



Fintech in India - Powering mobile payments

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Foreword

The financial services sector has witnessed a massive shift in the favour of digital. This shift has opened up a plethora of opportunities around digital financial services. Payments business services have been at the forefront of this digital transformation. The transformation can be attributed to a conglomerate of innovative headwinds that include the existence of a robust infrastructure, evolving customer expectations, progressive government initiatives and technological advancements. We are witnessing a conducive collaborative environment and dynamism that is mobilising digital adoption.

The last few decades have witnessed a convergence in the financial services business. The year 2018 was a formative year for the Indian payment industry. Mobile payments have demonstrated its unprecedented potential to change the way we transact. The global payment landscape is continuously evolving due to this convergence and increasing technological breakthroughs.

India is at the forefront of this payment transformation. The intersection of mobile technology and financial services has paved way for increased digital adoption. The contribution from all stakeholders i.e. government, regulators, banks and financial institutions, merchants, mobile payments service providers, and investors has become a key enabler to leverage the mobile payments ecosystem.

The report aims to offer a thorough view of the global mobile payments ecosystem and themes, thereby drawing key learnings, addressing opportunities and challenges for the Indian mobile payments ecosystem to propel this vibrant and valued sector.

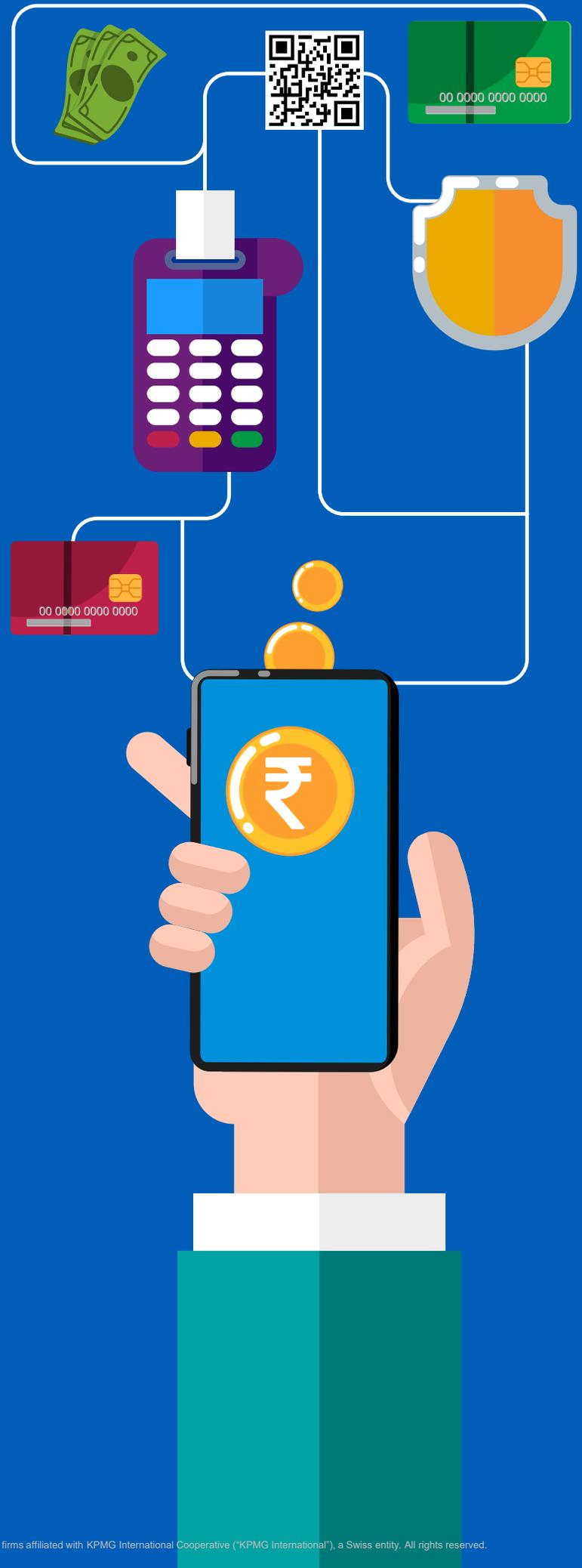
We hope that you enjoy reading our publication and as always, we look forward to your support.



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Introduction



Context

This research report by KPMG in India, has been developed with a vision to help and guide India to become a highly dynamic mobile payments ecosystem through cross-industry collaboration and global benchmarking. Our research is focused towards assessing the payments landscape in India with respect to low value and high volume mobile payments predominantly driven by mobile as a key form factor and leveraging new age payment modes such as UPI (Unified Payments Interface) mobile applications, mobile wallets, USSD (Unstructured Supplementary Service Data), etc. We have analysed the ecosystem stakeholders and identified the growth drivers. Thereafter, we have recommended action points that could enable India to establish itself as a mature mobile payments ecosystem by global standards.

Content

This report's content is structured to address the following key questions:

- What are the key growth drivers and benchmarks set by key global mobile payments' ecosystems, and where does India stand in comparison?
- What are the prerequisites and prerogatives for different stakeholders (financial institutions, wallet providers, government and regulators) to establish a successful mobile payments ecosystem in India?

- Which new frontiers are enabling growth and innovation for mobile payments?

Approach

The following three-stage approach has been taken by the research team to analyse the mobile payments market in India:

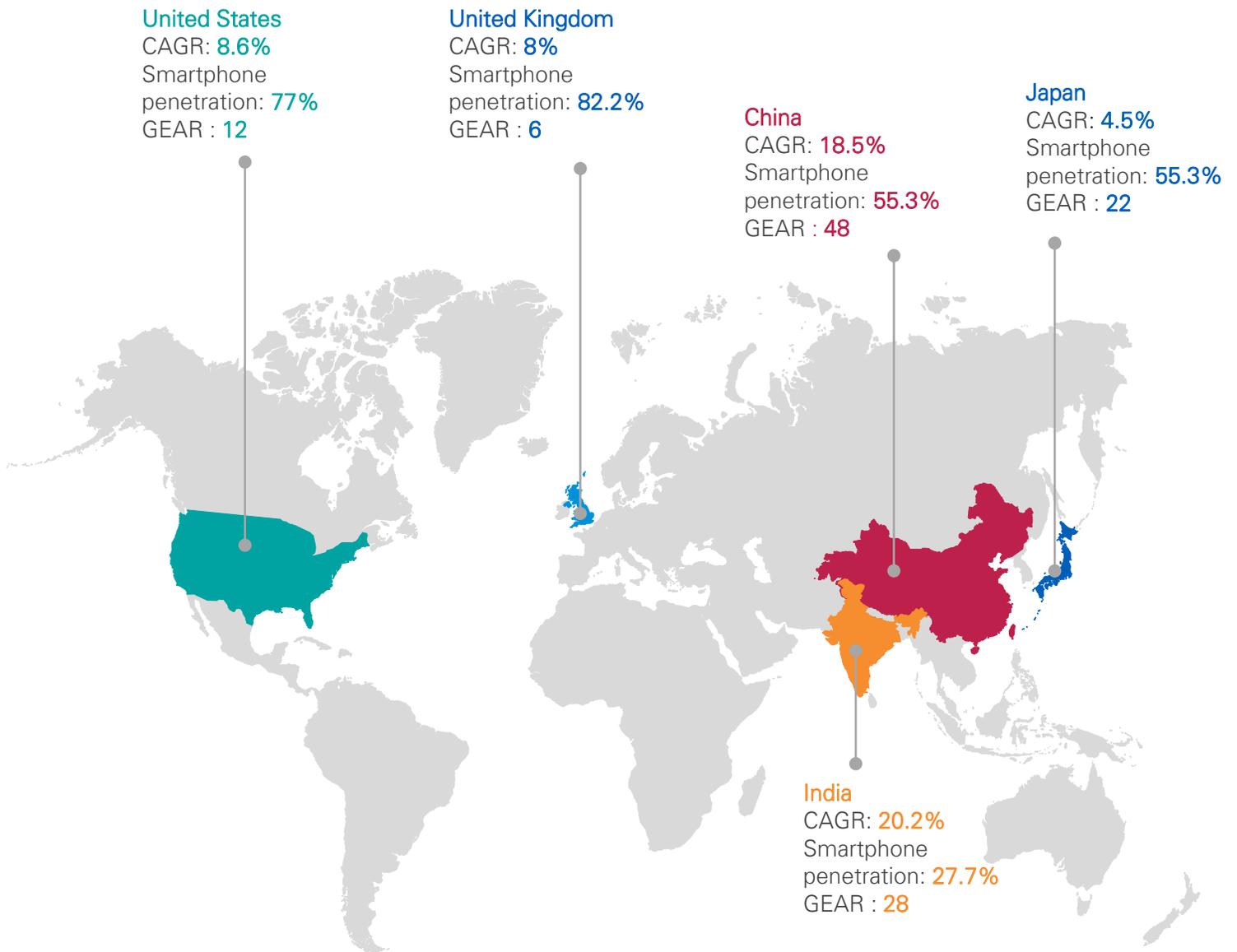
- **Studying the market's key stakeholders in India:** Leverages KPMG's wide client-base and sector expertise to study the Indian mobile payments ecosystem's different stakeholders for their current state of maturity
- **Assessing the Indian landscape:** Leverages KPMG's extensive research capabilities and KPMG International's global network of member firms to extract insights from global mobile payments' ecosystems and structure them to guide the Indian ecosystem through recommendations for each stakeholder
- **Key payments services identification:** Identify key mobile payments services that are shaping the industry and investigate each one to understand leading practices that can be replicated in India.

Overview

Global landscape of digital payments

The digital payments landscape is being driven by compelling value propositions, conducive infrastructure, supportive regulations and next generation technologies. Globally, non-cash transaction volumes have surged leading to a change in the power dynamics of the payment industry, which is witnessing a shift in favour of digital. Digital payments are seeing a thriving growth and gaining traction with a Compounded Annual Growth Rate

(CAGR) of 12.7 per cent in the number of non-cash transactions (forecast, 2016-21)¹. The growth is attributed to developing markets led by emerging Asian countries, which are forecasted to grow by 28.8 per cent till 2024 (number of non-cash transactions), and expected to account for half of the digital transactions worldwide². The global digital payments market size is expected to touch USD10.07 trillion by 2026³. The following graph showcases the digital payments adoption across certain countries.



Digital payment adoption scenario

CAGR forecast period: 2019- 2023⁴

Smartphone penetration: 2018⁵

Government E-Payments Adoption Ranking (GEAR): 2018⁶

1. World Payment Report, Capgemini, 2018
2. World Payment Report, Capgemini, 2018
3. Digital Payment Market, Global Newswire, July 2019
4. Digital Payments, Statista, 2019
5. Top 50 Countries/Markets by Smartphone Users and Penetration, Newzoo, September 2018
6. Government E-Payments Adoption Ranking, The Economist Intelligence Unit, 2018

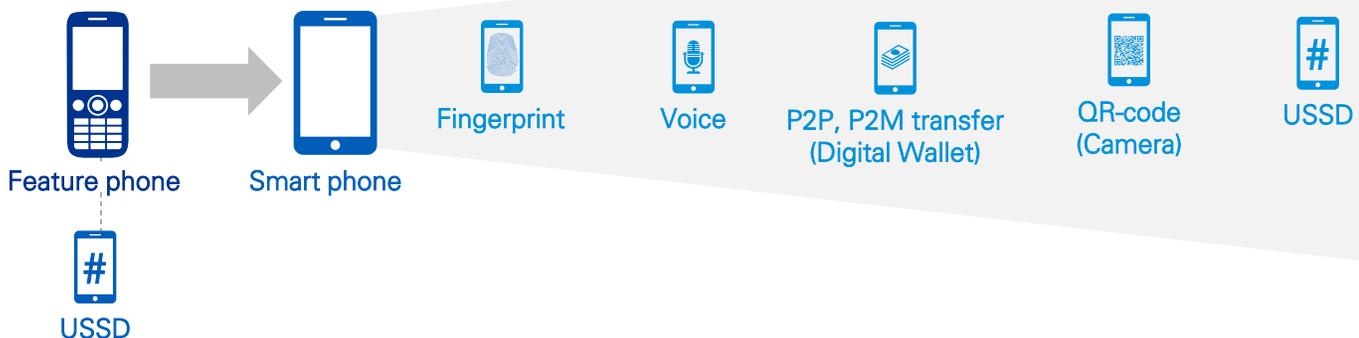
The digital payments space has witnessed a significant push due to the innovative use of technology. Major capabilities such as mobile wallets, smart devices, Near Field Communication (NFC) and Quick Response (QR) codes have increased digital adoption and impacted the way consumers transact and interact with payment partners. The influx of innovation in the digital payments infrastructure has also led to a critical challenge of cybersecurity faced by the players in the ecosystem. There is a lot of focus on enhancing capabilities and responding to cyber threats. Various standards and practices such as stronger authentication, data confidentiality and integrity mechanisms are gaining prominence.

The success of any digital payments ecosystem hinges on a combination of factors. For the merchants and consumers, the perceived functional benefits (onboarding and ease of usage), awareness levels and perceived performance levels when compared to traditional modes such as dealing with cash are critical to adoption of digital payment modes. For payment providers (mobile payment service providers, banks, etc.), a compelling business model with viable propositions and diversified service offerings allows them to run a sustained business with low margins. Moreover, a combination of favourable government policies (incentives, subsidies, government initiatives) for merchants, consumers and payment providers, and availability of right infrastructure such as smartphones and internet connectivity form the base enabling a strong digital payments ecosystem.

Digital payments in India

Over the past two decades in India, technology developments and evolution of device form factors have led to a gradual transformation of digital payments. While feature phones were limited to USSD (Unstructured Supplementary Service Data), the advent of smartphones and the internet has opened up a host of form factors and access to payment technologies.

Evolving form factors impacting the evolution of mobile payments



From peer-to-peer transfers to camera-enabled QR code scanning and voice banking, digital payments have come a long way.

- This can be attributed to an increase in smartphone user base (Forecasted: 829 million by 2022 growing at a CAGR of 15.5 per cent)⁷
- The Point of Sale (PoS) devices have also seen a mobile form factor with mPoS (Mobile PoS) devices accepting device-based payments. This segment has been forecasted to grow at a CAGR of 54.2 per cent in time period 2019-23⁸.

The mobile payment revolution with its evolving form factors has led to a boom in the number of merchants adopting digital payments. From close to 1.5 million digital payment acceptance locations in 2016-17⁹, the number of merchants accepting digital payments modes has increased to over 10 million¹⁰, in a short span of two to three years. QR-code based wallet acceptance points with low setup costs have been instrumental in driving mass adoption among merchants, thereby increasing convenience for customers as well, creating a virtuous cycle for the ecosystem. E.g. Paytm QR¹¹ is visibly seen at different retail stores, hotels, small merchants etc. and has become ubiquitous to cash in India. Paytm has over 12 million merchants who are provided a range of services for enabling digital payments from all instruments like wallet, UPI, cards etc., form factors like QR and PoS terminals, billing and inventory management software and O2O (Online to offline) commerce etc. In another example, the India Post Payments Bank (IPPB) is bringing small shops and vendors under its QR payment system and issuing 'QR-Card' to customers, which are analogous to debit cards, but with an embedded QR code to uniquely identify accounts¹².

New form factors have also enabled payments companies to push forward financial inclusion and digital literacy through better visual support and regional language options. Mobile payments players have been at the forefront of deploying terminals to process Aadhaar-based payments using biometrics and popularise digital payments in rural hinterlands.

7. Smartphone users in India to double to 829mn by 2022, Financial Express, December 2018
 8. Mobile PoS Payments, Statista, 2019
 9. India's Mobile QR Code Future, PYMNTS, February 2017

10. Not just for peers, UPI's now choice of merchants too, Economic Times, June 2019
 11. Primary discussions with Paytm, KPMG in India's analysis 2019
 12. India Post Payments Bank replaces ATM/debit cards with QR cards, Livemint, September 2018

Riding on the growth trajectory of digital payments and emerging form factors, India is swiftly moving to a cashless country. India is forecasted to see the fastest growth in digital payments transaction value between 2019 and 2023, with a CAGR of 20.2 per cent, ahead of China and the United States¹³.

Digital payment transaction turnover as a percentage of the Gross Domestic Product (GDP) increased from 7.14 per cent in 2016 to 8.42 per cent in 2018¹⁴

Per capita digital transactions rose from 2.4 in 2014 to 22.42 in 2019, and has the potential to grow to 220 by 2021¹⁵

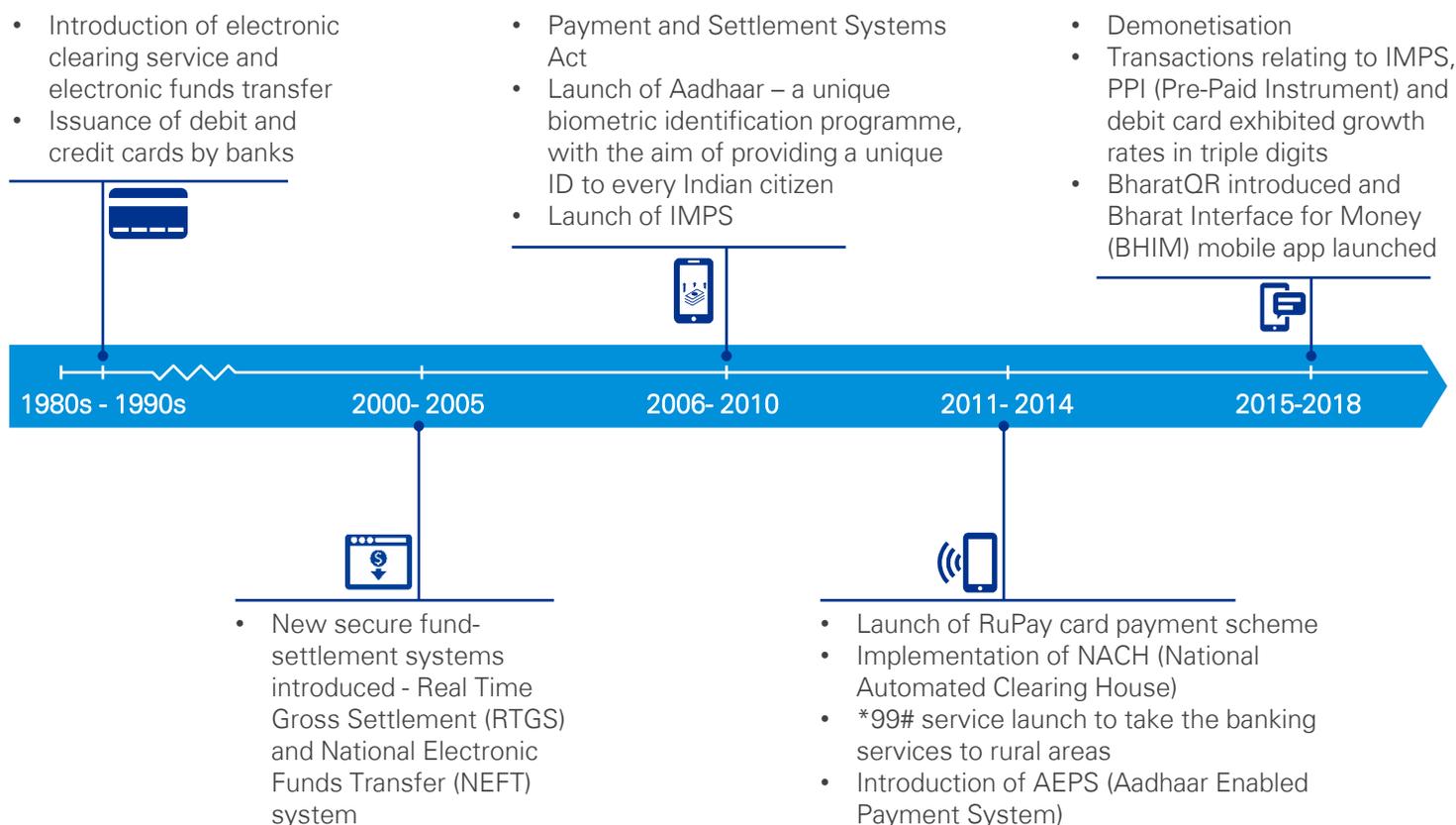
The evolution of digital payments in India is attributed to the progressive thought process of Reserve Bank of India (RBI), central and state governments, industry associations and payment corporations. RBI has endeavored to ensure that India has state of art payment systems which are secure, efficient, fast and affordable. RBI has recently released its '2021 vision document', which makes digital payment as the key

focus and puts emphasis on role of the ecosystem and infrastructure in driving safer and faster payments.

The National Payments Corporation of India (NPCI) is an umbrella organization for operating retail payments and settlement systems in India. An initiative of the RBI and the Indian Banks' Association (IBA), NPCI has consistently focused on digital payment innovations by introducing payments infrastructure such as Immediate Payment Service (IMPS), UPI, USSD based payments and the National Common Mobility Card (NCMC). NPCI has been a differentiating factor in which industry stakeholders have come together to share a common vision of propelling the growth of digital payments.

The change in the payment landscape has accelerated over the last decade, with multiple factors redefining the traditional role of banks and creating a mature landscape. India's payment landscape is growing faster than the global average. Some of the factors pushing growth include emergence of mobile payments service providers, evolving business services by the market incumbents, inclusive government policies and literacy programmes, robust payment infrastructure, high consumer acceptance and strong regulatory support.

The following timeline showcases the evolution of digital payment infrastructure in India



13. Digital payments to more than double to \$235.2 billion by 2023, Business Today, June 2019

14. Payment and Settlement Systems in India: Vision – 2019-2021, Reserve Bank of India, May 2019

15. Report of the High Level Committee on Deepening of Digital Payments, Nandan Nilekani Committee, May 2019

Unlocking value through mobile payments

The past two decades have built a strong foundation for mobile payments and the next few years are likely to witness a leap and contribute towards 'Digital India'. Mobile payments have witnessed major shifts in the past five years with proliferation of payments viz. UPI, Mobile Wallets, Bharat Interface for Money (BHIM), BharatQR and USSD.

- ✓ One of the key factors which played a transformational role and democratised mobile payments in India was the role played by wallet players. The ease of payments, ubiquity and convenience were the factors which led to extensive adoption of wallets. As per recent reports, the mobile wallet market is expected to continue its expansion at a CAGR of nearly 52.2 per cent by volume during 2019-23¹⁶.
- ✓ Another factor that has led to next wave in mobile payments is UPI based real time payments. The UPI adoption has shown exponential progress and processed USD93 billion in payment value till May 2019, which is more than 2016-18 combined¹⁷. The volume of UPI transactions have increased at a CAGR of 246 per cent during the period January 2017 to June 2019¹⁸. Some of factors such as interoperability and possibility of origination across different platforms such as mobile wallets is further fueling the growth of UPI transactions.

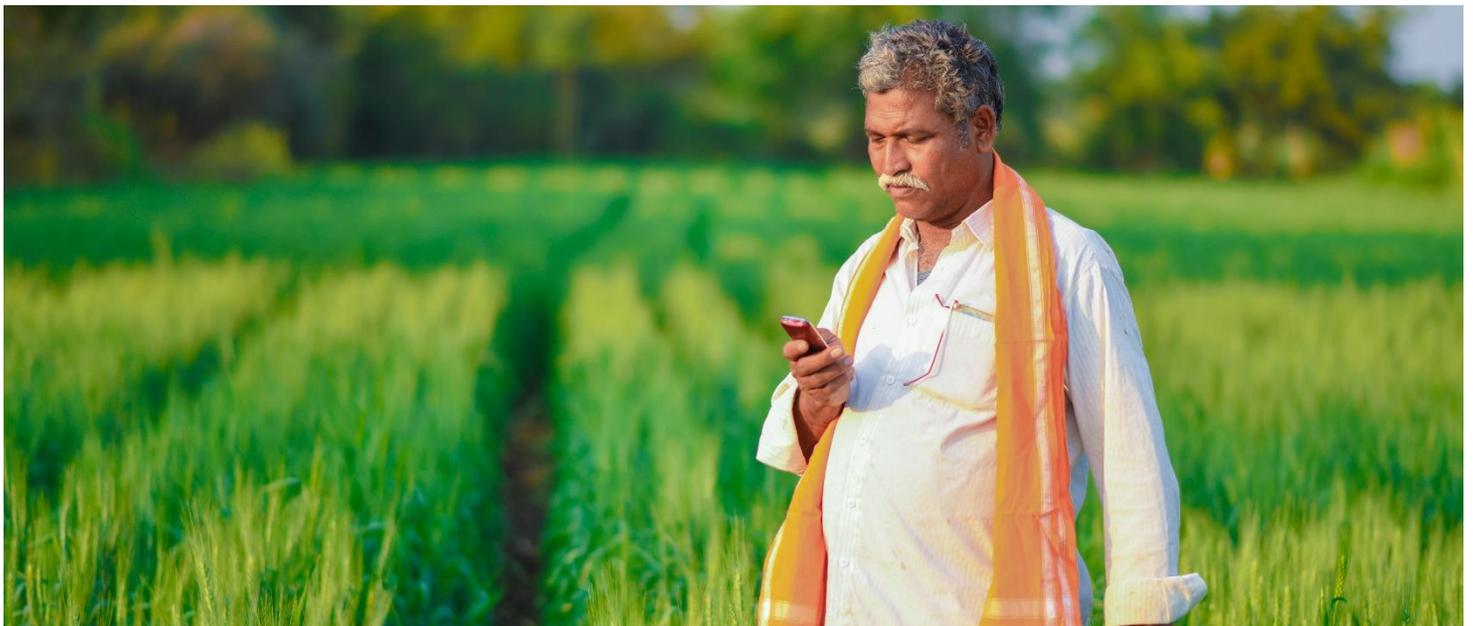
RBI has forecasted an outcome of 50 percent increase in mobile based payment transactions as per the '2021 vision document'¹⁹. This shift can be attributed to the driving factors such as robust payment infrastructure, evolution of form factors, availability of structured data, shift in consumer behaviour and government's vision to transform India into a cashless economy.

One size does not fit all

Mobile payments space has witnessed a shift with reference to consumer preferences and rise of innovative technologies, pushing the payment providers to transition from a single fit for all approach to tailor-made payment solutions. Organisations need to balance innovation with ubiquitous, contextual and integrated demand of customers within the regulatory boundaries to transform as per the evolving customer demands.

Mobile payments service providers are expanding their offerings by providing a mix of payment options viz. mobile wallets, NFC, USSD, UPI, QR code, etc. catering to all customer segments. A key area of focus is on the under-penetrated rural market with limited internet and smartphone usage. The focus is on increasing USSD adoption, which can act as a last mile payment technology. USSD-based services require a push through enhanced security, low customer cost and enhanced usage. Simplified user experience, adoption by incumbents and absolute support can help USSD to penetrate into the entire country.

This report assesses the rise of mobile payments as a new chapter in the Indian payment industry. One of the core objectives of this report is to throw light on the emergence of mobile payments services across new frontiers such as next generation payments, security and biometrics, Peer-to-Peer (P2P lending), international remittances, trading and investments, etc. For this, we have taken an approach that helps us learn from leading mobile payments ecosystems of mature and emerging markets of China and Japan. We sincerely hope that the insights provided through this report prove to be useful for all stakeholders in the mobile payments ecosystem.



16. Business wire, Indian mobile wallet market estimate, July 2019

17. UPI Product Statistics, NPCI, May 2019

18. UPI Product Statistics, NPCI, May 2019

19. Payment and Settlement Systems in India Vision- 2019-2021, Reserve Bank of India, May 2019



Ecosystem analysis



Assessment of growth levers for mobile payments ecosystem

The mobile payments business is gaining significant adoption across the globe with payment ecosystems evolving across Americas, Asia Pacific (APAC) and the European region. The adoption has been made possible by ecosystem players across countries making substantial efforts to build a robust environment for scaling up.

A number of factors are driving growth in these payment ecosystems, namely, the availability of right technical skills, significant growth in capital investments, emergence of alternate business models and services, support of government policies/incentives, clear regulatory frameworks and an entrepreneurial and innovative mindset. These are the driving forces that are contributing to the creation of a conducive mobile payments ecosystem.

The global market is a mix of nascent, emerging and mature mobile payments ecosystems, each providing unique learning threads for countries envisioning to be a cashless society. In terms of its penetration, China and Norway have emerged as global leaders with over 40 per cent population using mobile payments²⁰.

KPMG in India has proposed an approach for this report to plan the growth strategy for the Indian mobile payments landscape, derived from the learnings of a dynamic run-time analysis of mature and emerging mobile payments ecosystems.

Our methodology consists of the following stages:

1. Market tracking: Our framework identifies a mix of mature and emerging mobile payments markets to recognise the attributes that germinate, enable and guide the ecosystem
2. Market driver prioritisation: Our framework analyses the data points from the markets to identify current set of impactful driving forces required to build a thriving mobile payments ecosystem
3. Focus-market adjustment: On the basis of Stage 1 and 2, a set of recommendations are provided to help and transform the Indian mobile payments ecosystem.

Rationale for selection of a mix of mature and emerging markets for tracking:

We acknowledge that mature markets offer a rich quantitative and qualitative derivation of factors and forces the deep penetration of mobile payments services. Emerging markets have also shown promising growth patterns, increasing investments and government support to drive mobile payments adoption. Hence, a mix of mature and emerging mobile payments ecosystems have been selected to present a holistic view.

20. The Rise of Digital & Mobile Wallets: 2019 Global Usage Stats, Merchantmachine UK, Nov 2018

Six attributes have been used to compare the ecosystem maturity across the three markets. The constituents of the six attributes/tracking criteria are stated below.



Business environment and models:

This factor assesses the competitive environment of the mobile payments market, along with the traditional and upcoming use-cases in this space. The sub-factors considered for assessment are the competitive landscape, variety of mobile payments players (sectoral), innovation in use-cases, ease of doing business and the per capita income of consumers (by Purchasing Power Parity).



Technology readiness:

This determines maturity of the country's technology landscape towards enablement of fast digital and mobile payments. The sub-factors considered for assessment are the level of payment infrastructure maturity, technology skill level and internet and mobile penetration in the country.



Regulatory support:

This assesses the level of regulatory clarity and adaptability in an evolving mobile payments ecosystem. The various sub-factors considered are level of policy clarity and regulatory measures on mobile payments, level of foreign investments allowed in the space and regulatory support such as sandboxes to promote innovation in payments.



Government programmes and incentives:

This factor measures the government's push towards the promotion of cashless payments ecosystem in the country. The various sub-factors considered are intensity of programmes directly/indirectly impacting cashless payments and government incentives in promotion of cashless modes of payment.



Consumer demand and acceptance:

This assesses the level of penetration/adoption of mobile payments in the market, from a consumer as well as merchant perspective

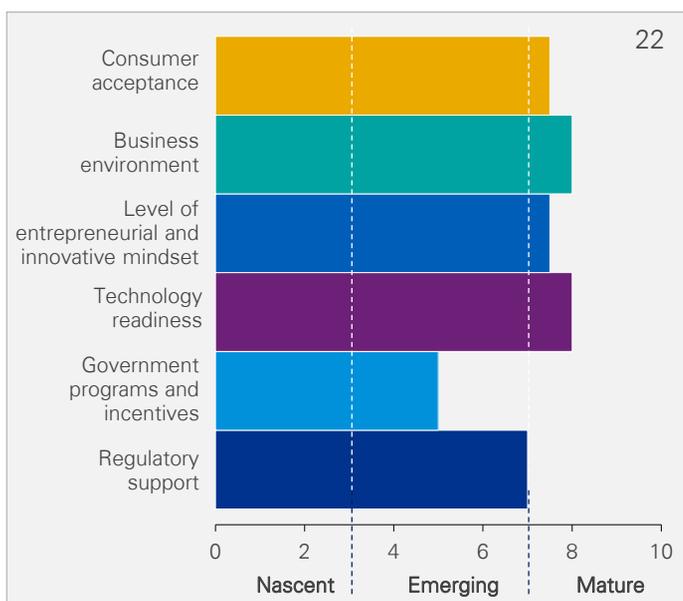


Level of entrepreneurial and innovative mindset:

This measures the level of innovation in the market and the entrepreneurial intensity in setting up new businesses. The metrics considered here are rankings in the Global Innovation Index and Global Entrepreneurship Index.

China

China has emerged as the strongest proponent of mobile payments in the world, driven by demographic dividend, robust technology infrastructure, innovative mobile payments offerings and high consumer acceptance²¹.



21. KPMG secondary research, KPMG in India's analysis 2019

22. KPMG secondary research, KPMG in India's analysis 2019

China has been a dominant market for adoption of mobile payments, with almost two-thirds of e-commerce and more than a third of point-of-sales spend in China made through leading mobile payments platforms such as Alipay and WeChat Pay²³.

In comparison to India and Japan, China mobile payments companies have been at the forefront of innovating in business models and use-cases, from traditional use-cases such as P2P transfers, ride hailing etc., to financial services such as credit scoring, wealth management, insurance and lending.

The ecosystem is a duopoly of e-commerce and social media giants. Both players provide QR-code based payments and control over 90 per cent of the market combined²⁴. A few large technology companies also provide NFC-based payments systems.

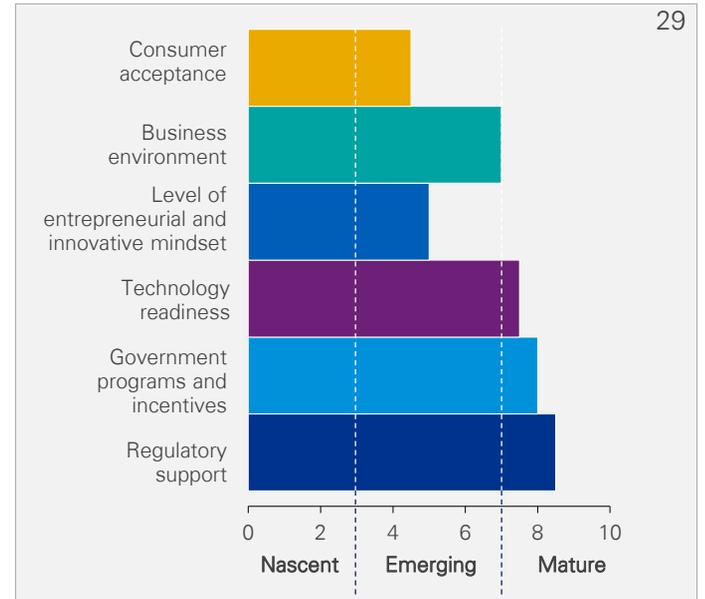
The People's Bank of China (PBC) has provided a fairly stable regulatory framework during the evolutionary phase of mobile payments, with a 'third party payments provider' licence, flexibility of a province-wide licence with lower capital requirements and Know Your Customer (KYC) based transaction limits. Apart from a licencing framework, the market has seen very few specific regulations in mobile payments during its high-growth years, unlike markets such as India. However, recent years have seen the regulator introduce a host of specific regulations, from capping QR code transactions to a limit to address fraud concerns, to requiring wallet providers to place customer funds with the PBC rather than in interest-earning market instruments, etc.

When compared to India and Japan, China has been leading the global mobile payments market with a market size of over USD12 trillion²⁵. In 2018, non-banking payment institutions i.e. third-party online payment service providers saw 530.61 billion transactions, surging 85.05 per cent, and a transaction value of CNY208.07 trillion, up 45.23 per cent from the previous year²⁶.

With almost 58 per cent²⁷ internet penetration, and a major share of them being mobile users, China has managed to provide the right platform to be leveraged by mobile payments players to scale.

India

The uptake of mobile payments in India has been driven by demand pull factors and a progressive regulatory regime. The focus of mobile payments ecosystem in India has shifted towards building a customer-centric, contextualised and inclusive payments experience for masses²⁸.



Introduction of new and innovative systems, distinctive shift from paper to electronic payment modes, sizeable increase in transaction turnover, customer centric initiatives, etc. are factors which have revolutionised the growth of mobile payments in India. With the rise in adoption of UPI (Transaction value and Transaction Volume) as the payment mode, there has been a considerable increase in mobile payments.

The growth in mobile payments in India has been propelled by the presence of an extremely competitive landscape and investments by foreign players. Compared to China and Japan, India has several payments providers, with over 45 wallet players³⁰, 50 UPI-based payment service providers and 142 banks on the UPI platform³¹. The competitive landscape ranges from telecom companies, e-commerce entities, banks to even internet companies and messaging applications.



23. Global Payments Report, Worldpay, November 2018

24. Is Alibaba losing to Tencent In China's Trillion-Dollar Payment War?, Forbes, March 2018

25. The Evolution of Mobile Payments in China, Medium, Dec 2018

26. Mobile payments continue meteoric rise, China Daily, March 2019

27. Top 20 countries with highest number of internet users, Internet World Stats, March 2019

28. KPMG secondary research, KPMG in India's analysis 2019

29. KPMG secondary research, KPMG in India's analysis 2019

30. Certificates of Authorization issued by the Reserve Bank of India, Reserve Bank of India, July 2019

31. UPI Live Members, National Payments Corporation of India, June 2019

In India, regulatory authorities and the government are helping the mobile payments ecosystem to evolve. The Reserve Bank of India (RBI) has proactively brought regulatory guidance with a framework for pre-paid-instruments (digital wallets) (net-worth/licence requirements, e-KYC, transaction limits, etc.), and interoperability guidelines for wallets. The RBI has also introduced 'Vision 2021'³² with thirty six action points for moving India towards a cashless society, and focusing on areas such as inclusive payments, cybersecurity hygiene and providing a bouquet of e-payment options.

A host of government initiatives (merchant incentives, cashbacks and literacy programmes, etc.) across multiple government departments in India have worked towards pushing the agenda of mobile payments. The government has also focused on enabling USSD-based mobile payments to tap rural markets which lack internet connectivity and smartphone penetration.

A lot of this progress can also be attributed to the mobile payment service providers operating in India, who have pioneered the art of innovation and contextualisation of products for Indian consumers.

With the presence of a robust payments infrastructure and growing smartphone penetration (estimated 829 million smartphones by 2022; 60 per cent penetration)³³ the potential for mobile payments adoption is enormous in India. E.g.

- There has been a growth of nearly 33 per cent³⁴ Y-o-Y in wallet-based transactions in the last two years
- UPI, which was introduced in 2016, has seen a 35-40³⁵ per cent month on month growth in both value and volume of transactions since December 2016.

Similar to the China market, the last two years have seen rapid diversification of use-cases with mobile payments providers offering short-term credit and inward remittance services. Mobile payments providers have struggled with achieving profitability due to lack of diversification in revenue models and less focus on the B2B(Business to Business) and G2B(Government to Business) segments and vice versa.



The focus of the incumbents and emerging players has shifted towards building a ubiquitous, contextualised and inclusive payments experience for customers. The future is likely to see an emergence of alternate business models fueling innovation and bridging the gap between offline and online payments.

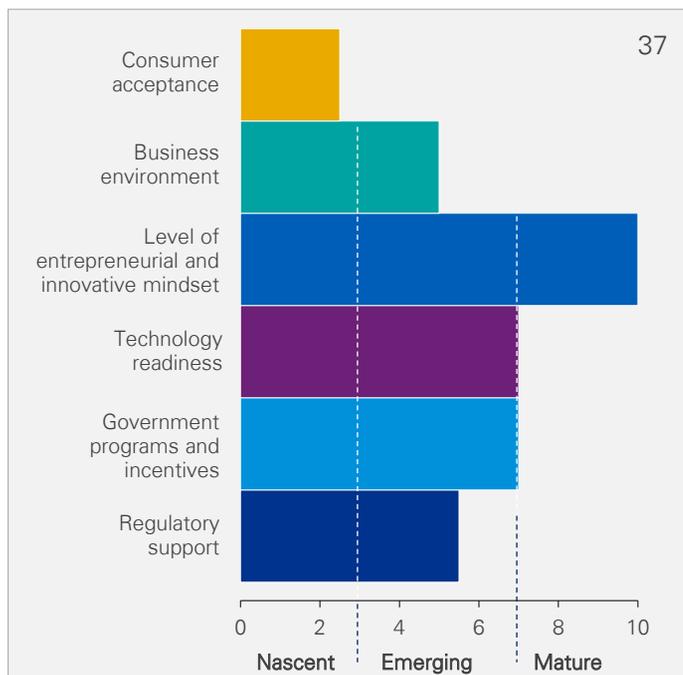
Gayathri Parthasarathy
National Head
Financial Services
KPMG in India



32. RBI releases 'Vision 2021' for payment systems for 'cash-lite' society, Livemint, May 2019
33. Cisco's Visual Networking Index (VNI), Financial Express, December 2018
34. Payment System Indicators – Annual Turnover, Reserve Bank of India, August 2018
35. UPI Product Statistics, National Payment Corporation of India, June 2019

Japan

Traditionally a cash dominated market, the growth of mobile payments in Japan has been slower as compared to India and China. Going forward, the market is likely to see new local and global entrants trying to simplify mobile payments and provide extensive coverage of business services³⁶



Japan is a nascent mobile payments market, with limited players from multiple sectors such as public transportation, retail companies, e-commerce players, banks, messaging applications, technology and mobile network companies, etc. Compared to China and India, the Japan mobile payments market has seen limited adoption due to over reliance on cash. The trend has been changing in the last few years with mobile payments expected to grow at CAGR of 15.3 per cent³⁸ till 2025. This trend may see emergence of foreign mobile payments service providers intensifying the competition.

Bank of Japan has been proactive in putting up a regulatory and licencing framework for e-money providers during the evolution phase and providing regulations such as fully-online KYC, lifting caps on non-banking companies to handle remittances and fraud-prevention guidelines.

While prepaid e-money cards introduced the concept of digital payments in Japan, a number of players, including a consortium of large banks have introduced QR-code

based mobile payments. Given its early dominance in the technology space, Japan enjoys a high smartphone penetration, but major usage is dominated by the younger population, with only 37 per cent of adults in their 60s using smartphones compared to 88 per cent of adults in their 20s³⁹. Hence, the growth in mobile payments volumes has been slower compared to India and China, which offer favourable demographics through a largely young population.

The mobile payments market of Japan reached approximately JPY1 trillion in 2017 and is expected to grow to JPY1.3 trillion in 2018 and to JPY4.37 trillion in 2023⁴⁰.

The Government of Japan has initiated fresh efforts for promoting mobile payments, through direct incentives such as subsidising cashbacks to consumers, subsidising implementation of payment devices and settlement charges of Small and Medium Enterprises (SMEs) and lowering deposit requirements for small-scale remittance providers. Indirect steps such as establishment of a 'Cashless Promotion Council' and a vision to increase cashless payments to 40 per cent by 2025 also aim to push mobile payments in Japan⁴¹.

Similar to the Indian market, global entrants operating through joint ventures have ventured in Japan to offer sustained rebate and cashback programmes to capture new customers and build traction. Although in initial stages, some players also plan to offer services such as trading and banking (separate permits for these services) in order to create an attractive product bouquet rather than a generic payments product.



36. KPMG secondary research, KPMG in India's analysis 2019

37. KPMG secondary research, KPMG in India's analysis 2019

38. Japan Mobile Wallet and Payment Market Opportunities Databook, Business Wire, 2019

39. Smartphone users and penetration in Japan survey, Japan Ministry of Internal Affairs and Communications, 2018

40. Yano Research Institute Survey, Travel Voice Japan, December 2018

41. The State of Cashless Payments in Japan, Nippon, July 2019

Ecosystem coverage of mobile payments in India

The following sections elaborate key constituents of the Indian mobile payments ecosystem, with due credence to key growth drivers, emerging strengths and challenges.

India has slowly transformed into a highly dynamic mobile payments ecosystem with the help of progressive regulatory policies, superior technology infrastructure and increasing usage of mobile internet. From innovating new and diverse use-cases to tapping foreign markets, mobile payments players are constantly trying to reinvent themselves. The traditionally cash-dominant Indian market has responded considerably well to introduction of mobile payments, primarily triggered by an increase in smartphone penetration and low data cost. The government's overall push for cashless and mobile payments has also served well to give an indirect push to this space.

India's growth wave may still not be at par when viewed against its global counterparts, but it is stacked well, largely due to a robust technical infrastructure and support of ecosystem players.

Mobile payments service providers

Mobile payments service providers have redefined the way in which businesses and consumers carry out routine payments by offering a bouquet of services and smooth customer experience while using their digital platforms. The thriving effect of mobile payments companies has been catalysed by an increasing demand for digital financial products by consumers, high innovation in technology and support of venture capitalists. The mobile payment service providers have been at the forefront in making effective use of 'mobile first' strategy to use all the features and abilities provided in a smartphone. This has led to putting together a bunch of services/applications in the form of super-apps. These super apps have been able to solve the limitations associated with mobile memory and power.

One such example of mix of innovative product offering and technology is the super application of Paytm, which connects with a user's daily needs instantly. It provides a large number of services on its platform ranging from recharges and bill payments, to travel and entertainment booking, city services like fastag, challan, donation, games through Paytm First games and financial services like loan, gold, insurance. QR code payments have become ubiquitous to cash in India, and Paytm has led the way in its adoption.

While mobile payments players with their high-end technological expertise are redesigning the financial services processes, incumbent players are also following suit and investing heavily in creating similar products of their own. This can be attributed to the evolving needs of Indian customers.

These demands have become highly dynamic, and prefer the following attributes in their experiences:

Ubiquitous: Omni-present, without boundaries and channels, shadowing them across all touchpoints	Integrated: systems that integrated the supply and demand dynamics of customer and merchant relationship	Contextual: modular payment options based on urgency, destination and payment type
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To tackle customer expectations across these experience attributes, mobile payments players are targeting customers across all major channels ranging from PoS, website and mobile. Innovations such as pull payments, slice payment (Equated monthly installments - EMI payments) and split payments (splitting payment with peers) are helping contextualise payment experiences among customers.

An example of a mobile payments service provider offering a holistic service portfolio to merchants is PhonePe⁴², which is working closely with over five million merchants across the country to enable the acceptance of consumer payments. As a value added service, they are providing a business application helping merchants grow their business by driving footfalls, building a stronger digital presence and managing their inventory and sourcing details.

Large mobile wallet players are looking beyond the traditional use cases with focus on mining payments data and offering services such as multi-wallet enterprise cards, micro Automated Teller Machines (ATM) services, B2B services, smart money applications, alternate credit scoring, etc.

Examples of mobile payments service providers leveraging newer business use cases:

- Paytm has tied up with a leading foreign bank in India to launch a co-branded credit card, with guaranteed cashbacks and non-expiring reward points accruing as wallet balances, encouraging higher spending on payments platforms⁴³
- PhonePe has opened up their platform for merchants to access the PhonePe customer base by opening up their own stores within the application⁴⁴
- Mobikwik has launched a Software as a Service (SaaS) based B2B product called Magic, which is an end-to-end solution for corporate processes, rewards and reimbursements⁴⁵.

Expanding the basket of services and diversification have helped mobile payments service providers to scale and build a platform essential to sustain high-volume and low margin business. It is also helping them move away from models which were essentially based on lucrative offers and cashbacks.

However, for mobile payments service providers to maintain their momentum and achieve profitability, they also need to target the wholesale market, comprising

42. Primary discussions with PhonePe, KPMG in India's analysis 2019

43. Mobikwik launches SaaS-based solution 'Magic', The Hindu Businessline, February 2018

44. Primary discussions with PhonePe, KPMG in India's analysis 2019

45. Mobikwik launches SaaS-based solution 'Magic', The Hindu Businessline, February 2018

retailers and wholesalers. Past few years have also seen an increased emphasis of Indian manufacturers on B2B e-commerce spending.

The penetration in B2B wholesale market might also depend on the regulator making necessary changes to transaction limits, given the high transaction size in the B2B segment.

Moving ahead, mobile payments providers are also focusing on payments transaction data analytics to get actionable insights on spending behaviour of consumers to increase engagement and acquire new customers.

Investors

The Indian mobile payments market has seen positive investor sentiment in its growing years, with large investments and acquisitions targeting fast-growing start-ups. However, the last two years have seen investors moving their focus towards fintech start-ups working towards building application and enablement layers across the mobile payments offerings. Some areas such as NFC-based payments applications, customer life cycle management, identity management and KYC, merchant onboarding, last mile connectivity, enterprise applications etc. are gaining higher preference among investors.

Given the high-volume, low-margin nature of the payments business, investors have increasingly preferred large, established players to help increase scale, especially in tier-3 and tier-4 cities.

Paytm has led the way in garnering the major share of investments followed by other players. Standalone mobile payments players have seen total investments of over USD3 billion since inception, with Paytm's funding of USD2.8 billion forming the largest share of the pie⁴⁶. A few examples of investments in recent times are:



Given the nature of this business, investors have been keen to fund companies which have rapidly expanded their user base, and are diversifying their product suite by technology innovations. The focus is especially on players that offer a holistic set of financial services (e.g. credit, micro insurance etc.), extensive last mile reach and strong distribution network build on partnership models.

Merchants

The merchant's uptake of mobile payments is directly related to the value received from using and accepting the payment provider's services. The expectation of

merchants from the payments providers is to help them provide bundled payment capabilities and build sustainable relationships with their customers. In India, mobile payments players need to help merchants integrate a mobile centric payment strategy, loyalty programme, new business services and strong capabilities, which could help merchants evolve in their value chain.

The merchant adoption has to be driven from several fronts such as:

Deeper integration of micro enterprises

Micro enterprise constitutes 99 per cent⁵⁰ of the Micro, Small and Medium Enterprise (MSME) segment in terms of number and the segment is most vulnerable to cash flow volatilities and constrained access to capital. Despite numerous initiatives to integrate this segment in the financial network, the operational challenges are huge and untapped.

There is a strong need to bring the ecosystem approach as the micro merchants do not take the decisions on their own and factor in the preferences of their suppliers and customers

The services offered to the micro merchants need to have association with the top line of their business rather than focusing on just improving operational efficiency

Holistic approach has to be followed in which the mobile payments product mix caters to all the challenges of the merchant. For example, higher transaction speed and automated reconciliations, add-on services such as digital credit, instant grievance redressal, easy and intuitive onboarding in different dialects etc.

Driving consumer adoption by revamping existing pastures

The merchant acquisition and business focus have to be designed keeping in mind the retail businesses and the impact mobile payments services will have on the merchant. There is a need to move from 'one size fits all' strategy to designing services as per different retail verticals. E.g. a petroleum merchant might have very different requirements from a mass merchant or an e-commerce merchant. Some of the factors which are worth considering are:

Is the experience provided after integration with mobile payments provider only about payments or is it intended to be complimentary to other customer engagement levels such as offers, loyalty, access to information, etc.?

Is the experience about providing omni-channel capabilities to the customers?

Is the focus of integration to tap the network of payments provider in terms of loyalty, offers, customer database, etc.?

46. Funding data, Traxcn, July 2019

47. PhonePe gets ₹697.9 crore from Singapore parent, Livemint, July 2019

48. Paytm raises \$300 million from Berkshire Hathaway, Livemint, September 2018

49. Payments firm MobiKwik raises \$3.38 mn in fresh funding, Techcircle, December 2018

50. Micro, Small, and Medium Enterprises in India – An Explainer, India Briefing, November 2018

The mobile payments service providers (MPSPs) are offering a holistic service portfolio to merchants and working closely with them across the country to enable the acceptance of consumer payments through their mobile applications.

Government incentives and programmes

Government of India has been the primary catalyst to provide the supply side push to the mobile payments ecosystem in the form of incentives and subsidies for consumers and merchants, modernised payment infrastructure, increased digital literacy programmes and ease of business set-up. These factors have led to a surge in the usage of mobile payments among the population.

The key drivers for mobile payments in India have been positive policy framework changes and government initiatives like launch of new payments systems such as UPI, Aadhaar-linked electronic payments and improvement of the digital infrastructure.

A multi-pronged approach has been taken to enable penetration of the digitally enabled financial platforms among the institutional and public communities. A few notable advancements on this front are:



Incentives and subsidies:

- BHIM cashback and referral bonus schemes⁵¹: Government of India launched a cashback scheme for merchants, incentivising transactions done by unique customers. A referral bonus scheme was also launched for customers for incentivising unique transactions and users
- The Government of India announced subsidies on digital payments such as 10 per cent off on payments for insurance policies, rail tickets and highway toll fees made via digital modes⁵²
- NPCI has launched a new category of UPI transactions to assist small merchants expecting inward UPI transactions worth INR50,000 per month to accept payments without paying any Merchant Discount Rate (MDR)⁵³
- Nil service tax on digital transaction charges/MDR for transactions up to INR2000 per transaction, further incentivising customers⁵⁴

- State e-wallets⁵⁵: Telangana launched the official e-wallet. Through T-Wallet, customers can make payments to government and private organisations for various services and in addition, also receive benefits from government like pensions, scholarships and Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) wages
- Launch of National Common Mobility Card (NCMC)⁵⁶ which is a national mobility card for toll and transit payments, streamlining multiple ways to make payments
- The Government of Rajasthan launched Bhamashah Wallet, the state's online payments application. It is intended to help users make payments at merchant points and government services such as electricity and water bills, in addition to making P2P and wallet to bank transfers⁵⁷.
- India Post Payments Bank has issued virtual payment addresses to its users, and introduced Assisted UPI – for them to be able to send and receive UPI-based payments through its Micro ATMs⁵⁸
- For businesses with turnover up to INR2 crore, the Government of India reduced the rate of deemed profit from 8 to 6 per cent with respect to the amount of total turnover received through banking channel/digital channels in 2016-17⁵⁹

Digital literacy programme for rural enablement:

- Lucky Grahak Yojana, Digi-Dhan Vyapar Yojana⁶⁰ and DigiVaarta⁶¹ have enabled sustained information, education and communication campaign led by NITI Aayog to make digital payments a mass movement in India
- DigiDhan Abhiyaan, the government's outreach campaign succeeded in enrolling over one crore rural citizens for digital payment methods, and over three lakh merchants for offering digital payment options to rural customers⁶²
- RBI has designed customized financial literacy content for multiple target groups such as school children, self-help groups, farmers, small entrepreneurs and senior citizens to be used by trainers in financial literacy programmes
- Under Digital Saksharta Abhiyan (DISHA)⁶³, the government aims to create awareness and access through 'Common Services Centres (CSC)' enabling centres to act as digital financial hubs, by organising awareness workshops on digital finance options and policies for rural citizens and enabling modes of services such as UPI and bank PoS machine

51. Launch of Referral and Merchant Cashback scheme for BHIM users, NPCI, June 2017

52. India's discounts for online payments a global first, Livemint, December 2016

53. Introduction of P2PM category in UPI for unorganized or small merchants, NPCI, June 2019

54. Government to bear MDR charges on digital transactions up to Rs 2,000, EconomicTimes, December 2017

55. Government of Telangana, T Wallet - Anytime Anywhere digital payment option for Everyone, July 2019

56. National Common Mobility Card, Wikipedia, July 2019

57. Bhamashah Wallet, Inc42, August 2018

58. Remittances & Fund Transfers, India Post Payments Bank, July 2019

59. Govt gives tax break to small businesses on digital receipts of money, Economic Times, December 2016

60. Lucky Grahak and Digi-Dhan Vyapar Yojana, Press Information Bureau, December 2016

61. DigiVaarta to popularize Digital Payments, Press Information Bureau, September 2018

62. DigiDhan Abhiyan, Digital India, January 2017

63. Pradhan Mantri Gramin Digital Saksharta Abhiyan, Digital India, January 2018

- Ministry of Electronics and Information Technology (MEITY)⁶⁴ has been entrusted with the responsibility of leading the initiative on 'Promotion of Digital Transactions including Digital Payments' including training and workshops on digital payments awareness of UPI, USSD, Aadhaar Pay and IMPS
- The 'Vittiya Saksharta Abhiyan'⁶⁵, an initiative of the Ministry of Human Resource Development, was launched to engage those in Higher Education Institutions to promote and motivate merchants and consumers to use a digital payment modes for fund transfers

Technology innovation

- Faster payments network: IMPS in India is the sole payments network system to get a level five rating⁶⁶, ahead of the United Kingdom, Denmark, Singapore, Japan, China, Switzerland, and others, as per FIS's Faster Payment Innovation Index (FPPII). It forms the bedrock of UPI-based transfers in India
- The BHIM app was released by NPCI with a range of functionality based on the UPI platform⁶⁷
- Integrated payments platform for government services: The Ministry of Electronics and Information Technology (MEITY) launched PayGov⁶⁸ – a national payment service platform that state governments can integrate their applications with - enabling citizens to pay through online or mobile modes for availing government services, tax payments and utility bills.

Regulatory ecosystem

The Reserve Bank of India (RBI) has played a critical role in development of the mobile payments space in the country in a phased manner, taking into account, interests of both, the industry and the consumers. Its key objectives have been to create a well-defined regulatory framework while achieving the objectives of financial inclusion, less circulation of cash in the system and customer convenience without compromising on security and stability of the financial system.

In line with evolving consumer and industry demands, and the need to ensure a healthy growth of the mobile banking ecosystem, the regulator has issued regulations and guidelines which create a robust supervisory framework for the financial service providers. The guidelines touch upon varied aspects such as capital and net-worth requirements, data handling requirements, launch of different digital payment modes, etc. thereby impacting these players in different ways. Some of the key regulatory changes are captured below:

- **Digital payment ecosystem:** The Payment Systems Vision of the RBI envisages a 'less-cash' economy through the launch of products such as the Unified Payments Interface (UPI), BharatQR and BHIM. Additionally, contactless payment systems (i.e. near field communication) are permitted for small amounts of payments i.e. less than INR2,000 without any additional factor of authentication⁶⁹
- **Data localisation:** Technical innovation is impacting data protection more rapidly than financial services. In the context of data protection, this means enabling data-driven innovation while ensuring responsible use of data and protection of individuals' rights and interests⁷⁰. The Government of India has recognised this and introduced the draft Personal Data Protection Bill 2018 incorporating recommendations made by the Justice B. N. Srikrishna Committee⁷¹. The Bill, among other things, requires that companies save a local copy of all personal data that is stored outside the boundaries of India⁷² and process 'critical data' only in India⁷³ on the considerations of national security and access. Even before this, in April 2018, the RBI issued a Directive⁷⁴ to all payment system operators (PSOs) to store their data relating to payment systems operated by them only in India
- **Interoperability between wallets:** The guidelines require wallet players to ensure interoperability through the Unified Payments Interface, enabling users to transfer balance and pay for services between different wallet providers. A few wallet players have begun a pilot programme to test interoperability requirements
- **Increase in minimum net-worth requirements:** The mobile wallet operators are required to have a minimum net-worth of INR50 million at the time of making the application and are required to increase it to INR150 million within three years from the date of obtaining authorisation as a wallet operator which must be maintained at all times⁷⁵
- **Changes and standardisation in KYC rules:** During the year of 2016, the Indian Government passed Aadhaar (Targeted Delivery of Financial and other Subsidies, benefits and services) Act (the Act) paving the way for use of Aadhaar number for availing benefits under various government welfare schemes. Under the Aadhaar Act, each resident Indian is required to provide his/her demographic and biometric details to the Unique Identification Authority of India (UIDAI). Even fintech companies started using biometric details to undertake KYC of their customers. This led to a significant change in the traditional paper-based

64. Digital Payment Division, Ministry of Electronics & Information Technology, July 2019

65. Vittiya Saksharta Abhiyan, Cashless India, July 2019

66. Faster Payments Innovation Index, FIS, 2018

67. Indian Express, BHIM app for UPI-based payments, February 2018

68. Centre asks states, Union Territories to integrate with PayGov India, Business Standard, April 2018

69. Card Payments – Relaxation in requirement of Additional Factor of Authentication for small value card present transactions, Reserve Bank of India, May 2015

70. Regulatory Sandboxes in Data Protection: Constructive Engagement and Innovative Regulation in Practice, Centre for Information Policy Leadership, March 2019

71. A Free and Fair Digital Economy Protecting Privacy, Empowering Indians, Data Protection Committee, July 2018

72. Draft Personal Data Protection Bill, 2018, PRS India, 2018

73. Regulatory Sandboxes in Data Protection: Constructive Engagement and Innovative Regulation in Practice, Centre for Information Policy Leadership, March 2019

74. Storage of Payment System Data, RBI, April 2018

75. Master Direction on Issuance and Operation of Prepaid Payment Instruments, Reserve Bank of India, February 2019

KYC process. The Aadhaar Act, hailed as a historical revolution in the Indian economy, aided banks, financial institutions, especially fintech companies to leverage upon their technological skills to undertake the KYC process electronically thereby resulting in saving of paperwork, time, costs, etc.

In September 2018, the Supreme Court of India in its landmark judgement⁷⁶ held that the use of biometric details by any private company for authentication of KYC information is unconstitutional⁷⁷. This resulted in switching to a traditional KYC verification process by all private enterprises except banks providing government subsidies. That pushed the cost of doing KYC significantly higher and it also increased the time required in the process. Pursuant to the Supreme Court judgement, the RBI amended its KYC directions to mandate that regulated entities shall ensure to obtain only redacted/blacked out Aadhaar card from the customer wherever the customer voluntarily submits the Aadhaar.

Subsequent to the Supreme Court's judgement, the government has introduced an offline Aadhaar verification facility whereby the customer may use Aadhaar on a voluntary basis for KYC verification. In such a case, the customer does not share his/her Aadhaar number with service providers. Such offline verification is done through use of QR code printed on the Aadhaar number or by generating an XML/PDF from UIDAI⁷⁸

- **Regulatory Sandbox (RS):** RBI along with other Indian regulators such as the Insurance Regulatory and Development Authority of India, the Securities and Exchange Board of India etc. proposed their respective drafts for RS ('Innovation Sandbox', 'Enabling Framework for Regulatory Sandbox' etc.) to facilitate testing of new digital and tech-based innovation. The RBI and other regulators are yet to notify the final regulatory sandbox framework. Once notified, it could entail multiple benefits to different stakeholders. The RS is potentially an important tool which should enable more dynamic, evidence-based regulatory environments that learn from, and evolve with, emerging technologies⁷⁹. Each Sandbox participant with clear objectives such as reducing costs to consumers undertakes its innovation testing on a small scale for a limited duration with a limited number of customers⁸⁰
- **Boost to digital payments:** The government has proposed to amend the Payment and Settlement Systems Act, 2007 to provide that no bank or system provider shall impose any charge for using electronic modes for payments to a business that has total turnover exceeding INR500 million⁸¹. While this is

aimed at promoting the use of digital payments, in the absence of any income to the banks and system providers this might pose a challenge in terms of recovery of costs and earning profits.

Banks and financial institutions

The Banking, Financial Services and Insurance (BFSI) ecosystem in India is witnessing a significant impact of the penetration of mobile payments.

The incumbents (e.g. large public and private sector banks) in the BFSI space have adopted varying strategies to respond to the rapid growth of mobile payments in India; choosing to either build or ramp up their own payments ecosystem and UPI apps or collaborate with other mobile payments that can complement existing services.

In establishing their own mobile payments ecosystem and increasing mindshare in the digital payments space, banks have taken a series of steps in order to remain competitive.



Native Mobile Wallets

Public and private banks have launched their own complete digital payment and purchase solution



Dedicated UPI applications

Multiple banks have launched their own UPI applications, acting both as issuer of payments as well as payment service providers



Transaction fees for transfers

To address increasing competition to cards segment, some banks have levied a charge on wallet to bank transfers for merchants

In an effort to collaborate with leading mobile payments players, a few banks have also forged partnerships to offer an innovative payments interface, tap into a larger customer base and provide incentives:

- A few banks have tied up with key mobile payments providers to launch co-branded credit cards offering a plethora of incentives, leveraging the payment company's transaction data to assess creditworthiness, increasing credit card usage and driving down customer acquisition costs

76. Justice K.S.Puttaswamy (Retd.) v. Union of India, Supreme Court of India, September 2018

77. Key Highlights of the Aadhaar Judgment, SFLC, September 2018

78. Aadhaar Paperless Offline e-kyc, UIDAI, July 2019

79. Draft Enabling Framework for Regulatory Sandbox, Reserve Bank of India, April 2019

80. Regulatory Sandboxes in Data Protection: Constructive Engagement and Innovative Regulation in Practice, Centre for Information Policy Leadership, March 2019

81. Budget 2019: MDR scrapping to boost digital payments, Economic Times, July 2019

- Private lenders and payments companies are collaborating to offer short-term credit for end users, thereby democratising access to credit to those with less disposable income – Mobikwik has partnered with a leading NBFC to target new-to-credit (NTC) customers and small business owners with instant credit offers between INR5,000 – 60,000⁸²
- Banks and mobile payments providers are partnering to enable creation of a fixed deposit when the consumer's wallet balance moves above INR1 lakh at end of a day. E.g. Paytm has partnered with a leading bank to book a fixed deposit on a customer's behalf for the amount in the wallet that exceeds INR1 lakh at end of a day⁸³



82. MobiKwik's 'Boost' to offer instant loan in 90 seconds, Economic Times, October 2018

83. Fixed Deposit, Paytm, July 2019



Building platform-centric business services



Overview

Emergence of MPSPs in India has been a catalyst for the transformation of the mobile payments ecosystem. In previous sections, we have observed that mobile payments as a business is still in the exploration phase in many geographies while in others it has gained prominence driven by focused government initiatives, robust regulatory supervision and evolving form factors. All these factors have driven mobile payments service providers to evolve their business services and delve into different business avenues and alternate revenue streams. Increasing number of mobile payments service providers are embracing a 'Platform Centric' approach for manifesting business services of third parties and providing a holistic solution for customers.

KPMG has identified five business services that have the potential to enable the mobile payments ecosystem, and if harnessed properly can open numerous prospects for incumbents and mobile payments service providers. In this section we have identified some of the leading business services provided by MPSPs on their application platforms. The following figure depicts the business services along with a maturity scale from an Indian context.



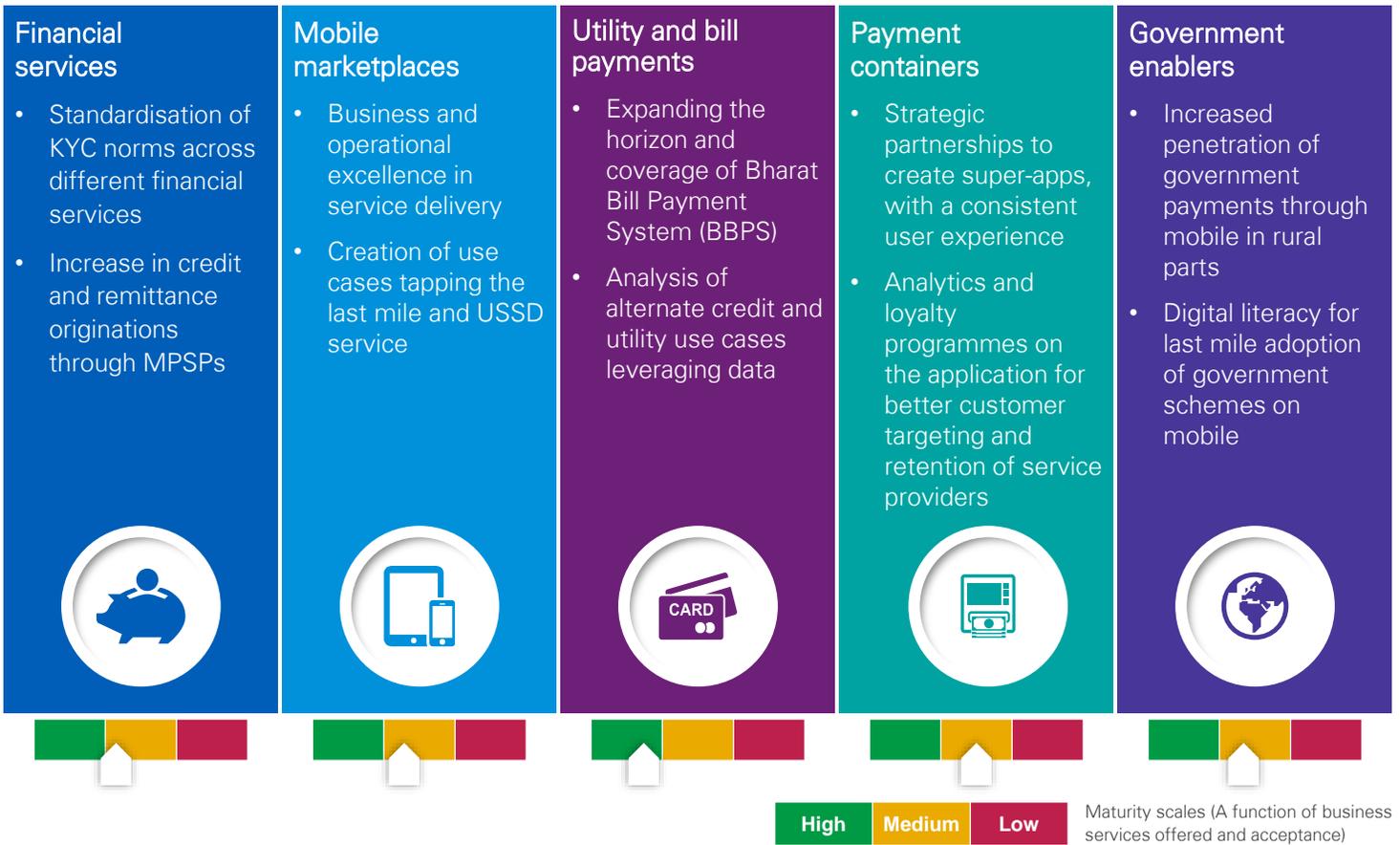
Mobile payments in India has embarked on its transformation journey and is catching up fast with global peers in terms of adoption. The uptake is being driven by demand pull and a progressive regulatory regime .

Vishwesh Padmanabhan
Head

Technology and Digital Consulting
KPMG in India



Emerging business services by MPSPs



Utility and bill payments

Overview

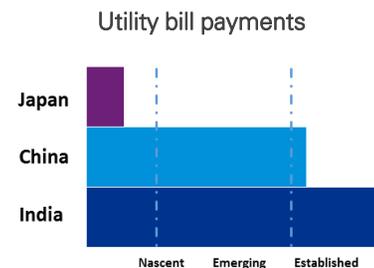
Bill payment service is an aggregation based service line, where MPSPs get into agreements with organisations that provide essential utility services. Globally, the growing sophistication of mobile payments ecosystems has driven adoption of 'pay-as-you-go' utility bill payments concept, which has led to increase in payment transparency, reduction in operational costs and increase in last mile inclusion.

A key enabler of this model has been collaboration between utility service providers and mobile operators, but the move to platform led business model is redefining the contours of this business line. Various countries have implemented a centralised platform model to offer interoperable bill payment services to onboard billers, agents and customers. Bill payment platform model in India has bridged the gap and increased collaboration in the current ecosystem. In China, WeChat's app-within-app platform model has allowed third party utility providers to embed their content on WeChat and offer their services.

This service line has also been adopted by a leading Indian e-wallet player to enter in the Canadian market and emerge as one of the top financial apps in mobile app stores in Canada within three months⁸⁴ of its launch.

Various new services offered on such platforms like credit cards, tax payments, education fees, donations, expense tracking, etc. are further building a strong customer value proposition.

Following graph shows a high level comparison of the ecosystems in Japan, China and India to rate the level of utility and bill payment services provided on the MPSP platforms:



- A graph has been plotted with country v/s weighted scores as per different service lines. We have considered
 - A sample of MPSPs from India, Japan and China have been taken for comparison
 - Utility and bill payments services has been broken down into granular services
 - A weighted score is calculated based on players offering these services and aggregated at country level

84. Paytm Labs Inc. fulfilled \$2 million in the first three months since their Paytm Canada app launch, Newswire Canada, June 2017

Way forward

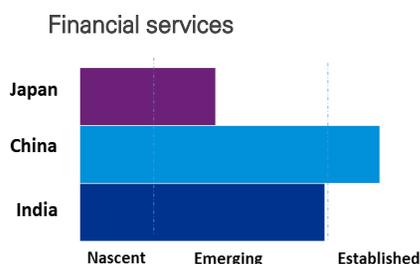
In India, the emergence and innovation in the utility and bill payment service line could lead to another wave in digital inclusion. The newer bill and utility service delivery models can help build intelligence on users and the essential services they use, build credit history of the unbanked and thin file customer on basis of financial history, predict consumption patterns to determine demand and supply for essential services (water, energy, etc.) and form a base for MPSPs to increase average revenue per user (ARPU) and customer stickiness on their platform.

Financial services

Digital financial offerings on mobile can significantly improve the convenience and affordability parameters of financial services. The recent amendments in regulations across geographies have opened up opportunities for MPSPs to offer financial services on wealth management, account management, insurance, lending, etc. using their mobile platforms. Mobile payments service providers have also forayed into SME lending, stock broking and remittances to provide holistic services to the customers. With simplified customer onboarding processes and mandatory validations, services such as investments, borrowings, deferred payments, advisory, etc. have gained high traction in large number of Asian countries including China, Singapore and India.

China, India and Japan are amongst the top four countries in the Asia Pacific having the highest penetration of smartphone users. In China, the proximity mobile payments user penetration is expected to be around 81 per cent in 2019 as compared to 33 per cent and 25 per cent in India and Japan respectively. In India, the count of proximity mobile payments users is growing at a CAGR of 31 per cent against 10 per cent for China and 12 per cent for Japan for the period of 2017-2022 which shows the rise of mobile payments in India⁸⁵. On a global scale, India tops the regular mobile banking usage as a proportion of total online consumers having current accounts at about 57 per cent⁸⁶.

The below graph shows a comparison amongst India, China and Japan on the number of financial services offered through MPSPs platforms.



85. Mobile-PoS-payment, India, China and Japan, Statista, July 2019

86. Mobile-PoS-payment, India, China and Japan, Statista, July 2019

87. 29 Fascinating M Commerce Statistics for 2019, 99firms, April 2019

- A graph has been plotted with country v/s weighted scores as per different service lines. We have considered
 - A sample of MPSPs from India, Japan and China have been taken for comparison
 - Financial services has been broken down into granular services across credit, savings, investments, etc.
 - A weighted score is calculated based on players offering these services and aggregated at country level

Way forward

For India, MPSP's shall drive and play a significant role in spreading financial literacy and inclusion, which can help penetrate the unbanked economy. The regulatory bodies in India are likely to play a major role by further increasing the number and types of banking licences to promote digital payments with the objective of serving the unbanked and the underserved.

Mobile marketplace

Overview

The emergence of the 'payment as a platform' model has enabled the mobile payments service providers to integrate the offerings of the third party ecosystem and build hybrid mobile marketplace models.

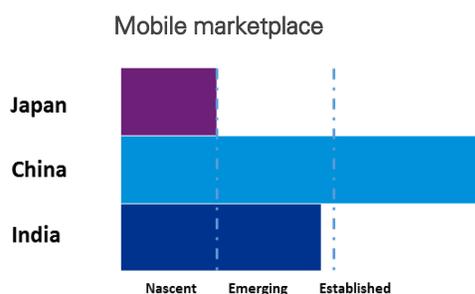
In the U.S., m-commerce has registered 39.6 per cent of total e-commerce sales in 2018⁸⁷. The increased penetration has been possible due to an integrated shopping experience for customers on mobile applications, large distribution/partnership networks of MPSPs, usage of customer data analytics and real-time payment and settlement options for customers and merchants.

Different MPSP offerings, mobile/online marketplaces have adopted varied models to penetrate the market. For instance, a leading e-commerce player in India started with online book sales and expanded into other categories such as clothing, electronics, etc. available on a mobile application. One of the leading online marketplace players in India offers different business lines through separate dedicated mobile applications for video and music streaming.

MPSPs have been extremely cognizant of managing the logistical challenges associated with the m-marketplaces and have adopted various models such as owning a warehouse, owning the delivery staff and partnering with other logistics providers. MPSPs have extensively leveraged the vast network of local merchants and stores for creating a unique marketplace extension and sales delivery points for their applications. MPSPs have leveraged the escrow model to protect the interest of buyers and sellers on the mobile platform and increase trust in merchants.

In several emerging economies with a deep penetration of mobile money, MPSPs have also partnered with small retailers to offer their product listing and fulfill orders through hyper-local delivery model. For instance, a leading hyperlocal logistics provider in Indonesia has adopted this model by providing a marketplace to small retailers and hyper-local delivery which has gained good ground⁸⁸.

KPMG has analysed and compared the ecosystems in Japan, China and India to rate the level of mobile marketplace services provided by MPSPs:



- A graph has been plotted with country v/s weighted scores. We have considered
 - A sample of mobile players from India, Japan and China
 - Services has been broken down into multiple granular services
 - Based on our research, we have calculated a weighted score based on players services and clubbing at country level.

As per our analysis, India is rapidly emerging in the mobile marketplace business with players foraying into the mobile marketplace model but are yet to gain significant foothold in comparison to China. The China market has been driven largely by mobile service providers offering super apps and a large number of services where different product lines are built on a single application. This has led to increased potential of upsell, revenue diversification and product and service coverage.

In India, some of the factors which need to be regularised are stickiness of customers on platform, convoluted localisation of regulations and operational intricacies of implementing these models. On the other hand, Japan is at the adoption stage for this service line, where very few players are in the mobile marketplace space and low mobile payments and m-commerce penetration is posing a challenge.

Way forward

Mobile payments service providers are well positioned in the Indian market to overcome the challenges associated

with e-commerce and other specialised solutions due to presence of extensive customer base on the mobile platform and cash in/out network of agents. A lot of emphasis has to be laid on the right selection of product offerings, target customer segments and merchant network (online/offline). Different service lines such as e-commerce, home services, travel, entertainment, etc. have different revenue, operational and success challenges. One of the approaches that can be taken from the successful case studies in the online marketplace is to start with a specific offering and diversify rapidly. Newer use cases on USSD need to be incorporated to increase the reach to the rural hinterlands and population with no smartphones.

There is no 'one size fits all' model for mobile marketplaces and leading practices across the geographies have to be assimilated to create an India based model based on efficient logistics management, holistic product coverage, superior technology, efficient data management and proactive customer support.

Payments container

Overview

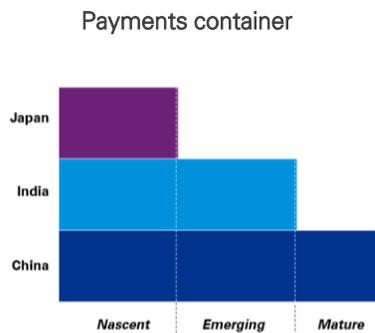
Payments containers have emerged as a differentiated service line in the mobile payments landscape, acting as a single point for all the payment needs of the customer. Through a payments container, mobile payments service providers are not only providing multi-channel and secure payments, but also using mobile payments applications to offer a suite of services serving multiple needs of an end user from a single point, thus taking the form of a 'super-app'.

On a pure payments front, mobile payments service providers are increasingly working towards integrating multiple payment modes through a single application, with a consistent experience. MPSPs in India, which started with P2P (Peer to Peer) transfers using mobile numbers have moved to adopt QR-based payments to enhance payments experience at merchant points. With the advent of UPI in India, MPSPs have also integrated it as a payment option in their native apps. On the services front, MPSPs in India have attempted to integrate multiple offerings, ranging from P2P payments, merchant payments to financial services, investment services, short-term credit, etc. through a single mobile application or web interface. Providing complementary services to end users through a single application has the potential to increase user stickiness and cross-sell opportunities, thereby increasing average revenue per user. For example, PhonePe in India has built holistic access to different payment systems and partnered with wallet providers to integrate them in the PhonePe payment container⁸⁹.

88. Grab Indonesia bets on hyperlocal strategy with strong customer focus to lead market share, Deal Street Asia, February 2019

89. Primary discussions with PhonePe, KPMG in India's analysis 2019

KPMG has analysed and compared the ecosystems in Japan, China and India to rate the level of payment container services provided by MPSPs:



The China market is ahead of India when it comes to the payments container or a 'super-app' model. The two largest payments providers, Alipay and WeChat Pay, which control a majority of the market, have evolved to provide a suite of products through a single app, shifting towards a platform business model. In addition to a complementary suite of financial products, MPSPs in China have also provided non-traditional use-cases such as food ordering, cab hailing, digital identification, appointment bookings (Specially in G2C services), in-app commerce, enterprise messaging, etc. MPSPs in Japan are at a nascent stage when it comes to providing a payment container model for end users. While some early players attempted to provide a container model, newer payments players have remained limited to merchant payments and P2P payments. 'Osaifu-Keitai'⁹⁰, launched in 2004, can be used for payments in public transport, movie tickets, merchant payments, etc. The application is capable of recharging the services automatically through a standing mandate.

Way forward

Going ahead, MPSPs in India need to supplement their existing product suite with not only additional services, but also emerging payment modes. They must seek strategic partnerships to expand their bouquet of services through their native apps, keeping in mind a consistent user experience across services. Additionally, MPSPs can also mine payments transaction data to offer targeted products to different categories of customers. In building a platform of products, MPSPs can attempt to build loyalty programmes to tie together their service portfolio and increase user stickiness on the platform.

Government enablers

Overview

With the push to digital economy from most of the governments globally, many have launched initiatives

on their own or in collaboration with MPSPs to enable the mobile payments landscape. The initiatives are targeted towards increasing the operational efficiencies and payment transparency in government related services and G2C transactions (Government to Citizens).

China

MPSPs have a digital platform enabled for e-tax, traffic ticket and government services payments

Japan

Aims to raise ratio of cashless payments to 40 per cent by 2025 through initiatives such as e-money salary payments⁹¹

Mauritius

12 per cent increase in tax revenues in the year after mobile payments facilities were adopted⁹²

Afghanistan

Teachers and members of the Afghan National Police force now receive their monthly salaries from government via mobile payments⁹³

Kenya

Buying and selling of government securities through m-akiba, a mobile based product⁹⁴

In India, many state governments have launched e-wallets to aid citizens with state level benefits and welfare schemes such as direct benefit transfers, payments support for government schemes, utility bills, property taxes, etc. In enabling mobile applications and payments for various services, the government must look at partnering with private payment companies to leverage their large, existing user base, as well as developing applications with a superior user experience.

Way forward

Over the next decade, MPSP collaboration with the government has the potential to accelerate low cost mobile adoption models for government to citizen payments. USSD-based payments can be widened to be accepted in government services and various other alternatives using feature phones can be evaluated to promote higher adoption in areas where connectivity is a challenge. One of the factors which will have to be given due consideration is the growth in cybercrime coupled with proliferation of mobile payments. Stronger authentication options, robust cybersecurity framework, periodic cyber risk assessments, integrity mechanism and real time forensic analysis need to be implemented to prevent payment frauds. The government's efforts towards the elevation of these cutting-edge technologies, and their systematic penetration can lead to a boundlessly prolific cashless economy.

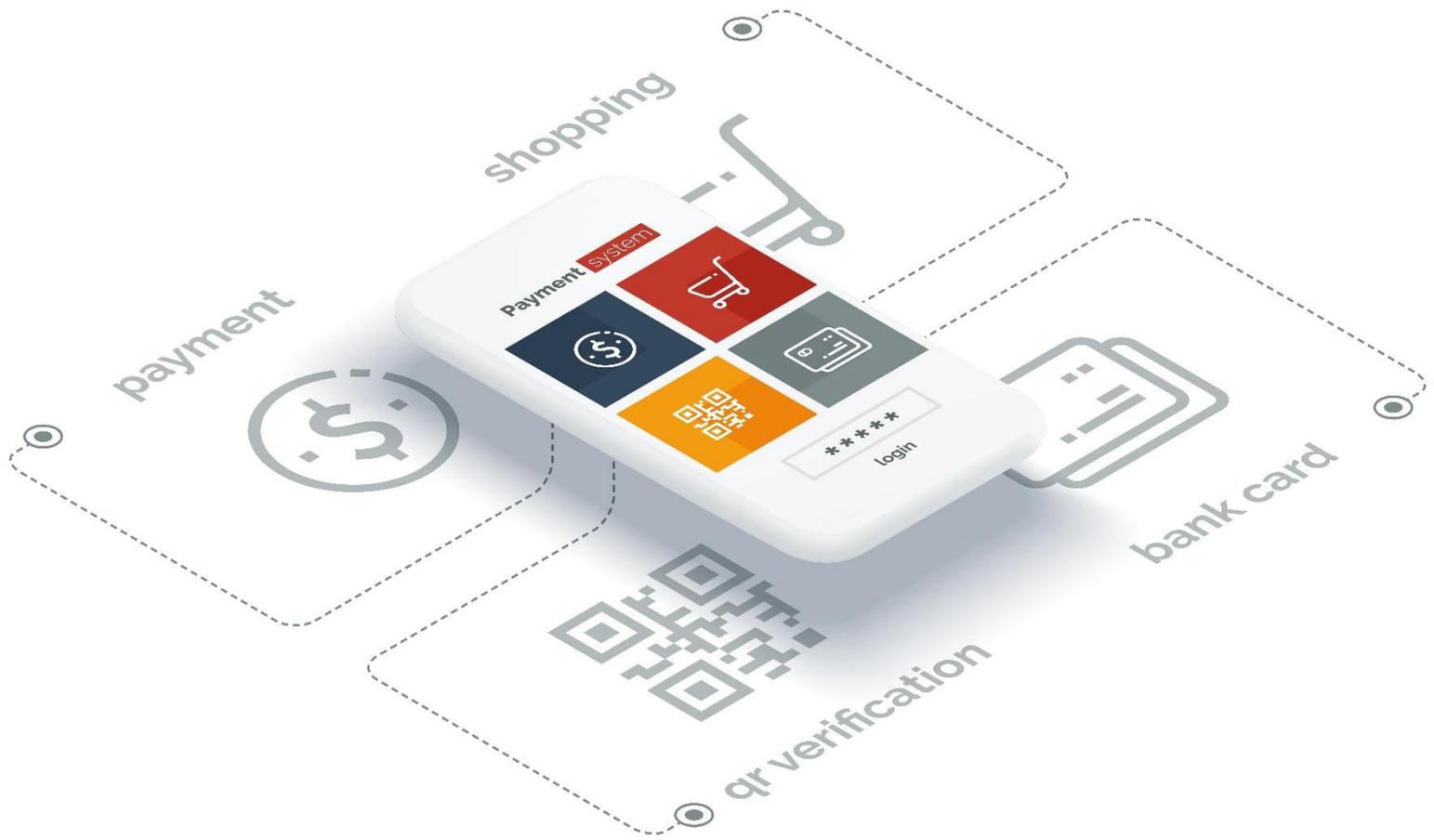
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Learning from global and local experience



Recommendations that can help transform India into a leading mobile payments ecosystem

The adoption of mobile payments services in India is increasing at an accelerated pace with contributing factors such as transition to open banking, emergence of new market players, evolving form factors, growing value added services, robust regulatory frameworks and customer centric approach. A sustained commitment from the government, regulators, industry and the mobile payments service providers has been the driver for this revolution. The future could see a realignment of the roles of ecosystem participants and a consolidation of market players.

In our previous sections, we have analysed mature and emerging markets to understand their growth drivers and potential. The interplay of growth drivers was analysed to understand and foresee the ecosystem growth. We have observed mobile payments innovation being driven by newer business models established by fintech companies and incumbents (existing financial services players). Examples of approaches implemented in different markets are:

Fintech driven innovation

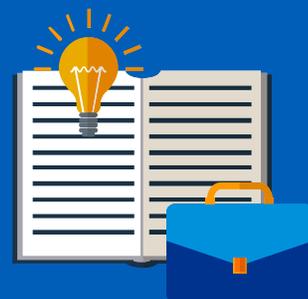
An approach focused towards collaborative orchestration between fintech companies and ecosystem partners to drive innovation in mobile payments

Incumbent driven innovation

Strategies adopted by incumbents anchoring the development of payment innovation by creating in-house services and leveraging customer trust

We have summed up our learnings and insights from the global and local market analysis to present our recommendations in the tables below, across the following categories:

- Recommendation to the government
- Recommendation to regulators
- Recommendation to financial institutions
- Recommendation to mobile payments players
- Recommendation to merchants



Recommendation to the government:

Incentivise using cash discounts for merchants, e-commerce players and customers in customer to government (C2G) payments (government services - utility, railways, etc.)

- Setting targets for digitising all customer to government financial transactions by a particular year and further incentivising customers adopting mobile payments modes (C2G payments)
- Wherever feasible, the government can look to incentivise C2G payments made using mobile payment modes for a limited period to boost adoption. Given the demand side challenges faced in mobile payments due to hesitation of customers in paying through formal channels to merchants, incentives can also be provided to customer via merchant channels



Initiatives to increase penetration of USSD adoption

- Given a significant population is still outside the smartphone net, the government can focus on increasing promotion and innovation in the USSD based payments
- The cost associated with USSD payments for customers can be reviewed
- Efforts can be made to prioritise USSD signals to reduce the session drop volume.



Bridging gap between digital lending infrastructure and digital payments

- The government and the RBI can work towards creation of the digital infrastructure (as stated by the UK Sinha Panel MSME report) which would integrate the digital lending and payments value chain. Some areas which could be considered for execution are - automated reconciliation of invoices, upgrade of UPI mandate to include event based triggers for cash flow lending and automated lien marked in the borrower's account. For smaller enterprises, removing the structural barriers and improving interoperability would help address the issues related to their credit evaluation/underwriting and can lead to instant credit decisions



Forging global alliances for smooth retail mobile payments of low value and high velocity

- The government can focus on partnering through an extension of UPI networks or forging global alliances with neighboring governments and regulators. These partnerships can enable social and inclusive use cases such as remittances for people visiting India for medical reasons etc.



Focus on targeted digital literacy programmes

- The government can focus on creating awareness on mobile payments through regional language advertisements and systematically planned digital literacy programmes. The programmes can focus on areas such as cybersecurity in payments to increase level of trust in mobile payments
- The government can collaborate with industry players to build consensus and harmonise standards of visual representation of payment systems in rural hinterlands to improve both merchant and end customer experience
- To build digital payment literacy at a young age, basic digital payment literacy concepts can be incorporated in school curriculums
- Government can look to build a sustained support for digital literacy programmes such as PM Gramin Digital Shaksharta Abhiyan using various initiatives such as additional deployment of funds (if required) or increasing effectiveness of training delivery by upgrade of digital infrastructure.



Offering a unified payment platform for citizen services and identification of high frequency use cases for mobile payments adoption

- The government can set targets to upgrade infrastructure in collaboration with states to implement a common and convenient mobile payments solution to offer services such as bus, metro, local trains, national railways, toll payments and autos, taxis and airlines.
 - Analyse existing payment flows (utility payments, tax payments etc.) in the states to identify opportunities that can be brought in the ambit of mobile payments.



Recommendation to the government:

Focus on creating micro clusters of villages for mobile payments

- Government can look for private tie-ups with corporates and start-up community and take 'Digital Village' initiative to the next level.



Recommendations to mobile payments service providers:

Offer working capital credit products in collaboration with banks and other financial institutions to increase expansion and stickiness in the merchant segment

- MPSPs can look to provide formal short-term credit facilities to merchants and retailers. This could help scale the transaction volumes and increase merchant stickiness.



Helping merchants evolve in the 'now economy' and craft customer centric strategies

- Provide merchants with tools and intelligence to analyse the customer transaction patterns and make them understand how a customer interacts with their business. Supporting merchants with tools to manage payment reconciliation, inventory management, etc. Example: A payments management platform can be seen as the next phase of bringing merchants in the mobile payments ecosystem. The system can encompass payments reconciliation, payments management to third party vendors, invoicing, etc.



Aggressive scale up of merchant onboarding with focus on lower tier towns

- MPSPs need to look towards expansion in the rural towns and hinterlands for onboarding smaller and mid-size merchants. The focus needs to shift towards cost effective and scale oriented expansions
- The evolution of mobile form factors is leading the reduction in cost of penetration in the lower tier towns and these form factors have to be penetrated across villages.



Tap on cultural incentives and customer sentiments to increase adoption of mobile payments

- Mobile payments service providers can look to create target strategies for customers based on cultural practices in India. For example, gifting digital money on occasions like Raksha Bandhan or Diwali can be incentivised. Such initiatives have been successful in countries such as China where the MPSPs introduced digital red envelopes.



Instant gratification for the last mile customers and 24*7 help desk support

- All mobile payments providers, whether small or large scale need to establish a streamlined system of providing customer and merchant support. First level point of resolution needs to be defined for the customers with appropriate escalation points
- The customer support provided should be in the native language of the customer and considering his/her level of digital literacy to ensure proper resolution
- MPSPs can look to provide incentives and cashbacks to the farmers who are linking their produce and routing payments through mobile enabled Mandi platforms.



Enhance global reach to a unified experience across borders

- Work towards enhancing global outreach by collaborating in operations with international ecosystems and help to create standard global offerings for mobile payments.



A holistic service provider for customers

- Mobile payments service providers can look to partner with different service providers to implement solutions for consumers' everyday needs. A successful example is a player in China that offers a one-stop application where all daily concerns can be handled.



Enabling indirect push through innovative e-commerce with use-cases such as group buying on mobile applications



Recommendation to financial institutions:

Creation of conversational, contextual and voice enabled mobile payments experience for urban and rural customers

- Financial institutions need to use mobile phones as a profound catalyst for digital payments. They need to focus on aiding the payment experience of urban and rural customers through conversational and voice enabled experiences
- Financial institutions can create rural payment interfaces to engage via regional language text/voice messages and improve the ability to understand the underlying intent of the users.



Monetise data by partnering with MPSPs to offer personalised experience with customer consent

- Through partnerships and with user consent, financial institutions can look to leverage the large amounts of transaction data available with mobile payments service providers. Drawing on traditional and non-traditional data sources, they can work to ensure better customer targeting and increasing penetration of credit products, credit cards and other banking products among their customers.



Promotion of mobile B2B payments by collaboration with MPSPs and other banks to offer escrow services



Developing a global peer-to-peer mobile payments ecosystem:

- Financial institutions can develop a global service for mobile person-to-person payments that various banks can plug into. This can be made possible by adopting an open Application Program Interface (API) architecture, working of existing bank accounts, including agency networks and cash-out capabilities.



Addressing dormancy of last-mile bank accounts to create a digitally active account

- The high dormancy of last-mile bank accounts opened through programmes such as Pradhan Mantri Jan Dhan Yojana (PMJDY) needs to be addressed to increase adoption of digital payments. Creating awareness through regional mediums and pushing mobile payments modes such as UPI to alleviate challenges of visiting bank branches may help in achieving not just financial inclusion, but digital financial inclusion
- Incentives, subsidies and cashbacks could be given to the last mile customer owning a PMJDY account to transact digitally at public distribution counters, bus/rail booking counters, government hospitals, etc.



Interoperability of business correspondents

- Banks can look to allow their business correspondent network to be interoperable, i.e. allow them to serve multiple banks at the same time. This can support the business correspondent network in increasing transaction volumes and result in higher monthly revenues for the agents.



Recommendation to merchants:

Adoption of mobile payments by smaller merchants to leverage new developments such as P2PM (A new category under UPI targeting merchants having expected inward transaction flow less than or equal to INR50000 per month)

- With the initiative of NPCI to introduce a new category of UPI payments called P2PM, smaller merchants should leverage its benefits such as no acquirer MDR and instant settlements.



Provide financial services by offering financial assistance to customers

- Merchants can forge partnership with banks and fintech companies to create mobile payments awareness and cross-sell financial products to tech-savvy customers who make mobile payments by acting as a digital sales point for the institution



Increase adoption of cost effective mobile payments modes

- Merchants need to adopt cost-effective modes such as QR
- Medium and large merchants with a customer base that uses NFC-based applications or cards must upgrade their PoS terminals to ensure ease of transaction and lower turnaround time (given that NFC-based payments don't require a PIN on transactions up to INR2000). Efforts have to be taken to ease the infrastructure setup and expand the NFC enabled card network.



Recommendations to regulators

Standardisation of KYC procedure

- Different regulators mandating KYC process could collaborate to have a common KYC across services such as banking, asset management, insurance, mobile money management, telecom, etc. KYC data of customers could be allowed to be used across varied regulated businesses unless there is any change in information submitted earlier.
- Additionally, to lower the cost of KYC process, the following may be considered:
 - The charges levied by UIDAI and / or Central KYC Record Registry could be rationalized
 - Facial authentication and consent based KYC may be evaluated for cost effective and time efficient KYC process.



Continuation of minimum-KYC wallets

- In order to prevent customers shifting back to cash transactions and promote digital economy, the minimum KYC wallets may be continued without there being a need to conduct full KYC. To prevent misuse, following safeguards may be built-in:
 - No cash loading/withdrawal may be permitted to these wallets; and
 - Loading to be permitted only from wallet holders' own bank account/credit cards which are fully KYC compliant.



Allowing accounts opened using OTP (one time password) based e-KYC (Aadhaar offline verification) to continue as minimum-KYC accounts

- Accounts that have been opened using OTP based e-KYC could be treated at par with minimum-KYC wallets after the lapse of 12 months instead of mandating closure of such accounts in the event of failure to conduct full e-KYC.





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