scheme owes its swift rise in part to its openness to nonbank participation. It allows nonbanks to build primary interfaces for people to initiate transactions directly from their bank accounts. While nonbanks do not have direct access to the UPI back-end system and must team up with sponsor banks, they can control payment relationships with customers.

UPI lends itself to payments in stores and online, supports push and pull transactions, and enables payments instantly and around the clock. It powers multiple use cases, including the ability to access a user's bank account balance, and interoperates with other payment systems. National Payments Corp. of India, the operator of the UPI network, has also built a centralized payment system that brings billers of all types and payment aggregators under its umbrella. By working with licensed entities that provide access to the Bharat Bill Payment System platform, payment apps such as Google Pay in India allow their customers to access and pay their telecom, gas, electricity and insurance bills.

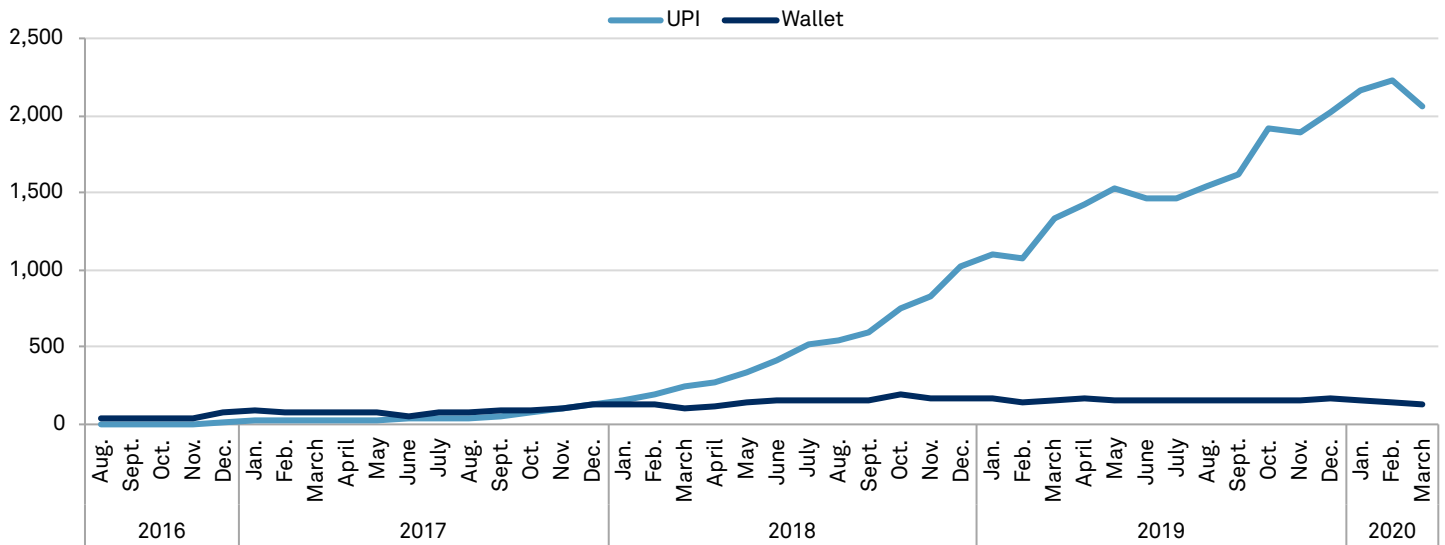
Wallets becoming obsolete

The earliest mobile payment apps like Paytm began by offering stored-value accounts that require users to load funds into their wallets before they can transfer money to other registered users or purchase goods and services. The launch of the UPI infrastructure in 2016 and enhanced regulation for prepaid instrument operators have led to a slowdown in the growth of transactions using stored-value wallets.

Users of one digital wallet cannot transact with users of another wallet and do not earn interest on money kept in these accounts. But UPI enables account-to-account transfers, and customers get to keep the money in their bank accounts where it can earn interest. Costs related to more stringent know-your-customer compliance requirements led wallet operators to either shut down or shift focus to UPI.

As mobile payment users are shifting away from wallets and toward UPI, banks are not in danger of losing access to low-cost retail deposits. UPI payments are account-to-account transfers, and money remains in bank deposits.

UPI dominating mobile payments



Data compiled June 1, 2020.

Mobile payments represent transactions processed through stored-value wallets and Unified Payments Interface, a real-time interbank payment network.

Sources: S&P Global Market Intelligence; Reserve Bank of India; National Payments Corp. of India

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The UPI system has made banks a relevant cog in the machinery of digital payments and averted a China-like situation where the majority of mobile transactions occur through a pair of apps that offer stored-value wallets. In China, Ant Financial’s Alipay and Tencent Holdings Ltd.’s WeChat Pay have cornered mobile payments, causing deposit leakage from banks.

Real-time rails making India a mobile payments powerhouse

Interbank pipes that funnel money from customers’ bank accounts directly to those of recipients are gaining popularity around the world. Several countries in recent years have built real-time payment systems to bring down transaction costs, promote interoperability and reduce working capital needs of businesses through the instant collection of payments.

The implementation of overlay services that allow users to address payments to a registered mobile number and other easy-to-remember payment aliases has become a catalyst for the uptake in mobile payments. Consumers can transfer money without disclosing sensitive details such as bank account numbers.

Building in mechanisms to support “request to pay” messages has allowed some of the schemes to support merchant ecosystems. Users can pre-authorize direct debits and recurring payments so that merchants can pull money directly from their accounts. In Asian countries, real-time payments use low-cost, analog conveyance channels such as printed QR codes to pass on coded information to digital devices. As transactions bypass card networks and use a banking infrastructure, payment costs for bank-to-bank transfers tend to be lower.

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Comparison of real-time payments across select countries

		India	U.K.	Australia	Thailand	Singapore	Malaysia
Macro indicators	GDP in 2019 (\$B)	2,913	2,829	1,398	544	372	365
	Population in 2019 (million)	1,366	68	25	70	6	32
About the faster payments central infrastructure	Name of the instant payment service	Immediate Payment Service	Faster Payments	New Payments Platform	PromptPay	FAST	Real-time Retail Payments Platform
	Year of launch	2010	2008	2018	2017	2014	2019
	Technology provider	NPCI ³	Vocalink	SWIFT	Vocalink	Vocalink	ACI Worldwide
Real-time payment transactions	Number of transactions in 2019 (million) ¹	13,171	2,400	275	2,563	93	NA
	Growth rate in 2019 (%)	149	20	240	147	55	NA
	Number of transactions per inhabitant	10	36	11	37	16	NA
Overlay services built on top of the RTP system to facilitate proxy-based payments	Name of the overlay service ²	Unified Payments Interface	PayM	Osko	PromptPay	PayNow	DuitNow
	Year of launch	2016	2014	2018	2017	2017	2019
Proxy addresses to move money	Mobile number	●	●	●	●	●	●
	National ID	●			●	●	●
	Corporate registration ID			●	●	●	●
	Supports QR codes	●		●	●	●	●
Fintech participation	Direct connection to settlement system		●			In review	
	Nonbanks can work with sponsor banks	●	●	●	●	●	●
	Notable nonbanks leveraging RTPs	Google, Amazon, Facebook's WhatsApp, PhonePe	Transferwise, Ebury Partners, Equals Group	Monoova, Azupay, Earnd, Block8	TrueMoney, mPay	Google Pay, Transferwise	Grab, Shopee, Touch 'n Go, Fave

Data compiled March 11, 2020.

NA = not available

¹ For India, Australia and Thailand, volume of payments reflect all transactions made using the RTP infrastructure and the overlay services built on top of them. It is not clear whether volume of payments reported for Faster Payments in the U.K. and FAST in Singapore include transactions using their overlay services.

² Overlay services allow people to send money using the recipient's mobile number and other proxy addresses.

³ National Payments Corp. of India is a banking consortium that operates retail payment systems in India, including IMPS and UPI.

Sources: S&P Global Market Intelligence; central banks; real-time payment system operators; proprietary estimates

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India ranks favorably among countries that built instant payment schemes, according to our review of real-time payment volumes in five countries, processing at least 5x more transactions than the second-largest market. Still, there is plenty of room for instant payments to grow in India as the country's real-time transactions per capita of 10 in 2019 are the lowest in the group. Only in the third year of launch, Thailand's PromptPay processed 37 transactions per capita in 2019.

What makes India unique is that it brought nonbanks into the fold in a more inclusive way and made them primary drivers of mobile payments. While nearly all countries in the group allow nonbanks to move money on the real-time payment system by connecting with a financial institution, the participation of third parties is usually limited as they can only facilitate credit transfers from the banks with which they have integrated. Connecting with multiple financial institutions is, however, cumbersome and may increase costs for the third party.

Nonbanks in India need to connect with just one sponsor bank to get access to UPI's central API to move money through all participating banks on the system. For example, Google Pay in India can initiate a request to move money instantly to and from any UPI participating bank. In Singapore, however, Google Pay can initiate payments for customers of only three banks with which it has made integrations. This openness has made India's payment system a favorite destination for some of the largest technology companies in the world.

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Decoupling the payment address from the funding source is another unique aspect of India's real-time payments. A UPI ID relates an individual or merchant to his or her bank account and eliminates the need to share bank account details while initiating a request to send or collect money. Users can easily reassign the payments address to another bank account any time without the hassle of informing their transacting parties, and thus UPI redefines customer relationships with banks.

Further, a UPI app can serve as a single user interface for all of an individual's bank accounts, eliminating the need to download multiple banking apps. With payment apps becoming new distribution platforms for upselling lending and insurance services, India's real-time payment system is likely to become the new rails for driving other financial services.

Market leaders and trends

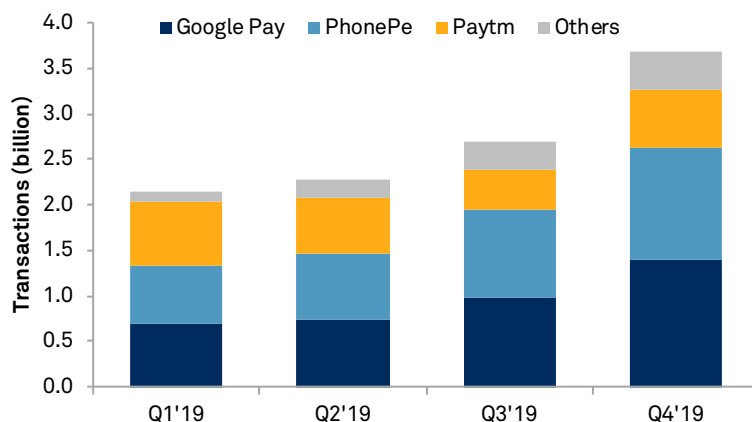
Large technology companies offering payments remain focused on building a two-sided network of consumers and merchants, driving user engagement by expanding in-app features and offering cashback rewards.

Google Pay and PhonePe kept their lead as the most popular UPI payment apps, based on the number of UPI transactions completed through their apps in 2019, according to our estimates. Together, the two apps handled over 7 billion transactions, representing more than two-thirds of UPI transactions in 2019. In contrast, Paytm's UPI transactions volumes were underwhelming, although the company holds a substantial share in wallets. For PhonePe, wallet transactions are insignificant, whereas Google Pay does not offer non-UPI payment methods.

Amazon Pay, which entered the UPI space in mid-2019, has yet to match the popularity of the three UPI incumbents, but Amazon is pouring in millions of dollars to scale up its payment businesses. Facebook's WhatsApp, a popular messaging app with more than 400 million users in India, according to media reports, is scaling up its payments feature. We expect the five companies to dominate the mobile payments landscape in India.

Google Pay and Walmart-owned PhonePe leading UPI payments

Periods shown are calendar quarters



Data compiled Feb. 17, 2020.

UPI payments represent transactions processed through Unified Payments Interface, a real-time interbank payment network developed by a bank-led group that enables initiation and collection of payments.

Sources: The Economic Times; National Payments Corp. of India; proprietary estimates.

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Comparison of select large mobile payment companies

Company name (dba)	Parent	Payments volume
One 97 Communications Ltd. (Paytm) ¹	NA*	NA
Google India Digital Services Pvt. Ltd. (Google Pay)	Google	\$110 billion in annualized transaction value as of September 2019
PhonePe Pvt. Ltd.	Walmart	\$180 billion in annualized transaction value as of January 2020
Amazon Pay (India) Pvt Ltd.	Amazon	NA
WhatsApp Inc.	Facebook	WhatsApp offers payments to limited users and will gradually scale up the UPI feature across its userbase.

Data compiled March 16, 2020.

DBA = doing business as

NA = not available, or not applicable if marked by asterisk

¹ One 97 Communications Ltd. holds a 49% stake in Paytm Payments Bank Ltd., which houses Paytm's wallet and payments bank business. Vijay Shekhar Sharma, the founder of One 97, holds the remaining 51% in Paytm Payments Bank. The wallet business was spun off as a separate company in 2016 after Paytm secured a limited-purpose banking license in 2015.

Sources: Company disclosures; The Economic Times; Business Standard

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Payment apps turning into everyday apps

Consumer-facing payment providers tethered to UPI, in theory, can target the entire banked population without incurring any onboarding costs related to the know-your-customer process. With the ability to provide a menu of use cases powered by UPI and interoperate with other retail payment systems, UPI apps offer a standardized set of payment features.

UPI-enabled payment apps allow users to request money from others, make QR code payments, check bank account balances and recharge prepaid mobile accounts. Users can pay electricity, landline, broadband, gas and other bills.

Google, PhonePe, Paytm and Amazon Pay are seeking to become an integral part of customers' daily lives by extending mobile payments to taxi-hailing, shopping and other cases of personal consumption. Payment app users can buy electronic goods, groceries and clothing; order food; and book hotel rooms and bus and airline tickets. Customers can access instant credit, buy insurance policies and invest in gold and mutual funds through the apps.

Paytm, PhonePe and Amazon Pay offer a variety of payment methods, including cards and stored-value wallets. Google Pay plans to introduce a tokenized cards feature to support debit and credit card payments in India.

Payment apps turning into super apps

In-app features		Paytm	PhonePe	Google Pay	Amazon Pay in Amazon.in app
Funding methods	Bank account using UPI	●	●	●	●
	Stored value wallet	●	●		●
	Debit, credit card	●	●	● ¹	●
Payment features	Send money	●	●	●	●
	Request money	●	●	●	●
	QR code payments	●	●	●	●
Bill payments	Recharge prepaid mobile phone plan	●	●	●	●
	Pay utility bills	●	●	●	●
	Pay credit card bills, insurance premiums and loan EMIs	●	●	●	
E-commerce, travel	Purchase groceries/merchandise	●	●		●
	Make flight, train, bus or hotel bookings	●	●	●	●
	Book Uber/Ola car rides		●		●
Financial services	Buy gold	●	●	●	●
	Point-of-sale credit	●	●	● ²	●
	Invest in mutual funds	●	●		
	Buy insurance	●	●		●
Other	Chat with contacts		●	●	
	Check account balance	●	●	●	●

Data compiled March 13, 2020.

EMI = equated monthly installment

¹ Google plans to introduce tokenized cards feature to support debit and credit card payments in India.

² Google teamed up with four banks to facilitate pre-approved loans to their customers using its app.

Source: S&P Global Market Intelligence analysis of select mobile payment apps for Android users.

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Cultivating financial services

Payment companies are deepening their presence in financial services.

All four payment apps reviewed by S&P Global Market Intelligence provide an option to buy either gold or jewelry. Investing in gold is a popular savings method for Indians. Customers can buy and redeem digital gold, even in small amounts, with prices linked to rates in the commercial bullion market. They can also take delivery of gold or send e-gift vouchers to others.

Payment companies are facilitating deferred payment options and installment loans in partnership with banks and nonbank financial companies. Some of them even offer options to buy insurance policies and mutual funds within the app.

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Paytm differs from the rest in how it delivers financial services. It has taken a more hands-on approach by pursuing regulatory licenses available for a nonbank, whereas others have courted partnerships with financial institutions.

Although it is conceding the lead in payments, Paytm is steadily building a bank-like platform. Thanks to its limited-purpose banking license, the company has a direct connection to the UPI rails, accepts deposits from the public and issues debit cards. It has brokerage licenses to distribute mutual funds and insurance policies. While the company plans to turn into a small finance bank to make lending, according to The Times of India, it currently leverages partnerships with nonbanking lender Clix Capital and Citibank to offer microloans and a co-branded credit card.

Clever collaboration with banks and nonbanks may help Google and PhonePe steer clear of regulation, but such an approach also involves some limitations and risks. The unit economics of each transaction could be less favorable for companies that need a sponsor bank integration to facilitate UPI transactions as they might share fees earned on transactions with UPI partner banks depending on their commercial agreements.

PhonePe's dependence on Yes Bank to access UPI rails rendered the app largely inoperative for a couple of days in March when RBI imposed a moratorium on deposit withdrawals at the struggling bank. Paytm, through its distribution licenses, is able to offer a wide range of mutual funds and insurance, while mutual fund and insurance policy options on the PhonePe platform are limited. Google's plans to offer preapproved loans in partnership with four banks have yet to materialize.

Amazon appears to hold a middle view. While it has been active in cultivating partnerships with financial institutions and fintechs, it has also secured regulatory licenses to offer a stored-value wallet and to distribute insurance policies. Amazon made greater strides in facilitating unsecured credit to consumers as larger purchases on its e-commerce platform provide lending opportunities. Its partnerships with banks and nonbanks for co-branded cards and point-of-sale credit to consumers could help it improve payments processing costs and earn a share in interchange revenue.

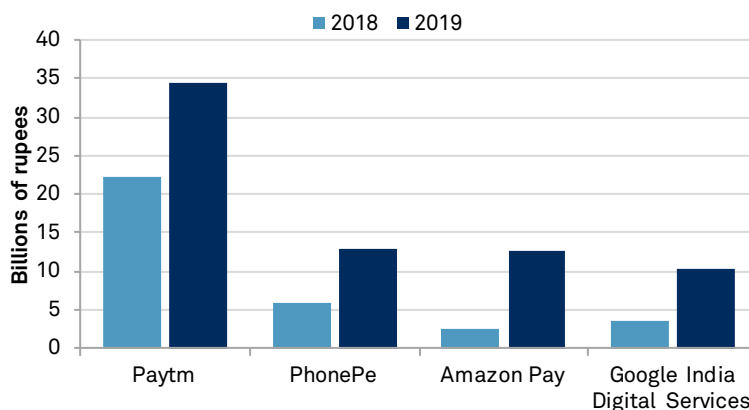
Leading mobile payment companies are also ramping up their investments in India's millions of small merchant establishments. Their efforts include digitizing ledger books of small stores, creating digital fronts for customers to discover them online, using small shops as ATMs to facilitate cash withdrawals for customers and developing visual codes for restaurants that allow customers to scan and browse the menu and pay for their orders. Building networks of neighborhood stores could allow payment fintechs to explore options of providing working capital loans.

Mounting customer acquisition costs, modest revenues

Persuading millions of consumers, neighborhood grocery stores and small merchants to adopt digital payments has so far proved to be costly for Indian payment companies that have actively promoted the adoption of their apps through lucrative cashback perks and discounts.

Interoperability and standardized payment features make it easy for UPI users to shift allegiance swiftly. As the industry remains in the customer acquisition phase, user loyalty does not rest only on superior payment experience, and payment fintechs continue to offer rewards and engage in advertising expenditure to acquire new users and keep existing ones from abandoning their apps.

Promotional costs rising at leading payment companies in India
Periods represent financial years



Data compiled March 17, 2020.

Figures for Paytm represent One 97 Communications Ltd., which holds a 49% stake in Paytm Payments Bank Ltd. Vijay Shekhar Sharma, the founder of One 97, holds the remaining 51% in Paytm Payments Bank, which houses the wallet and payments bank business. The wallet business was hived off as a separate company in 2016 after Paytm secured a limited-purpose banking license.

Figures for PhonePe, Amazon Pay and Google India Digital Services are on a stand-alone basis and do not reflect the results of their affiliates or subsidiaries.

Advertising promotional expenses for Google India Digital Services, which houses Google's UPI payments business, have been adjusted to include the impact of cash rewards reimbursed by its parent.

Sources: S&P Global Market Intelligence; Ministry of Corporate Affairs
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Advertising, marketing and promotional expenses incurred by the four companies for the financial year ended March 31, 2019, exceeded \$1 billion in aggregate. In comparison, revenues were even lower than customer acquisition costs.

Traditional sources of revenues such as transaction fees charged to end parties and interest income on float balances either do not exist or are insignificant for mobile payments in India. Fintechs acquiring consumers and merchants have little control over pricing as they operate in an open-loop system where the prices and operating rules are set by a banking consortium that works at the behest of the government.

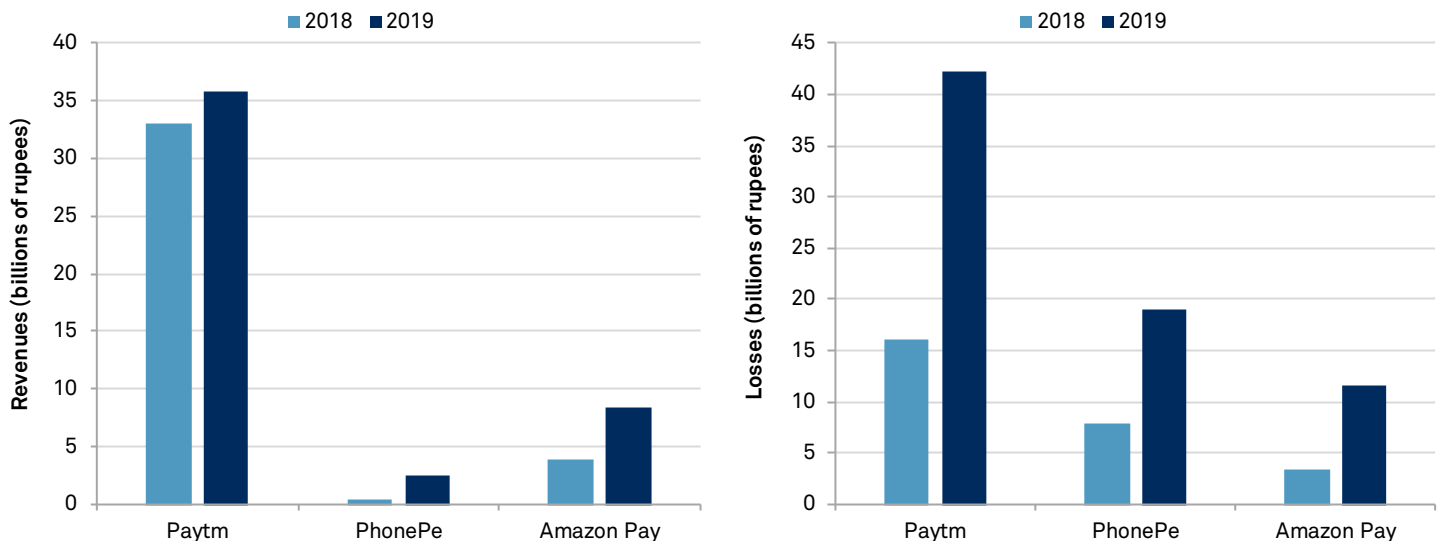
Compared to mobile payments, credit cards are a much more lucrative business in India, largely because merchant discount rates for credit cards are set by card networks such as Visa and Mastercard and are not regulated. Issuing banks in India collect interchange fees, which typically represent 75% to 85% of the merchant discount rate. Additionally, credit card issuers earn interest income when consumers roll over their dues.

Axis Bank, which accounted for only 7% of total debit and credit card transactions in 2019, generated 29 billion rupees in retail card fee revenue alone. In contrast, PhonePe's total revenues stood at only about 2 billion rupees in the fiscal year end March 31, 2019.

The RBI's decision to waive the already low merchant discount rate on UPI payments, effective Jan. 1, has dealt a further setback to the viability of payment fintechs' business models.

Losses at mobile payment companies are swelling every year with the addition of new users and merchants as they do not make enough money from their payments services to cover the marginal costs of providing them.

Losses growing faster than revenues at payment companies in India Periods represent financial years



Data compiled March 17, 2020.

Figures for Paytm represent One 97 Communications Ltd., which holds a 49% stake in Paytm Payments Bank Ltd. Vijay Shekhar Sharma, the founder of One 97, holds the remaining 51% in Paytm Payments Bank, which houses the wallet and payments bank business. The wallet business was hived off as a separate company in 2016 after Paytm secured a limited-purpose banking license.

Figures for PhonePe and Amazon Pay are on a stand-alone basis and do not reflect the results of their affiliates or subsidiaries.

Sources: S&P Global Market Intelligence; Ministry of Corporate Affairs

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The absence of a revenue model and an undiminished appetite to add more capacity to their networks could mean that payment companies will continue to hemorrhage money.

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Fintech startups need investor backing to navigate coronavirus-led crisis

In the absence of a clear path to profitability, consumer-facing technology firms in the Indian payments space will continue to need venture capital support to fuel their expansion plans. The current climate of subdued private funding makes it difficult for startups to get venture capitalists to open up their purses. India saw a 69% month-over-month decline in the dollar amount of private placement transactions in March.

For Amazon and Google, payments are just means to propel their existing e-commerce and advertising businesses. Paytm and PhonePe, on the other hand, are using payments to acquire customers and build digital ecosystems of financial services and commerce from scratch. All four companies are heading in the direction of building an interconnected set of in-app services, providing options to fulfill daily needs in seamless ways. With WhatsApp's expected entry, mobile payments in India will see a drawn-out battle for the top spot.

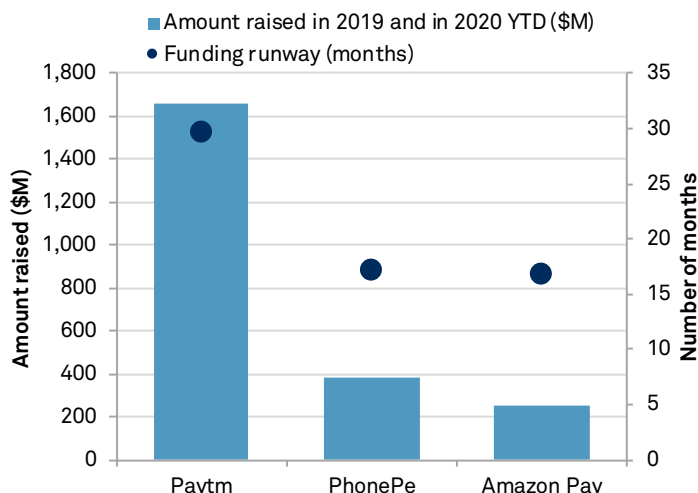
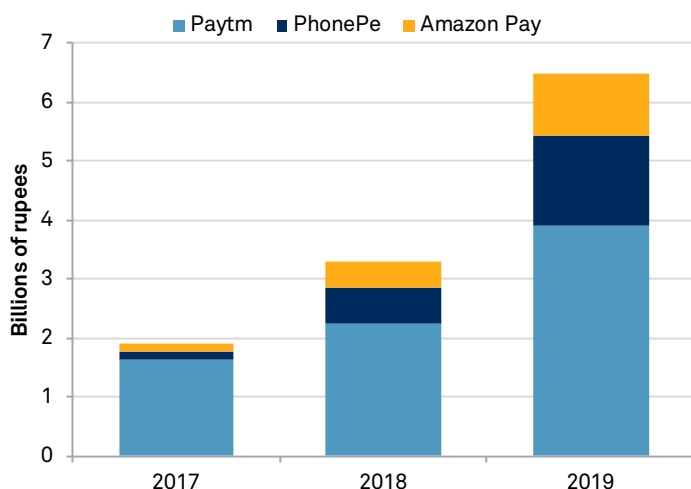
Publicly traded U.S. companies with deep pockets have a greater ability to subsidize losses related to payments businesses, while the payment startups incubated in India will need the backing of their investors to stay in the game. Paytm counts Alibaba, Soft Bank and Berkshire Hathaway as investors. Although PhonePe is ultimately owned by Walmart, it is not closely integrated with Walmart's Flipkart e-commerce business in India and operates independently as a startup with plans to go public in 2023, according to India-based newspaper the Mint.

Measuring leading payment companies' funding runway

How long amount raised since the beginning of 2019 can last based on fiscal 2019 cash burn rate

Monthly cash burn rate rising every year

Periods represent financial years



Data compiled April 30, 2020.

Cash burn is estimated as the sum of cash flows used in operating activities and investments in fixed assets.

Figures for Paytm represent One 97 Communications Ltd., which holds a 49% stake in Paytm Payments Bank Ltd. Vijay Shekhar Sharma, the founder of One 97, holds the remaining 51% in Paytm Payments Bank, which houses the wallet and payments bank business. The wallet business was hived off as a separate company in 2016 after Paytm secured a limited-purpose banking license.

Sources: S&P Global Market Intelligence; Ministry of Corporate Affairs; proprietary estimates

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Paytm and PhonePe collectively received more than \$2 billion since the beginning of 2019, with Paytm alone raising \$1.66 billion. Based on the estimated cash burn rate calculated for the 12-month period ended March 31, 2019, the two companies collectively consume \$78 million a month in running their operations. While Paytm appears to have a slightly longer runway, both face an uncertain future without continued investor backing.

US big tech bets riding on payment rails in India

U.S. technology companies are piggybacking on India's real-time payments infrastructure and building everyday apps to embed themselves into consumer interactions in the world's only billion-person market outside China.

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Alphabet Inc.'s Google Pay and Amazon.com Inc. are making their strongest push yet to become financial intermediaries in India, according to a review of select large markets by S&P Global Market Intelligence. Google has already become one of the largest payment providers in India, with its Google Pay app processing nearly 4 billion transactions in 2019, according to our estimates. Meanwhile, Amazon is offering a far greater breadth of payments and other financial services to engage consumers and merchants in India than in its four largest markets in terms of net sales. With the expected launch of a payments feature in Facebook's WhatsApp, U.S.-based big technology companies are expected to extend their dominance in India.

The U.S. big tech companies are taking steps to build super apps in India, in a marked departure from their bare-bones approach of offering limited payments use cases around the world. Their efforts to link payments with commerce both online and offline bear resemblance to the strategies of two Chinese big technology firms — Tencent Holdings Ltd. and Alibaba. For a super app, payments play a central role in powering a menu of services. While Chinese big tech companies use reloadable stored-value wallets that keep banks out of the loop while conducting transactions, super apps in India leverage banking infrastructure and use bank accounts as the underlying payment instrument.

Google's quest to move money

Google has long been iterating on its payments strategies and expanding in countries by primarily allowing people to digitally store credit cards in Google Pay and make online purchases and contactless payments in stores.

Google Pay offering an expanded feature set in India

	U.S.	Germany	Japan	U.K.	India	Additional notes
Features	Pay in shops	●	●	●	●	
	Pay online or in apps	●	●	●	●	Available in 75 countries
	Pay for travel by train and/or bus ¹	●		●	●	Additionally available in Canada, Russia, Ukraine and Singapore
	Send money to individuals	●				Additionally available in Singapore
	Recharge prepaid mobile phone plan					●
	Pay utility bills, insurance premiums					●
	Buy gold					● ²
Funding, acceptance methods	Debit, credit cards	●	●	●	●	● ³
	Bank accounts	●				● Additionally available in Singapore
	PayPal account	●	●			PayPal can be added as a payment method in Google Pay in 24 countries.
	NFC-enabled payments	●	●	●	●	● ³
	QR code payments					● Google's spot codes in India allow users to see the menu, order and pay in restaurants, coffee shops and stores.
Partnerships	Number of supporting banks/card issuers/payment services	2,317	21	119	36	144
	Notable bank partners (non-card integrations)	Citigroup ⁴				Axis, HDFC, ICICI, SBI ⁵ OCBC, DBS, Standard Chartered are bank partners in Singapore ⁶
	Notable fintech partners	PayPal, TransferWise	PayPal, VIMpay, TransferWise	TransferWise, Curve ⁷	Pine Labs, Innoviti ⁸	TransferWise users can use Google Pay in at least 17 countries.

Data compiled Feb. 27, 2020.

¹ Google Pay can be used to pay at certain public transit stations with a supported debit or credit card saved to the phone. In India, Google Pay users can book train tickets using a bank account as a payment method.

² Users can buy and sell gold through the Google Pay app in India. The purchased gold will be stored in vaults by a metal processing facility.

³ Google Pay plans to introduce tokenized cards feature to support debit and credit card payments in India.

⁴ Citigroup will offer checking accounts through the Google Pay app.

⁵ Google Pay in India works with four banks to facilitate account-to-account transfers between participating banks in a real-time interbank payments system.

⁶ OCBC Bank customers can send money through Google Pay to any account at a participating bank in Singapore's real-time interbank payments system.

Google Pay plans to add DBS and Standard Chartered as partner banks.

⁷ The partnership with Curve widened the availability of Google Pay in the U.K. to customers whose banks previously did not allow linking their bank cards to Google Pay for contactless payments.

⁸ Google Pay's partnership with Pine Labs and Innoviti allows it to facilitate payments at the point-of-sale companies' merchant networks.

Sources: Company disclosures; National Payments Corp. of India; The Wall Street Journal; India's Business Today

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While its card integrations require a number of partnerships with banks or payment aggregators in other countries, Google's association with UPI sponsor banks ensures that customers of various banks can use Google Pay and transact with account holders at any UPI network bank without having to use their debit or credit cards.

Participating in an interoperable payments network has allowed Google Pay in India to focus more on expanding features and creating seamless commerce experiences to keep consumers within its ecosystem.

Google's Spot platform allows businesses to set up storefronts that are accessible within Google Pay, enabling users to transact with these businesses without having to install their apps and share payment details. Businesses with physical outlets can use Google-branded visual codes that work like QR codes and enable customers to pay using Google Pay. The spot codes also allow customers to access merchant-designed experiences such as seeing the menu and ordering coffee.

Google Pay's international expansion plans of late appear to be mirroring its Indian strategies of facilitating bank-to-bank transactions. In Singapore, it is partnering with three banks to link users' bank accounts in the app and provide credit transfers using Singapore's real-time payments scheme, PayNow. While there has been no official announcement about the launch of the Spot platform in Singapore, its website named Singapore-based cinema chain Shaw Theatres as a Spot merchant partner.

In the U.S., Google has teamed up with Citigroup Inc. to offer checking accounts through its Google Pay app in a move that could allow the company to replicate, albeit on a limited scale, the success it has had sidestepping card rails while linking consumers and merchants in India. Google urged the Federal Reserve to consider building overlay services on top of the yet-to-be-built FedNow scheme, where consumers can use nonbanking services like Google Pay itself to initiate a request to send or receive money and the user's bank will then execute the request.

Payments greasing Amazon's flywheel

Amazon's payments strategies globally involve facilitating easier payments for buyers on its own e-commerce platform as well as giving consumers the option of paying with their Amazon accounts on external websites and in merchant apps. On both fronts, Amazon has made rapid strides in India.

Joining the UPI bandwagon has enabled it to provide a popular payment option and fueled Amazon Pay's rise as a high-frequency payments platform. Amazon Pay's expanded features include movie, bus and flight ticket bookings, which were built in partnership with bookmyshow.com, red Bus and cleartrip, respectively.

While most e-commerce companies offer UPI as a payment method on the checkout page, consumers would still have to log into a UPI-based app and authenticate the transaction by entering a personal identification number specific to the UPI-linked bank account. As Amazon allows customers to link their bank accounts on its app, it has made the UPI payment process less cumbersome. Payments made from bank accounts tend to incur lower processing costs than credit card payments.

Amazon Pay has also gained a greater foothold among brick-and-mortar retail establishments as its UPI customers can make payments at all merchant stores that support interoperable, UPI-based QR codes. India appears to be the only large market where Amazon Pay facilitates person-to-person payments. Instant fund transfers to friends and the ability to check balances of bank accounts are some of the features supported by the UPI system.

Troves of transaction data generated through Amazon Pay can help the company better understand consumer needs, lead to greater use of financial services and drive greater consumer activity on the Amazon platform.

The e-commerce company is cultivating consumer and merchant financing services in its large markets in partnership with banks and financial technology companies. In addition to offering co-branded credit cards and card-linked installment plans, Amazon provides lending options to active Amazon customers without cards under its own brand, in partnership with Capital Float. Amazon Pay, which has an insurance brokerage license, distributes insurance products underwritten by Acko General Insurance Ltd., a digital underwriter. Acko sells car insurance and mobile device protection plans to Amazon customers. Amazon has deepened its relationship with its fintech partners, Capital Float and Acko, by investing in the two companies.

Amazon making bigger financial services bets on India

		U.S.	Germany	U.K.	Japan	India	
2019 net sales, including product and service sales (\$B)		193.64	22.23	17.53	16.00	NA	
Amazon Pay	Features	Pay in external stores			●	●	
		Pay online or in apps of external merchants	●	●	●	●	
		Send money to individuals on Amazon app					●
		Pay utility bills on Amazon app ¹					●
		Book flight, bus tickets on Amazon app					●
	Payment methods	Debit, credit cards	●	●	●	●	●
Bank accounts			●	●		●	
Reloadable stored-value wallet						●	
Other financial services	Co-branded cards	●	●	●	●	●	
	Lending ²	Point-of-sale financing (credit card-linked interest-free installment plans) for Amazon purchases	●			●	●
		Point-of-sale financing to non-credit-card holders				●	●
		Lending to Amazon merchants ³	●		●		●
Insurance	Insurance to Amazon consumers	●	●	●	●	●	
Partnerships	Co-branded card	Issuing bank/financial institution	American Express, JPMorgan Chase, Synchrony	Landesbank Berlin	NewDay	Sumitomo Mitsui	ICICI
		Card networks	American Express, Visa	Visa	Mastercard	Mastercard	Visa
	Lending	Point-of-sale financing bank partners	Synchrony	NA	NA	NA*	HDFC, SBI, Axis, ICICI, Kotak
		Point-of-sale financing nonbank partners		NA	NA	Paidy	Bajaj Finserv, Capital Float
		Merchant lending partners	Bank of America, SellersFunding, Payoneer	NA	SellersFunding	NA	Aditya Birla Finance, Bank of Baroda, Capital First, Capital Float, Flexiloans, Yes Bank
	Insurance	Insurance partners	Allstate, Asurion	Assurant	Assurant	Lifenet, SBI Holdings, MS&AD, Zurich, Ipet, Rescue Insurance	Acko

Data compiled Feb. 18, 2020.

NA = not available, or not applicable if marked by an asterisk

¹ Amazon's partnership with bill payment network Paymentus allows U.S. customers to query Alexa devices about their utility bills. In India, Amazon customers can manage and pay bills through the Amazon app.

² Excludes Amazon's pay by invoice option, which is available in certain countries, including the U.S., and allows corporate buyers to defer payments to sellers on the Amazon marketplace.

³ In addition to referring merchants to banks and specialty lenders, Amazon directly offers financing to help sellers procure inventory. Net seller receivables stood at \$863 million as of Dec. 31, 2019, up year over year from \$710 million.

Sources: Company disclosures; CNBC; the Financial Times

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Amazon is investing heavily in payments, logistics and e-commerce, and its ability to bring them all together is helping the company expand into newer verticals in India. It already offers grocery delivery services in a few cities and will soon launch a food delivery service, *The Economic Times* reported. Amazon's payments business in India, in which the Seattle-based company has invested more than \$483 million, will help manage the seamless movement of funds between various endpoints in its growing ecosystem.

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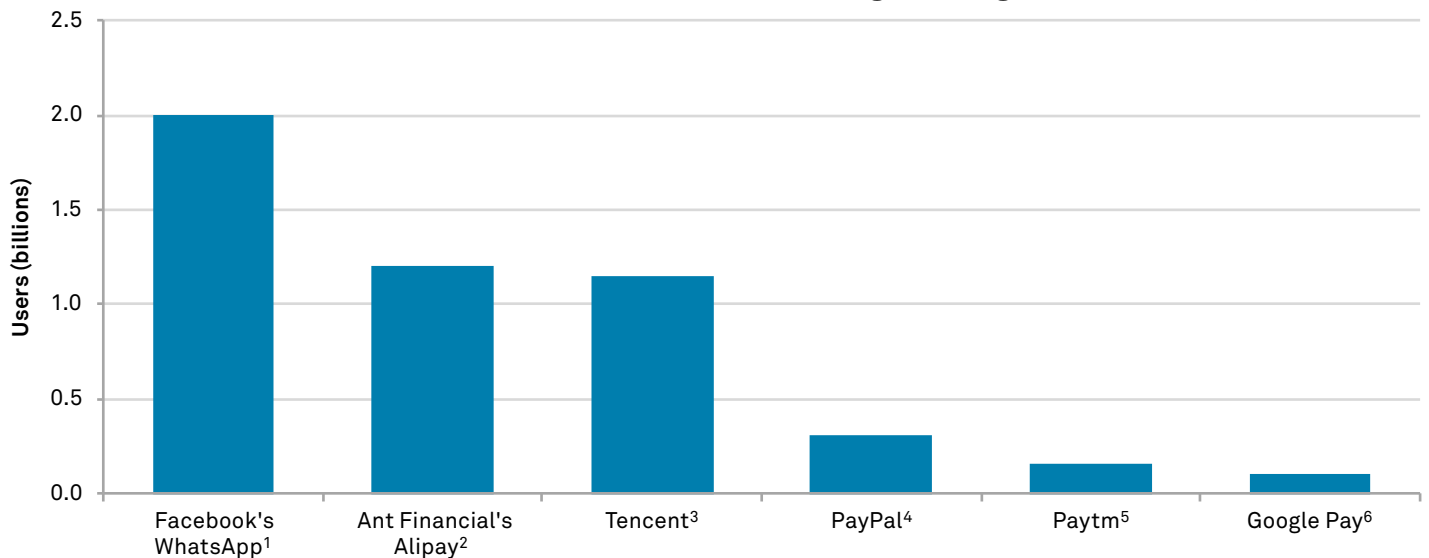
Moving money like a message

WhatsApp's integration of a UPI payment feature into its messaging app in India will put it on track to provide a myriad of services and build its own digital ecosystem. Facebook has already emphasized the centrality of WhatsApp in its plans to build services around commerce, including creating digital storefronts for businesses and linking them with customers.

WhatsApp's tools for small businesses and APIs for large corporates to automate and respond to messages are finding applications across industries in helping them onboard customers and drive engagement.

Facebook in April announced a \$5.7 billion deal for a nearly 10% stake in Jio Platforms, a telecommunications business owned by Reliance Industries. Facebook aims to leverage WhatsApp's reach to build an e-commerce venture, while the JioMart commerce platform aims to link consumers with more than 60 million mom and pop stores, helping them make payments through the messaging app.

WhatsApp could propel Facebook to compete with global digital payment players



Data compiled Feb. 18, 2020.

¹ Facebook's WhatsApp, which had more than 2 billion monthly active users as of February 2020, expects to roll out a payments feature first in India and then in other countries.

² Alipay and its e-wallet partners outside China had more than 1.2 billion users as of June 2019.

³ Tencent offers Weixin in mainland China and WeChat internationally. The two apps offer in-app wallets, and their combined monthly active user base was more than 1.1 billion as of September 2019.

⁴ The figure for PayPal is as of Dec. 31, 2019, and reflects the number of accounts that completed at least one transaction on the PayPal platform within the past 12 months.

⁵ Paytm had 150 million annual transacting users as of February 2020. It had 10 million users in Japan as of August 2019.

⁶ Google Pay's figure reflects more than 100 million app downloads on Android phones around the world. In India, it had 67 million monthly active users as of September 2019.

Sources: Company disclosures; The Economic Times

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Financial institutions and fintechs are increasingly leveraging WhatsApp. HDFC Bank Ltd. and Kotak Mahindra Bank Ltd. offer several services through the popular messaging app, including the ability to check account balances, generate a statement of transactions and apply for a credit card. Bharti AXA accepts applications for bike insurance policies and facilitates claim process for life insurance policies through WhatsApp.

Fintechs such as Upwards and Wishfin allow customers to apply for personal loans through the messaging app. Borrowers can chat with the companies, submit applications and discover eligibility and credit limits using WhatsApp.

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Leveraging WhatsApp allows businesses to engage through a medium familiar to customers. While WhatsApp provides conversational banking and commerce, the addition of payments could spur the social media company to develop an online marketplace.

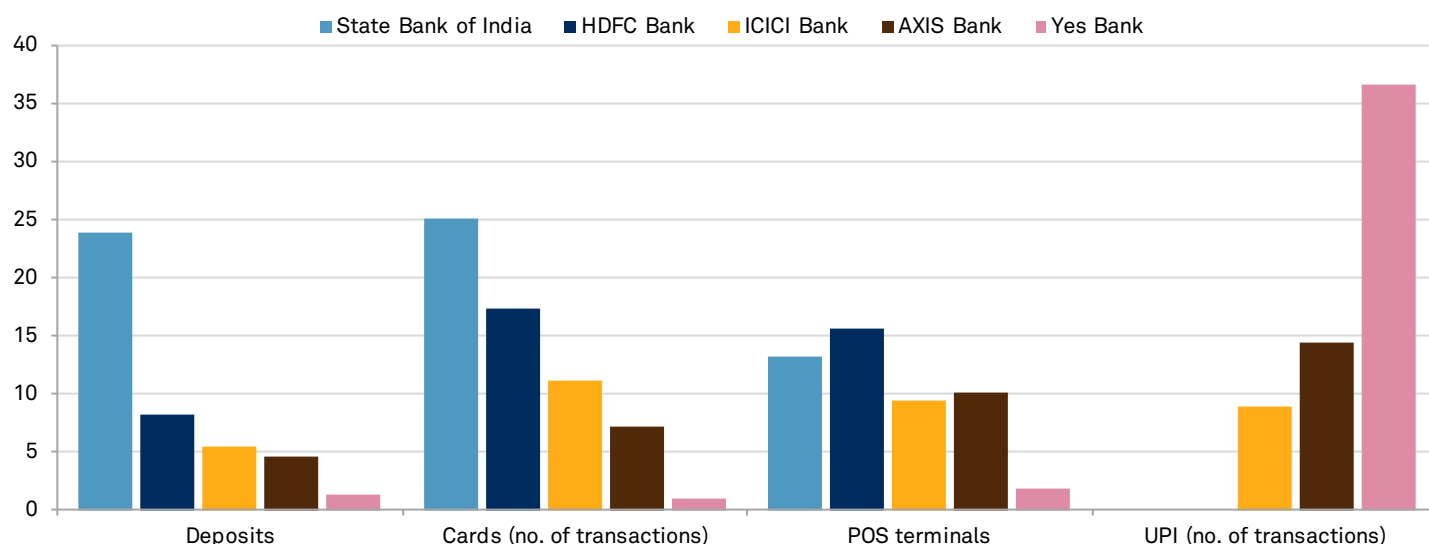
WhatsApp has more than 2 billion active users around the world, with most of them living in developing countries such as India, Indonesia, Mexico and Brazil. India could become the blueprint for WhatsApp as it expands payments into other developing markets. In addition to creating networks of merchants and consumers, WhatsApp has the potential to facilitate remittances in India and Mexico, both of which received more than \$120 billion in aggregate inbound remittances in 2019, according to World Bank estimates.

Implications of nonbank dominance for banks

Four financial institutions with a significant presence in retail banking may have conceded the space in mobile payments to nonbanks, but they remain vital behind the scenes in helping nonbanks move money on the UPI system.

HDFC Bank, State Bank of India, ICICI Bank and Axis Bank are among the largest card-issuing and merchant-acquiring banks. Debit and credit cards issued by the four banks accounted for 61% of card transactions in the fourth quarter of 2019. HDFC, the largest bank in terms of market capitalization, enjoys a 28% share in credit card transactions, although it holds only 8% of total deposits in the country.

Market share of select large banks in retail payments (%)



Data compiled March 11, 2020.

Market share percentages are for the quarter ended Dec. 31, 2019, except for deposits, which are as of year-end 2019.

UPI transactions data settled by State Bank of India and HDFC Bank is not available.

Sources: S&P Global Market Intelligence; Reserve Bank of India; National Payments Corp. of India

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Although the four banks lag Yes Bank as a settlement partner processing interbank transfers, they are poised to eat into the smaller bank's share. Yes Bank processed 37% of UPI transactions in the fourth quarter of 2019, driven by its exclusive partnership with PhonePe. That lead is now under threat with PhonePe shifting to ICICI Bank after Yes Bank's servers and services went down for a couple of days in March. The central bank's moratorium on withdrawals from ATMs and internet banking through Yes Bank disrupted services of several fintechs that work with the institution. PhonePe is now expected to work with multiple bank partners, including Yes Bank and ICICI Bank.

Although big banks continue to hold the keys to the mobile payment infrastructure, nonbanks are the primary payment interface providers that handle consumer and merchant services. The biggest threat banks and card networks may face from surging payments via nonbanking apps is the prospect of a China-like situation where millions of people jump to mobile from cash, leapfrogging the use of cards. Ant Financial and Tencent have cornered

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the mobile payments market due to the popularity of their apps, and banks have been cut out as intermediaries in China. While banks in India are not in danger of losing access to low-cost retail deposits, disintermediation risk exists in the form of losing direct payment relationships with consumers.

Continued payments relationships with customers remain critical to big banks' retail businesses as they leverage payment data to convert the depository relationships into assets by selling financial products. For example, ICICI Bank and Axis Bank offer up to 70% and 87% of personal loans to existing customers, respectively. With nonbanks right in front of the customer, banks could lose out on opportunities to deepen customer engagement.

UPI to propel data-driven banking

In the wake of the COVID-19 crisis, banks are scaling down their exposure to unsecured lending, including credit cards and personal loans. As traditional financial institutions have become risk-averse, popular payment apps will have an opportunity to play a mainstream role in providing loans and insurance.

Payment fintechs are already tailoring their offerings by anticipating consumer needs. PhonePe and Paytm are providing in-app COVID-19-related insurance policies that cover hospitalization and other expenses, and promoting gold and mutual fund investments. Amazon Pay has widened the use cases for its deferred payment option to allow customers to buy essentials and make bill payments. Payment fintechs' ability to make greater inroads into lending could be limited in the near term as lenders might be reluctant to underwrite loans.

However, when risk-taking comes back into the system, payment fintechs will become the natural partners to disburse loans digitally as UPI apps remain the largest financial distribution platforms to acquire customers with little or no credit history.

Millions of transactions occurring through UPI apps generate troves of data about users' spending behavior and patterns to build profiles of customers and their lending needs. Information about users' utility bill payments and digital shopping could augment lenders' underwriting models to assess the creditworthiness of potential customers.

UPI apps could also facilitate new use cases supported by the account aggregator framework that allows licensed nonbanks to enable consent-based sharing of personal financial data. Authorized nonbanks acting as account aggregators can serve individuals and small businesses by bringing together and providing a consolidated view of financial data from various sources such as loan accounts, deposits, credit cards and investment accounts. Customers seeking better financial products can also use account aggregators to pass on their financial information to banks, insurers and fintechs.

Instead of spending top dollar on customer acquisition, account aggregators might partner with payment fintechs to tap into their customer base and share data through UPI apps. Popular payment fintechs themselves could acquire account aggregator licenses to build new use cases and support their own financial services bets.

S&P Global Market Intelligence previously published a portion of this report on March 12, 2020, as ["US big tech's super app bets riding on real-time payment rails in India."](#)

As of June 9, 2020, US\$1 was equivalent to 75.45 Indian rupees.

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