Deloitte.

Innovate.Collaborate.Elevate
Paynext 2018

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Foreword

Message from Deloitte

Dear Payment Mavens,

We have come a long way to PayNext 2018 starting from Mpay insights in 2014 where we intended to map the leapfrogging payment revolutions that catapult the banking and payments business to inspiring heights. This, we believe, is one of the most happening times for the payment industry to strive, thrive and prosper' with innumerable options pampering the customers with the most delightful experience as ever.

This year, the theme for PayNext Insights 2018 is INNOVATE, COLLABORATE, ELEVATE. This wonderful report is put together by our Research partner Deloitte, as a result of several months of hard work and conversations with industry leaders, bankers, technologists, regulators and industry observers.

The advent of UPI, BHIM and several revolutionary technologies have made many of the business models redundant and given rise to a lot more of new business models. The market is now eagerly waiting for UPI 2.0 to experience newer revolutions. This report discusses several trending technologies and there clearly has been an upsurge in fintech excavation and engagements. Banks are now working towards leveraging more value from the existing payments data. All this essentially proves that there is no dearth when it comes to INNOVATE.

The recent past has seen some payment banks and wallets surrendering their licenses, while some others merging or redefining themselves to make their business models work and explore newer possibilities. The entry of social payments giants like Whatsapp, Google, Facebook, Amazon etc. have given jitters to some of the new generation players as well as the legacy players and banks, which are now working more closely with fintech's as well as other members of the ecosystem than ever before. Merchant acceptance in India is still far from that in the matured markets. Unwavering focus of the government, the creation of national platforms and the thriving innovation ecosystem proves the market is in a strong mood to COLLABORATE.

Ultimately, for all the above transformation to be successful, it is imperative that it gets a strong market offtake. I am often reminded of a quote by Dr. Sam Pitroda during the launch of IMPS by NPCI a few years ago where he said that "For any technology to be successfully adopted, it has to be simple, scalable and secure". This, even today remains the necessity to ELEVATE any innovation

We, sincerely hope, this report comes quite handy to you in future, crafting your strategies and driving your payments business decisions. Do share your valuable feedback with us on my id below.

Babu Nair
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Digital payments in India has evolved into a multi-modal experience. In 2017, we had foreseen that there will be a shift of digital payments from physical cards and wallets to newer forms of payments such as Unified Payment Interface (UPI), Bharat QR, Aadhaar Enabled Payment System among others. Payments through cards saw significant growth post demonetization, but growth since then has sobered down. The new regulations for prepaid payment instruments pose serious questions around their future; data for last few months show consistent decline in their usage. UPI, on the other hand, has seen a dramatic rise as both new entrants (including technology giants) and incumbents alike have brought UPI offerings to the market. Trends notwithstanding, the current payment landscape is still evolving in the sense that there are multiple ways of payments, all seeking large-scale adoption.

As with internet and commerce, India is 'mobile-first' when it comes to payments, and we believe mobile as a form factor will play a significant role in payments going forward – both on issuance side and acceptance side. Innovation in use cases on mobile is likely to help India leapfrog other standard means of payments. India has been at the forefront of introducing novel payment modes, but players would have to innovate further to drive simplicity, convenience and mass adoption in order to penetrate the last mile. For instance, two key opportunities are finding solutions that can truly compete with the speed of cash in micro-payment situations (particularly in queuing situations), and developing voice-driven mobile apps that can bring in the next wave in adoption.

In all this effort, payments businesses also have to find a path to viability. For this, they could possibly look at more collaboration - to provide value added services, to have a holistic bouquet of financial offerings, and to unlock monetization opportunities. Such collaboration may need to look beyond financial services as well. To enable such collaboration with rapid velocity, payments businesses could consider implementing application programming interface (API) based architectures and possibly even micro-services architectures.

As these new paradigms take shape, it would be crucial to test the scalability of solutions for mass adoption in a country as diverse as India. Financial inclusion, and digital payments (and even other non-financial services) would need to go hand in hand to transform lives and lift households across country into economic well-being.

Through this report, we have attempted to critically analyze various innovative means of payments and their potential to see mass adoption. Further, this report examines the problems plaguing widespread merchant acceptance and suggests solutions for the same, enabling the next wave of digital payment adopters in this country. The effect of entry of technology giants has been examined and finally the potential of capturing value from payments data has been explored. We have also looked at the continued search for more effective micro-payment solutions, and the promise of voice-driven payments apps. We believe these are the critical elements, which will shape the evolution of this dynamic industry.

We hope that you find the analysis and insights in this paper relevant and useful.

Vijay Mani
Partner
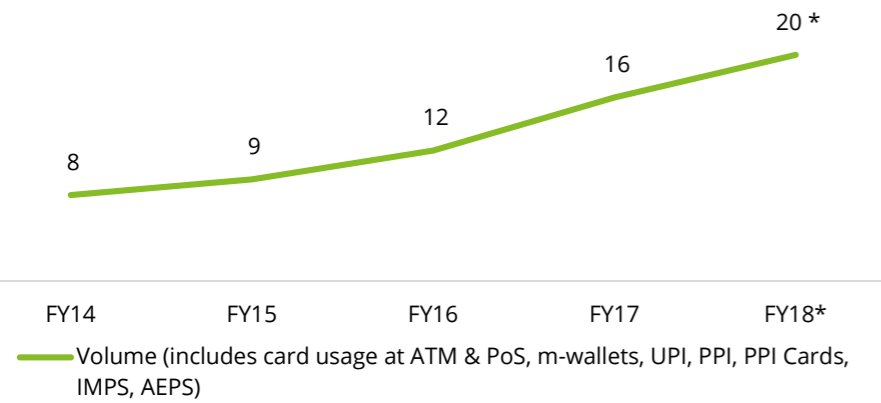Deloitte Touché Tohmatsu India LLP

Introduction
Innovate. Collaborate. Elevate

Payments industry in India has experienced a paradigm shift in the last few years. Its rapid rise has been fueled by innovation in service models and customer experience as well as by macro-events such as demonetization. As a result of demonetization, usage of cards at point of sale saw a steep jump and has stabilized to a new normal. The growth ever since has been gradual. Mobile wallets, driven by their hassle-free onboarding and transacting experience saw the transaction numbers surpass those of debit cards at PoS. However, the new regulations around mandatory know your customer (KYC) pose a question on their sustained growth. The newest entrant in the arena – Unified Payment Interface (UPI) has grown exponentially, driven by technology giants entering the fray. UPI disintermediates the transaction provider from the account provider and allows any company to craft use cases and user journeys with a focus on superior use experience.

Exhibit: Digital Payments in India

Retail digital payments volume in India (in billions)

- 8 — FY14
- 9 — FY15
- 12 — FY16
- 16 — FY17
- 20 * — FY18*

—— Volume (includes card usage at ATM & PoS, m-wallets, UPI, PPI, PPI Cards, IMPS, AEPS)

*Note: FY18 data till Feb'18

> **Digital payments have grown at a CAGR of 53% over the last 5 years and is expected to reach USD 1 trillion in value by 2023**

Debit Card usage volume at PoS (in millions)

- 308 — Q3FY16
- 328 — Q4FY16
- 370 — Q1FY17
- 384 — Q2FY17
- 792 — Q3FY17
- 852 — Q4FY17
- 787 — Q1FY18
- 786 — Q2FY18
- 842 — Q3FY18

Demonetization

—— Actual Volume   - - - Projected Volume w/o Demonetization

> **While debit cards are still primarily used for ATM transactions, volumes at PoS have shown a significant uptick post demonetization**
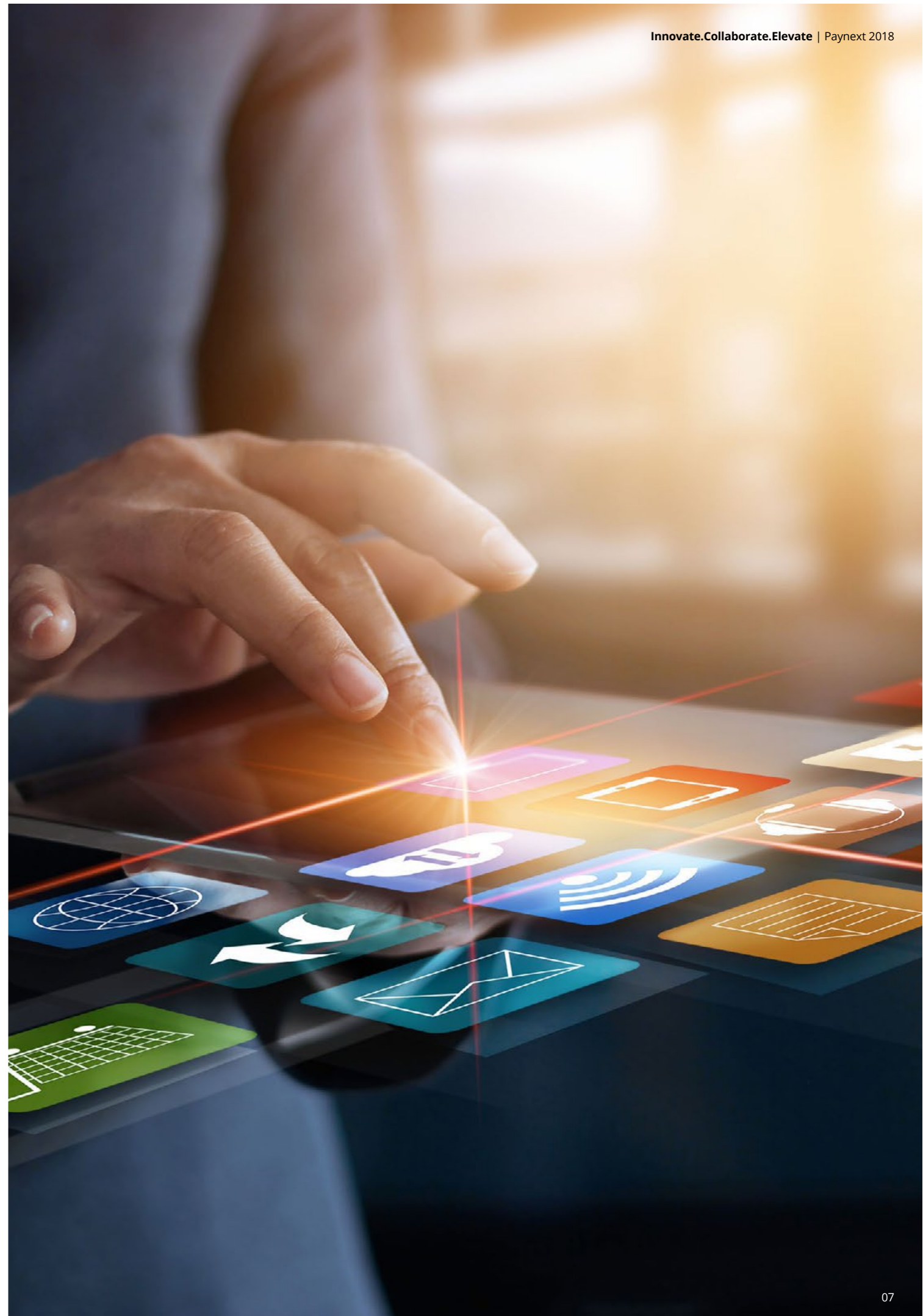
M-wallet transactions volume (in millions)
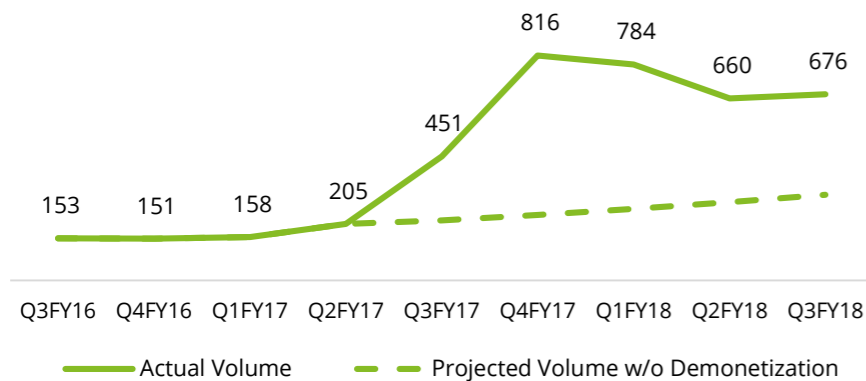
M-wallets grew significantly (growth rate > Debit and Credit cards), but the recent change in guidelines may dampen their future

UPI transactions volume (in millions)
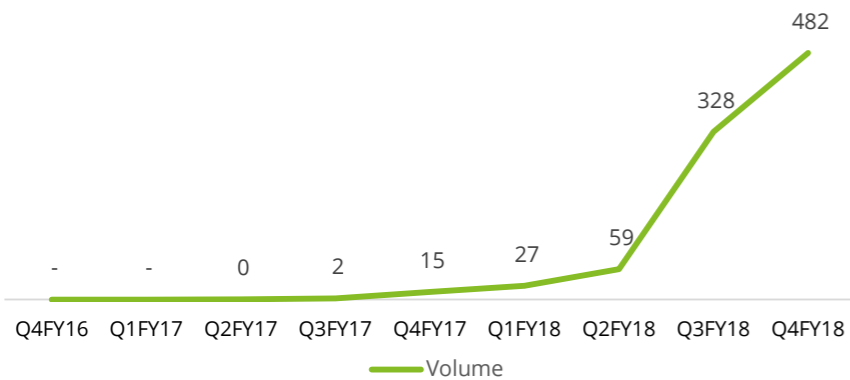
UPI has demonstrated the fastest and the most consistent growth rate and is poised to become a key retail payment platform

Source: RBI and NPCI statistics

We believe that the growth in digital payments is likely to continue its upward trajectory, driven by key catalysts such as increase in smartphone penetration, supportive regulatory policies, new platforms enabling proliferation of such transactions, and a thriving and innovative fintech ecosystem.

Table: Catalysts for further Growth of Digital Payments

Rising smartphone and data penetration	India is witnessing significant growth in smartphone ownership and data usage. Increasingly, more people are becoming comfortable using smartphones for various purposes. This marked shift in behavior can only prove to be encouraging for digital payment use cases through the smartphones. India is expected to have ~500 million smartphone users by end of 2018[1]. This is the second largest smartphone base in the world and still has significant potential to grow, given the falling prices of such devices. Further, the total wireless data usage in the country has grown ~5 times from December 2016 to December 2017. The average data usage per active data user per month has grown from 1.16 GB in 2016 to 4.13 GB in 2017. On the other hand, average tariff per GB of wireless data has fallen from ~INR 75 in 2016 to ~INR 19 in 2017.[2] All these factors augur well for growing smartphone and data usage.

Unwavering focus by the Government	The Indian Government is undoubtedly focused on driving digital payments in the country. Promotion of digital payments has been accorded the highest priority by the Government to bring each and every segment of the country under the formal fold of digital payment services. The Finance Ministry of India announced a target of 25 billion digital payment transactions in FY 2017-18[3]. The Ministry of Electronics & Information Technology (MeitY) is working with multiple stakeholders including Banks, Central Ministries/Departments and States, to create an ecosystem to enable digital payments across the country. The Government has also rationalized the Merchant Discount Rates (MDR), making them lesser for smaller merchants with the clear aim of encouraging digital payments at such merchants. The Government went one step further, and announced that they would bear the MDR for transactions less than INR 2,000 for two years with effect from 1 January 2018 by reimbursing the same to the banks.
Creation of national platforms	The Government and its various bodies have built national platforms, which have the potential of providing ubiquity and ease of making payments. Two such notable platforms are Unified Payment Interface (UPI) and Aadhaar. The UPI platform allows for the construct of Payment Service Providers (PSPs). These are independent service providers with a focus on providing services and superior payments experience by connecting with banks to enable information flow and interoperable transactions. This architecture seems to have fostered innovation and has resulted in exponential uptake of UPI. Aadhaar is a unique identity number that can be obtained by any resident of India. Additionally, Aadhaar allows biometric authentication of the resident with a valid Aadhaar number. About 1.2 billion people in India have an Aadhaar number, as of May 2018[4]. Further, the National Payment Corporation of India (NPCI) has created an Aadhaar Enabled Payment System (AePS), which uses Aadhaar for authentication and allows peer to peer and merchant payments.
Thriving and innovative Fintech ecosystem	One of the barometers for impending and sustained growth in any sector is the activity in the startup landscape in that sector. According to Inc42 DataLabs, the Indian fintech sector reported 102 funding deals worth USD 2.59 billion until November 2017. Fintech startups grew by 31 percent year-on-year (YoY) to almost reach 360 in 2017. Some of the key investments include Paytm securing USD 1.4 billion funding from SoftBank in May 2017[5], followed by Flipkart-owned PhonePe, securing USD 500 million from its parent entity. The thriving landscape is an indicator that this segment is bound to flourish.

Source: Deloitte analysis

As the industry expands further, it is expected to see more collaboration and partnerships amongst various players across the value chain, aimed at providing holistic services with faster go-to-market. Innovation and collaboration are crucial to elevate the reach of digital payments and financial services.

However, while the digital payments are expected to grow by leaps and bounds, there is still a significant proportion of the population which is yet to jump on the bandwagon. This report examines the future of payments through the lens of making it more pervasive. More specifically, it covers the following topics:

• **Emerging Payment Technologies – Going beyond Smartphones and**

Cards: This section examines upcoming payment technologies, their potential use cases, and their prospect for mass adoption.

• **Driving Digital Payments among Rural Customers:** This section hypothesizes on ways to achieve the next set of users beyond the early adopters.

• **Market Entry by Global Technology Giants** – This section highlights the implications of the entry of technology giants into payments, their advantages, and potential areas of play for incumbents.

• **Increasing Payment Acceptance at Merchants– Journey from 3 million to 30 million:** This section examines the

possibility of mass adoption from the acceptance side of the equation.

• **Moving Beyond – Capturing Value from Payments Data:** This section looks at enhancing sustainability for payments players by examining potential value added services.

These are exciting times for the payments sector. As it accelerates forward aided by innovation, collaboration, enabling policies, and focus on customer experience, creation of all-inclusive ecosystems and deeper penetration into the hinterlands of the country is likely to create an unparalleled success story.

[1] Economic Times (https://telecom.economictimes.indiatimes.com/news/india-to-have-530mn-smartphone-users-in-2018-study/61097817)
[2] TRAI, Yearly Performance Indicator Report, 2017

[3] Website of Minsitry of Electronics and Information Technology
[4] Aadhaar Dashboard, UIDAI
[5] Economic Times (https://economictimes.indiatimes.com/small-biz/money/paytm-raises-1-4-billion-from-softbank-valuation-jumps-to-over-8-billion/articleshow/58733667.cms)

Emerging Payment Technologies

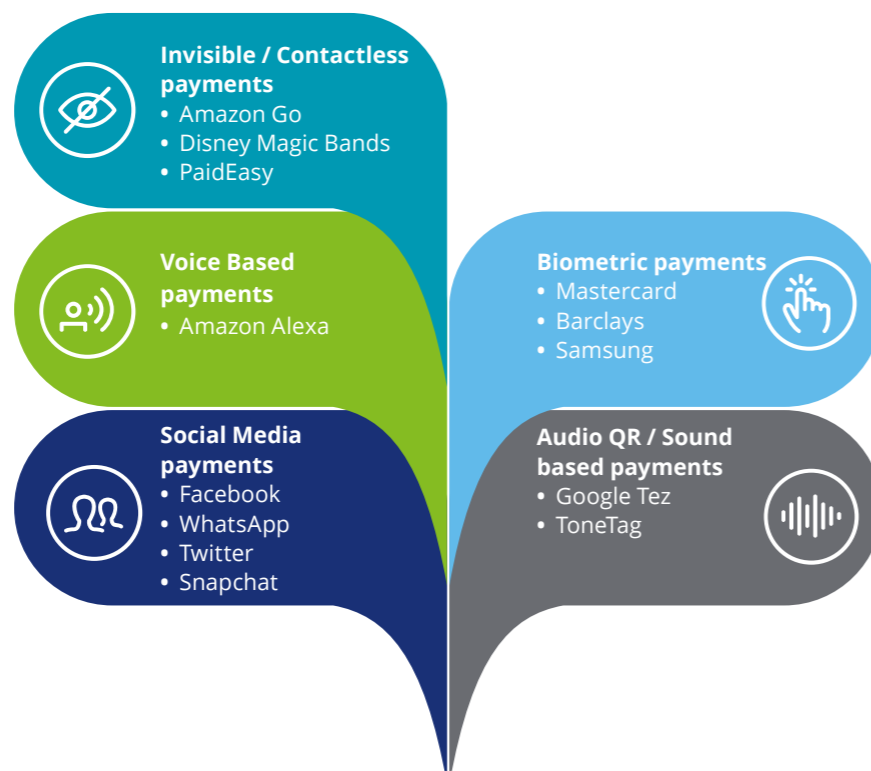## Going Beyond Smartphones and Cards

Evolution of Payments in India

The Indian economy has traditionally been dominated by cash. However, the increased smartphone adoption, and favorable regulatory policies have created the baseline infrastructure required for a leapfrog growth in digital payments. Further, relentless innovation, easy to use payment products, interoperable payment platforms and customer awareness are expected to continue to drive the shift to digital payments from cash.

Emerging Payment Technologies

In this era of 'Digital Darwinism', an era where technology and society are evolving faster than businesses can naturally adapt, India has displayed a significant growth in adoption of digital payments. India now represents one of the largest market opportunities for payments for global technology companies and home grown Fintechs alike. Further, the emergence of the digital five forces – Social, Mobile, Analytics, Cloud (SMAC) and Internet of Things (IoT) – is helping these technology companies to reimagine the customer and come up with innovative and easy-to-use payments products.

While the payment needs of the urban and affluent population have been somewhat met, the rest of the population presents a large opportunity to include the masses in this digital revolution. However, this widespread adoption of digital payments will require the payment products to be as convenient as cash. While innovations such as mobile wallets have been successfully replicated in India, there have been other examples such as the Near-Field-Communication (NFC), which have seen very limited adoption. In light of this need, we have identified a few payment innovations that have seen adoption in other geographies and could be relevant in the Indian context.

Exhibit: Payment Innovations

Invisible / Contactless payments
- Amazon Go
- Disney Magic Bands
- PaidEasy

Voice Based payments
- Amazon Alexa

Social Media payments
- Facebook
- WhatsApp
- Twitter
- Snapchat

Biometric payments
- Mastercard
- Barclays
- Samsung

Audio QR / Sound based payments
- Google Tez
- ToneTag

Source: Deloitte analysis

1. Invisible / Contactless Payments

While NFC, owing to lesser number of NFC enabled terminals and high cost of upgrading PoS infrastructure, has not seen much adoption in India, other forms of contactless payments have seen adoption in the United States. For example, Amazon has made payments at its convenience store – Amazon Go – completely 'invisible' where customers scan their phones at the entrance, grab the desired products (which automatically get charged to their accounts) and just walk out of the store.

Table: Key Examples of 'Invisible' Payments

Payment Technology	Description / Payments Use Case
Amazon Go	• Amazon Go is a convenience store in Seattle, United States, where customers use an app to enter the store and enter the turnstiles by scanning a QR code
	• Any product that a customer picks up is added to the virtual cart and the customer can simply walk out without the need for cashiers
	• Payment source is linked to the Amazon account in the app and the same is charged for payment of the bill
Disney Magic Bands	• Disney launched Magic Bands in 2013 to offer friction-free experience to its guests
	• Instead of park entry tickets, FastPasses, hotel room keys and credit cards, Disney guests wear these wrist bands, scanning them against a touch point to complete transactions
PaidEasy	• Integrated with iBeacons, the app opens a "check" as diners enter a restaurant or bar and is synced with the retailer's PoS
	• The server adds items to the bill that are paid out in-app
	• Customers can view their tab at any point and split, tip and pay the bill without waiting

Source: Respective websites and press releases

Similar models could be considered for suitable replication in the organized retail space and hospitality industry in India, wherein payments can be made invisible and customers can enjoy a frictionless shopping experience. This may require the Payment providers to tie-up with such chains and deploy the acceptance infrastructure.

2. Voice-based Payments

The introduction of new voice-driven digital assistants (e.g. Apple Siri, Amazon Alexa, Microsoft Cortana, Google Assistant) is providing the springboard for enabling voice- based payments and banking transactions. Customers are already getting accustomed to speaking to their devices for simple tasks such as getting directions to a restaurant, placing a call, or reading a text. Now, voice services such as Amazon Alexa are making it easy to check an account balance or hear a payment due date without picking up a phone or logging in to internet banking.

In such an example, United States Bank has tied up with Amazon to extend voice based banking to its customers.

To use this service, United States Bank customers must have an Alexa device such as Amazon Echo, Echo Dot or Tap, plus the Alexa App on their smartphone and an Amazon account. These customers will be able to complete banking tasks such as checking an account balance or making a payment to a United States Bank credit card, simply by speaking a command to an Amazon Alexa device.

With the recent launch of smart speakers, banks can explore partnerships to enable voice based banking transactions. Payment providers can also enable P2P payments and bill payments using such voice driven digital assistants.

3. Social Media Payments

Social media has come a long way since being introduced as an innovative method of communication. What started as a medium for connecting with peers across the globe has morphed into a platform for conducting a lot of day-to-day today activities. The latest evolution involves enabling payments through these social media platforms, especially peer-to-peer (P2P) payments.

The first few use cases of social media being used as a payments platform can be traced back to 2015, when e-wallet providers such as Venmo let users sync their wallets with Facebook and convert transactions done within the app into a Facebook status. Today, most of the social media giants such as WhatsApp, Twitter, Snapchat, etc. have joined the foray.

Table: Key Social Media Payment Giants

Social Media Platform	Description / Payment Use Case
Facebook	• With 2.2 billion users, Facebook is the largest social media player in the world. Facebook launched its P2P payments functionality in its Messenger app in the United States and the United Kingdom and is planning to replicate the same globally.
Snapchat	• Snapchat's payment feature, called Snapcash works similar to most peer-to-peer payment features. When the user types the dollar symbol and enters an amount the send buttons morphs into a green Snapcash button.
WhatsApp	• WhatsApp in India, has launched its P2P payments feature riding on the Unified Payment Interface (UPI) platform.
Twitter	• ICICI Bank has collaborated with Twitter and has enabled banking via Twitter. ICICI customers can make P2P payments, recharge prepaid mobile, check account balance and view last three transactions using Tweets.

Source: Respective websites and press releases

While WhatsApp and Twitter have already made their foray into the Indian market, there is significant headroom for other large social media players to create a 'big bang' in the Indian digital payments space. Banks may also leverage social media platforms to enable non-financial banking transactions, which can be done easily while checking the daily feed.

4. Biometric Payments

With increasing adoption of Aadhaar and launch of payment platforms such as Aadhaar Enabled Payment System (AEPS) and UPI, fingerprints have started gaining traction as a means for payment authentication. To make customer experience even simpler, there are alternative biometric modalities, such as Face Recognition, Voice Biometric, Iris, that are available in the market and can be tapped using mobile devices. This kind of authentication has an advantage over traditional passwords or secret questions, which are insufficient for personal identity simply because they provide evidence of ownership of knowledge whereas biometrics provide information regarding who the user is rather than what he / she knows.

Table: Key Examples of Adoption of these Technologies

Platform	Description / Payment Use Case
MasterCard	• MasterCard launched payment solution 'Identity Check Mobile' in 12 markets in Europe in 2016, which allows mobile payment verification using 'selfies'.
Barclays	• Barclays rolled out voice biometric-based authentication for customers calling their call-centers wherein the customer's voice is compared to the voiceprint on file.
	• Like a fingerprint, a voice print is individual to each person and is made up of over 100 unique characteristics, which are based on the physical configuration of a speaker's mouth and throat.
Samsung	• Samsung launched a Galaxy tablet with built-in Iris capability that is ready for Aadhaar authentication and can be used for payments and banking.

Source: Respective Websites and press releases

With increasing smartphone penetration in India, face recognition and Iris based authentication can be explored to conduct day-to-day banking transactions and bill payments. Voice biometric-based payments can also see a wide adoption, especially with people using feature phones provided banks / payments providers can support local / vernacular language capability.

5. Audio QR / Sound-Based Payments
Audio QR allows customers to make payments over connected devices within a suitable diameter range. The speaker at one end throws ultrasound frequencies in form of pulses. The receiver at the other end captures the pulses and converts the frequencies back in the original data. Audio QR is considered to be an astute mechanism for making

digital payments as it is simple to use and doesn't require a more-expensive NFC chip or a camera for scanning QR code in the device.

Google launched its payments app 'Tez' in India, which, using the "cash mode" option, negotiates a connection using ultrasonic sounds to identify the payer and the payee. This doesn't require any exchange of personal details such as bank account number or phone number. It works with any phone with a mic and speaker and the Tez app installed.

Similarly, ToneTag allows for secure proximity (offline) payments using sound (Tone) or NFC (Tag). Depending upon user device and retail PoS hardware, the mobile application can toggle to initiate in-store purchases using sound or NFC

Table: Propensity of Adoption of Payment Technologies in India

Payment Technology	Potential Use Cases in India	Key Implications	Propensity for Adoption in India
Invisible / Contactless Payments	• Payments in organized retail • Payments in hospitality and entertainment chains	• Partnerships with such merchants and deployment of acceptance infrastructure • High cost of setup of infrastructure	
Voice-Based Payments	• All banking transactions • P2P payments • Bill payments	• Integration of voice-based assistants in smartphones • Local / vernacular language capability	
Social Media Payments	• Non-financial banking transactions • P2P payments • Micropayments	• Smartphone requirement and risk of fraud	
Biometric Payments	• Banking transactions • Bill payments	• Smartphones built in with biometric readers / Iris capability • Local / vernacular language capability for voice biometrics	
Audio QR / Sound-Based Payments	• P2P payments • Merchant payments	• Limitation on range / requirement of devices to be in close proximity	

Source: Deloitte Analysis

Driving Digital Payments among Rural Customers

Digital Payments Largely Driven by Urban Customer

Limited Last Mile Infrastructure
Traditionally, almost all the initiatives taken by banks to provide banking services and innovative products have followed the "urban-first" approach wherein the intensity of investments is focused on urban areas and introduction of these innovations in rural customers is majorly an afterthought rather than being a primary objective. The same is confirmed by the low level of penetration of banking infrastructure in rural areas.

Exhibit: Rural Banking Infrastructure[6]

Population
Branch Infrastructure
ATM Infrastructure
POS Infrastructure*

8%
18%
70%
35%
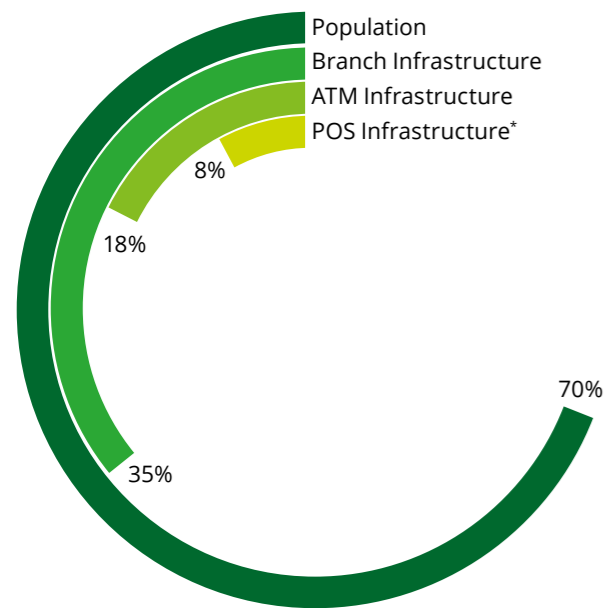
Source: RBI statisitics, SBI press release
*The POS infrastructure penetration is only for that of SBI PoS, but is indicative of the overall penetration

Main reasons for such disparity between urban and rural banking infrastructure is due to the following reasons:

• Lower spending capacity and business potential among rural customers vis-à-vis urban customers and lower merchant and customer density

• High cost of maintenance and sustainability of rural infrastructure

• High cost in reaching out to the last mile rural customers

Due to the above factors, acquisition and servicing of rural customers is perceived to cost higher, and low revenue proposition for banks which leads to lower returns on incremental investments and thus dis-incentivizing banks from making significant investments in rural areas.

[6] RBI Payment Systems Indicator; SBI https://www.sbi.co.in/portal/documents/44978/156388/SBI+Press+Release+-+SBI+becomes+the+Top+Merchant+Acquiring+Bank+in+the+country.pdf/14946221-b987-49e2-aa61-b351b3b6c4e3

Digital Payments also an "Urban First" Phenomenon

Similar to the urban-first push approach followed by banks, even digital payments adoption has seen a similar pattern of urban adoption, where in 44 percent of urban customers have taken up using these digital payment channels vis-à-vis rural customers being a distant second, at only 16 percent[7]. This difference in adoption and usage can be primarily attributed to lower internet penetration among rural customers (15 percent) vis-à-vis urban customers (77 percent)[8], lower penetration and comfort of rural customer in using a smartphone, knowledge / awareness among customers about various digital payments products etc.
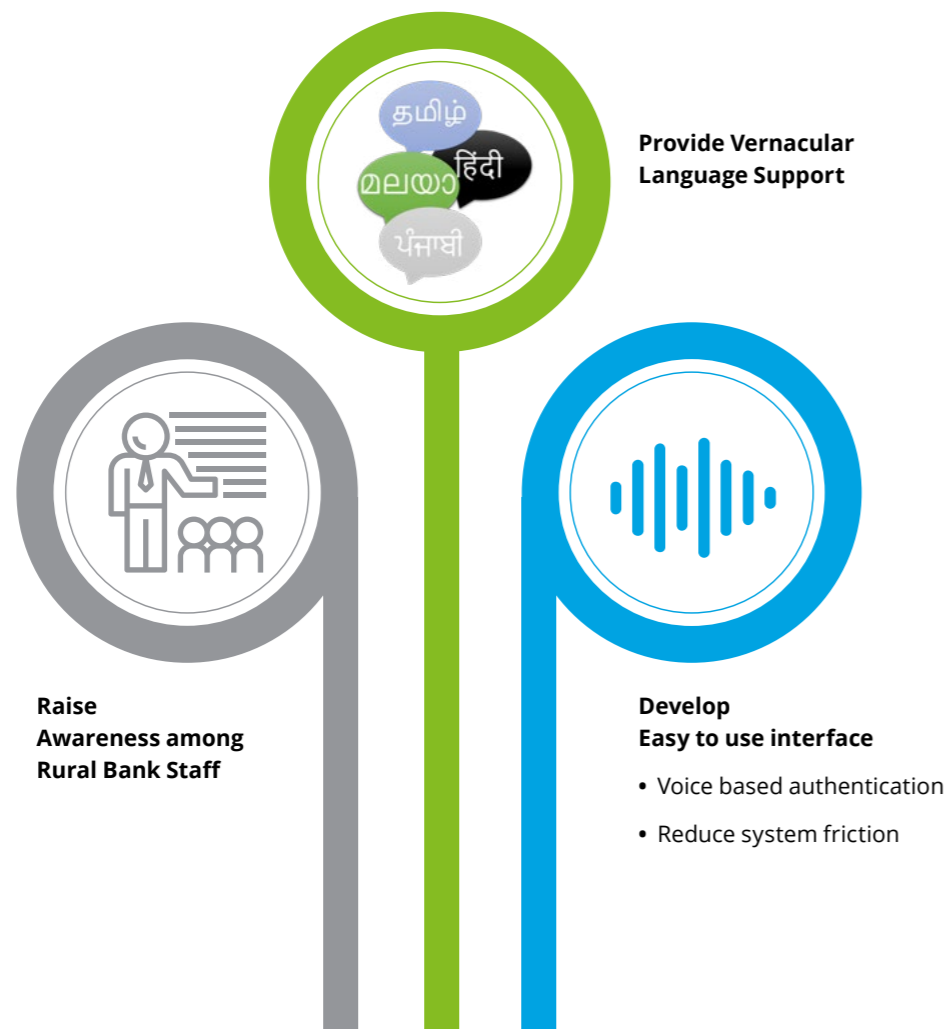
Low Cost Data to Drive Adoption among Rural Customers

While traditionally, all initiatives undertaken by banks have followed the urban-first philosophy, there seems to be a potential for adoption of digital payments among rural customers in parallel with urban customers. This can be largely attributed to the dis-intermediation caused by technology which enables banks to reach out to rural customers with minimal incremental investments on the supply side. Additionally, the availability of low cost affordable data which is expected to drive the demand among both the urban and rural customers.

To drive adoption among rural customers, it is imperative that banks do not replicate the approach taken for acquiring urban customers. Banks would have to introduce certain tweaks to their digital product offerings to promote awareness and adoption among rural customers, aimed at addressing the key challenges faced by rural customers.

Exhibit: Key Steps to Drive Adoption among Rural Customers

Provide Vernacular Language Support

Raise Awareness among Rural Bank Staff

Develop Easy to use interface
• Voice based authentication
• Reduce system friction

1. Raise Awareness among Rural Banking Staffc

With the objective of driving financial inclusion in rural areas along with the push by the Government (introduction of Jan Dhan Aadhaar Mobile trinity), banks have started opening branches in the rural areas at a faster pace (CAGR 7.2 percent) than the overall bank branch network growth (CAGR 6.5 percent)[9].

However, driven by the limited business potential in rural areas and unviable economics, these rural branches are typically manned by 1-2 bank employees. As per a joint study conducted by NPCI and Microsave[10], bank employees in rural branches don't have adequate training about digital payments products like AEPS, BHIM, UPI etc. and knowledge of use cases, or even the bandwidth to educate customers.

Driven by the lack of awareness and motivation among the banking staff, even the rural customer remains unaware about the digital payments products, their applicability, and their advantages which in-turn limits the adoption at the last mile.

Possible Steps to Increase Awareness among Branch Staff

In order to raise awareness among all the stakeholders about the various payment modes, appropriate and applicable use cases, various entities (banks, NPCI, RBI, GoI) could consider conducting local level programs, and training for the banking staff, who in turn can act as influencers for driving adoption of digital payments among customers.

These communication and awareness campaigns can be in the form of mandatory internal training for bank employees, and/or financial inclusion campaigns/melas targeted towards customers. Internationally, banks are investing in training their employees on digital banking, wherein digital banking related courses have been made part of the mandatory training. For example,

a. Maybank in Malaysia has introduced a mandatory digital upskilling programme for its bank employees, which focusses on enhancing employee digital literacy.[11]

b. DBS Singapore is planning to invest SGD 20 million for training its employees on digital banking and emerging technologies.[12]

Similar initiatives have also been taken by Indian ministries and regulators to focus on raising awareness among stakeholders related to digital payments, and banks have taken up initiatives in driving digital transactions across villages. Some of these initiatives include:

a. NPCI has formed partnerships with fintech (Payso)[13] to raise awareness among youth who in turn are expected to drive adoption of BHIM UPI Merchant payment solutions.

b. The Ministry of Rural Development has tied-up with the National Institute of Rural Development and Panchayati Raj[14] to develop training modules for raising awareness about various digital products like UPI, AEPS, USSD, mPoS etc.

In order to drive employee engagement and motivation in these rural branches, banks need to look at incentivizing the employees by considering softer alternatives such as:

a. Introduce gamification techniques, which drive engagement and content retention, rather than static slides based training, incorporating compliance to training as part of annual appraisal etc.

b. Providing enabling influencers to employees, such as identifying and posting local employees (at entry level) near their rural areas, so they are motivated in driving business locally.

2. Provide Vernacular Language Support

India's internet using population is estimated at approximately 400 million, among which English speaking population is estimated to be approximately 175 Million (~44 percent of user base) i.e. majority of the user base is not proficient in English. However, the content accessed by Indian users on the internet is almost 99.9 percent in English with Hindi based content being 0.05 percent, Bengali 0.018 percent and Tamil being less than 0.007 percent[15].

[9] RBI branch statistics
[10] http://www.microsave.net/files/pdf/NPCI_Cashless_CaseStudy.pdf
[11] https://www.finextra.com/pressarticle/73774/maybank-embarks-on-employee-digital-upskilling-programme
[12] https://www.dbs.com/newsroom/DBS_to_invest_SGD20_million_over_five_years_to_transform_employees_into_digital_workforce_in_support_of_Singapores_aim_to_be_smart_financial_centre
[13] http://www.cio.in/media-releases/npci-payso-partner-create-digital-payment-awareness
[14] http://serviceonline.gov.in/resources/homePage/99/PDF/pkg_cashless.pdf
[15] https://www.techinasia.com/talk/india-vernacular-internet

[7] "Internet in India 2017" study by IAMAI - IMRB; https://www.livemint.com/Politics/PhY0kTxoJqq6U9GISIpSaK/Only-16-of-rural-users-access-Internet-for-digital-payments.html
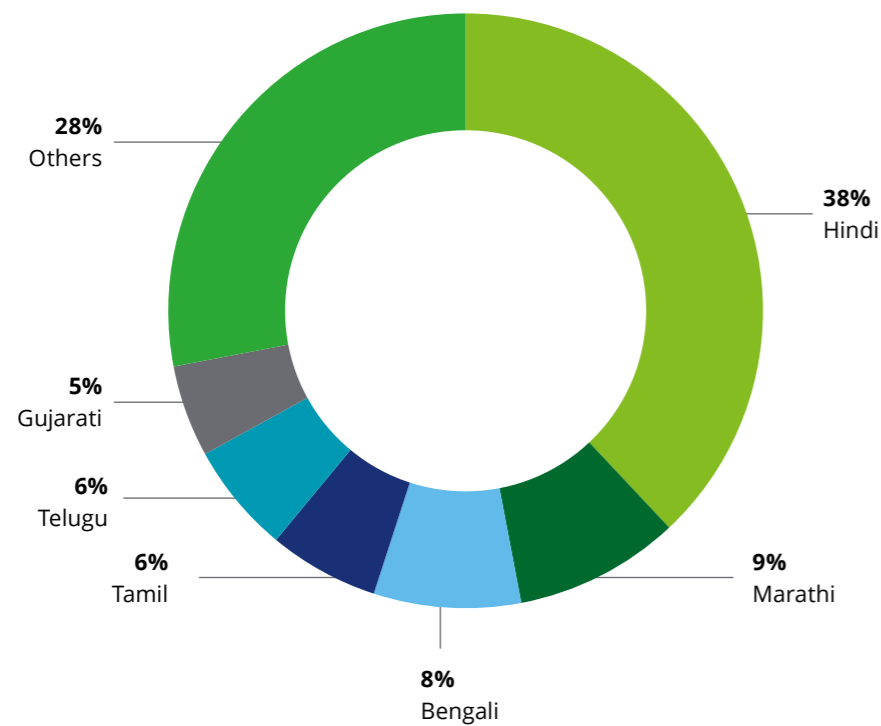[8] http://www.trai.gov.in/sites/default/files/YPIRReport04052018.pdf

As per Google's estimates, 70 percent of users consider digital content in vernacular language to be more trustworthy than the content presented in English[16]. This discomfort increases even further if the digital media is being used for performing financial transactions as customer's money is at risk, which is also supported by the IAMAI-IMRB study tracking usage of online channel for financial transactions.[17]

Exhibit: Vernacular Language Internet Users, 2021

Source: IMRB

Possible Steps to Increase Adoption among Rural Customers
As more and more consumers in India who might not be fluent in English language come online, having applications which support vernacular languages are likely to play a key role in driving customer adoption, comfort and trust in using these applications. As per the IMRB's estimates, by 2021, six vernacular languages (Hindi, Marathi, Bengali, Tamil, Telugu and Gujarati) are expected to comprise almost 75 percent of the vernacular language internet users.

While banks are yet to fully adopt this approach in providing digital services, fintechs/startups have already started working on providing vernacular language support and are seeing market traction. Some of these players (as per their respective websites / mobile apps) include:
a. PhonePe currently supports 10 vernacular languages (top six along with Malayalam, Kannada, Assamese, and Odia)
b. Paytm currently supports 10 vernacular languages (top six along with Malayalam, Kannada, Punjabi, and Odia)
c. Sharechat supports 10 languages, 27 dialects, currently caters to an approximate 3.5 Million active users daily[18]
d. DailyHunt supports 14 vernacular languages and has more than 150 Million application installations

3. Develop Easy to Use Interfaces
Current application usage interfaces provided by banks involve a lot of manual intervention. A card-based payment involves up to 17 clicks/input provided by the customer which jumps to 39 clicks in case of a netbanking transfer[19]. These steps include customer authentication, selecting the beneficiary, entering transaction details, providing transaction authorization etc. As there are multiple steps involved in performing a transaction, it leads to multiple system hops, leading to payments friction during a transaction potentially leading to transaction failures as well.

In order to drive the adoption of digital payments, among other things, banks need to introduce frictionless payments, that can improve customer experience which in turn could result in increase adoption. Some of the examples for these are discussed below:
a. **Voice-based authentication for non-financial transactions – I**CICI Bank has collaborated with Nuance Communication to make their systems intelligent enough to identify and authenticate the customer, based on their voice[20]. A similar system has been developed by Barclays wherein the customer's voice is used for passive customer authentication[21].
b. **Voice enabled transactions –** HDFC Bank has developed a voice activated banking services platform, by integrating its systems with Amazon Alexa[22], wherein the customer can check balances, get bill due dates and plans to enable bill payment, similar to United States-based Bank's integration with Amazon Alexa.
c. **Alternate authentication mechanisms –** DBS's Digibank application has reduced the dependence on OTPs, by taking device binding as one of the payment authentication factors. Some of the alternate authentication mechanisms that can be considered include combining device binding as first factor, and customer biometrics, or voice acting, as the second factor, that can migrate the customer authentication at the bank side to the customer side.

[16] https://timesofindia.indiatimes.com/business/india-business/90-of-new-net-users-non-english/articleshow/58371769.cms
[17] "Internet in India 2017" study by IAMAI - IMRB; https://www.livemint.com/Politics/PhY0kTxoJqq6U9GISIpSaK/Only-16-of-rural-users-access-Internet-for-digital-payments.html

[18] https://www.forbes.com/sites/baxiabhishek/2018/03/29/more-indians-access-the-internet-in-their-native-language-than-in-english/#18fbbf4a4a03
[19] https://juspay.in/juspay-safe
[20] https://www.livemint.com/Money/38DtvU1IPgxaeyKEdTXbXJ/Product-crack-ICICI-Banks-voice-recognition-system.html
[21] https://wealth.barclays.com/en_gb/home/international-banking/insight-research/manage-your-money/banking-on-the-power-of-speech.html
[22] https://cio.economictimes.indiatimes.com/news/enterprise-services-and-applications/hdfc-bank-experiments-voice-activated-banking-with-amazons-alexa/61033641

Market Entry by Global Technology Giants

Entry by Global Technology Giants and its Impact on the Incumbents

The payments landscape in India is undergoing a digital transformation with the advent of instantaneous, cashless, paperless, financial transactions, and digital payments in India are expected to reach USD 1 trillion by 2023 from the current value of less than USD 200 billion in 2017-18[23].

The burgeoning digital payments landscape in the country has compelled the global technology and social media majors to take notice and enter the fray. Globally too, technology and social media players have been striving to increase customer engagement on their platforms by providing a plethora of services which keeps customers on their platforms. Payments and commerce are such enablers, which are being assimilated into the platforms themselves. China's Wechat is a prime example that hosts a range of functionalities through mini-programs and enables payments through WeChat Pay. Facebook enabled card linked peer-to-peer payments through its messenger app, and has recently opened it up for Paypal too.[24]

In India, the launch of Unified Payments Interface (UPI) has disintermediated the payments value chain away from banks, and has given the ability for any payment system provider to own the customer. Since the launch of UPI, the interest in the payments market in India has seen a spurt from the likes of Google, Facebook, and Samsung among others.

Entry of Technology Giants in the Digital Payments Space in India

The digital payments opportunity seems to have certainly caught the eye of global technology giants, who are creating platforms for all-encompassing engagement of end customers. Commerce is a big use-case, and payments is an essential part of commerce. Further, payment behavior is seen to generate data sets, which lets such platforms enrich their customer profile that can be consolidated and monetized. This seems to have galvanized the interest of such large platforms.

Key foreign players who have already entered the Digital Pament landscape in India include Google Tez, WhatsApp, Facebook, Samsung Pay, Paypal, and Stripe among others.

[23] Credit Suisses Report, Digital Payments Statistics, 2018
[24] Respective websites and press releases

Table: Key Global Players in Digital Payments in India

S.No	Entrant	Details
1	**Google Tez** (Launched in September 2017)	• A payment-focused B2C product with multi-lingual capabilities
		• Allows users to pay bills, make peer to peer and merchant payments through the use of UPI and Bharat Bill Payment System (BBPS)
		• Offers rewards in the form of cashbacks for doing payments on the app
		• Has 16 million users by May 2018[25], which includes half-a-million small merchants; these merchants use Google Tez in P2P mode
		• Has ~80 billers[26] on the platform
2	**WhatsApp Payments** (Launched in February 2018)	• Whatsapp launched beta version of its P2P payment service based on Unified Payments Interface (UPI)
		• Allows users to transfer money to WhatsApp contacts within a chat itself
		• WhatsApp Payments launched a new Request Money feature on the app in April 2018; The Request money option is live on Android beta of WhatsApp; allows users to scan a QR code or enter a UPI ID in order to demand a payment
		• Recently, rolled out the "enter UPI ID, scan QR code" feature for payments on the platform; available on Android and iOS
3	**Samsung Pay** (Launched in March 2017)	• Samsung Pay is a mobile payments platform
		• Allows customer to use his/her phone in place of a debit or credit card when paying at merchants
		• User can also make payments via UPI or Paytm
		• Leverages the NFC technology to enable contactless payments at compatible PoS machines
		• Also allows for contactless card payments using magnetic secure transmission (MST) technology, which mimics the card swipe on any point of sale (PoS) terminal. This allows it to work with existing PoS machines which do not have NFC, without any upgrades to the machine
		• Service is available on the Galaxy Note 8, Galaxy S8, Galaxy S8 plus, Galaxy S7 and Galaxy S7 Edge, Galaxy J7 Max and Galaxy J7 Pro
		• Plans to bring its payment service to non-Samsung smartphones
		• In November 2017, India became the third-largest market for Samsung Pay, behind South Korea and Russia with 25 lakh account users/owners in October 2017[27]
		• Till date, Samsung has 17 partners on board, including 10 banks and digital wallet providers Paytm and MobiKwik, and is in talks with a few more banks
		• Has recently started loyalty program for making payments through Samsung Pay
4	**AmazonPay** (Launched in December 2016)	• Amazon Pay is a payment option similar to how mobile wallets work but limited to transactions within the platform
		• Amazon Pay balance (stored value account/wallet) grew Y-o-Y by 409% in 2017[28]
		• Secured a licence from the Reserve Bank of India (RBI) to operate a prepaid payment instrument (PPI) in March 2017
		• In March 2018, Amazon Pay raised USD 30 million (INR 195 crores) from its parent entity and from Singapore-based Amazon Corporate Holdings Private Limited; just over five months after Amazon Pay India received a capital infusion of USD 40 million (INR 260 crores)[29]

S.No	Entrant	Details
		• Investment to allow Amazon Pay to develop more local innovations for Indian customers
		• Amazon Pay has started tying up with other online merchants to be available as a payment option. For first time users, it creates an Amazon account itself and thus, uses it as a hook to create users for the larger Amazon platform
5	**Stripe/Stripe Atlas** (Launched in December 2017)	• Stripe is one of the largest online payment processor in the world
		• Currently offers services in invite-only beta mode with a small group of companies in India
		• Users can now link their Indian bank accounts
		• Expected to bring in more beta users on the platform to improve the functionality of specific features
		• Plans to build new products specific for India users and hire an engineering team
		• Stripe Atlas is a tool that helps Indian entrepreneurs/Internet companies in India expand their business operations abroad[30]

Source: Respective websites, mobile apps, press releases, news articles

Other Key Players Considering Foraying in Digital Payments in India
Apart from those who have already launched operations in India, there are other noticeable companies with plans to enter the country soon.

Table: Key Global Players Considering Foraying in India

S.No	Entrant	Details
1	**Facebook Payments**	• Facebook is ready to enter payments in India; currently beta testing with recharges for mobile phone on Messenger
		• Messenger P2P payments are only available in the United States, United Kingdom and France
		• Facebook has sought an Indian patent for its electronic payment system enabled through messaging
2	**Apple Pay**	• Apple has already begun testing their Apple Pay service in India; however, yet to be formally launched
		• Apple Pay securely stores credit cards, debit cards, or other sensitive payment information from the wallet app and lets the user pay for goods directly from their mobile device
		• Has a second factor of PIN or fingerprint
		• For Apple Pay to work, the merchant needs to have a contactless machine, which is compatible with Apple Pay
		• During the transaction, TouchID or FaceID is required to authenticate the payment and a subtle vibration confirms that the transaction was successful
		• Apple is already in talks with Starbucks and Croma stores, and banks like HDFC Bank, Standard Chartered and Citibank to make their hardware compatible with the contact-less payments service of Apple Pay

Source: Respective websites, mobile apps, and press releases, Deloitte Analysis

Differentiators and Advantages of Global Players
The Global players have some unique advantages which play in their favor. Some of these players already have a well-entrenched user base in India that could potentially be a captive base to provide payments capability. In addition, they also have a large investment appetite and an upper hand as far as cross-border use cases are concerned.

[25] NDTV Gadgets (https://gadgets.ndtv.com/apps/news/google-io-2018-nbu-tez-datally-files-go-1848843)
[26] Google Tez (https://tez.google.com/)
[27] Times of India (https://timesofindia.indiatimes.com/business/india-business/india-samsung-pays-3rd-largest-mkt/articleshow/61553399.cms)
[28] Inc42 (https://inc42.com/buzz/amazon-india-investments-digital-payments-amazon-pay/)
[29] Economic Times (https://economictimes.indiatimes.com/small-biz/startups/newsbuzz/amazon-india-gets-rs-2600-crore-infusion-for-marketplace/articleshow/64083599.cms)

[30] Stripe (https://stripe.com/blog/india-private-beta)

Table: Key Advantages

Incumbent Base	Investment Appetite	Cross Border Use Cases
• Some players such as Whatsapp and Facebook have large incumbent bases, which are already highly engaged on the respective platforms • Whatsapp has over 200 million monthly active users in India[31] while Facebook has 241 million users in India as of July 2017[32] • Indians spend approximately an average of three hours a day on smartphones and a substantial chunk of this time is spent on social and communication apps[33] • Given the higher engagement, such platforms have significant potential to have customer stickiness since they can become a one-stop shop for multiple activities including payments	• Widespread Digital payments in India require a behavioral shift • While superior customer experience definitely plays a role, a discerning Indian customer is always looking for value • Digital payments players have been showering consumers with offers, cashbacks, and promotions in order to change their behavior in favor of digital payments • These require investments and foreign entrants are committing to it through their large war chests; For example, Amazon infused INR 195 Crores in Amazon Pay in March 2018, in succession to its investment of INR 260 Crores in September 2017[34] • For example, cashback offers/discounts by Amazon Pay and Google	• Owing to their international presence, a few of these entrants can consider enabling services beyond India for any cross-border transactions • While this might be beneficial for only a certain section of users, it still provides a differential advantage to certain players

Future Outlook – Hypothesis/Case Study

Some of these technology platforms are likely to play a key role in shaping both P2P and P2M payments, given their ubiquitous use and expanding use cases for customer engagement. WeChat in China is a prime example. Mobile payments have boomed in China, totaling over USD 13 trillion in 2017. The stores and services are increasingly centered on mobile pay apps like WeChat Pay and Alipay. Both these companies accounted for 93 percent of China's mobile payment segment (according to data from Analysys). Alipay is the market leader in mobile payments, accounting for a market share of 54 percent and WeChat accounting for 39 percent (according to data through September 2017).[35] With over 900 million monthly active users, WeChat is now a fully-fledged ecosystem that offers users a range of functions. It helps users to do everything from messaging, group chats, file transfer, video conferencing, business discussions,

socialize, make payments, online gaming, buying grocery, hailing cabs, ordering online food and even offline payments at restaurants – all this without having to go to another app. These services not only provide the company improved customer stickiness, but also create a additional revenue streams.

Hypothetical use cases for a chat service – Making Payments Seamless for multiple scenarios

A well penetrated chat service could enable P2P, bill payments and C2B payments if it is successful in providing a platform to businesses for easier customer outreach and interaction, and also enable payments by becoming a payment service provider under UPI.

Through this service it could allow small as well as large businesses to have a presence on the platform and interact directly with the customers. The chat service could become the de facto payment gateway for all such C2B

businesses, especially the ones that may have subscription based recurring payment model. For instance, online media streaming service providers could contact the customer through this chat app (using chatbots) for subscription upgrade/renewal, and the user can complete the payment through UPI functionality within the chat app. On the same lines, while booking a ticket, an online travel agent can send a collect payment request at the payment stage, followed by sending the tickets (PDF version) through the chat app. Further, a utility biller (e.g. electricity) can send bills through this chat app to users, and collect payments through the chat app itself. It could send payment reminders, or provide advance payment discounts. The combination of messaging and seamless payment within the same app, can allow businesses to interact and receive payments from customers, all as part of a single chat window.

How do Incumbents React?
What does the entry of such players mean for incumbents?
Payments players in the country can still leverage certain opportunities and abilities to thwart the threat posed by new entrants. There are niche segments and use cases which have potential to

scale-up and where the incumbent could gain the first mover advantage. Some of these opportunities also require an existing channel of distribution that the incumbents can leverage better. The incumbents would have to identify these niches and focus on quick execution to gain dominance.

Table: Key Proposed Opportunity Areas

Parameter	Current Scenario	Potential Opportunity
Rural Payments	• P2P and P2M payments in rural India is largely done in cash and presents a significant headroom for growth • Incumbent could explore Aadhaar Enabled Payment System (AEPS) payments or payments through IVR, which can be relatively easier to use and hence easier to adopt in rural areas • Foreign entrants are largely providing services which are focused towards the urban population	
Mass Transit Payments	• Mass transit payments in India are quite fragmented but present a huge opportunity • Fragmentation implies on-ground acquisition and activation • Incumbents could use their existing sales and distribution structures to do this acquisition faster	
Deeper Multi-point Integration	• Interoperable payments are multi-hop in nature, and can hence, have multiple breakage points; resulting in a poor success rate and hence a poor customer experience • One way to address this problem is to have direct integration with multiple banks, for e.g. A prominent payment gateway is integrated with all major issuers and acquirers to reduce number of breakage points • However, players like Google Tez have already started integrating with individual banks	
Focused Payments Solutions along with Value Added Services	• Payments solutions so far have been trying to solve payments needs. However, there is significant innovation, that can be done in terms of building specific experience and value added services for defined segments. For instance, different experience for elderly, a single app for doing inventory, billing and multi-modal payments for merchants etc. • Incumbents, being closer to the ecosystem can aim at developing such vertical focused solutions and gaining a foothold in such segments	

Source: Respective websites, mobile apps, and press releases

[31] Whatsapp co-founder's tweet, 2017
[32] Livemint (https://www.livemint.com/Consumer/CyEKdaltF64YycZsU72oEK/Indians-largest-audience-country-for-Facebook-Report.html)
[33] Economic Times (https://economictimes.indiatimes.com/magazines/panache/indians-spend-roughly-3-hours-a-day-on-smartphones-but-are-they-paying-big-bucks-for-apps/articleshow/62866875.cms)
[34] Economic Times (https://economictimes.indiatimes.com/small-biz/startups/newsbuzz/amazon-pay-gets-rs-195-crore-more/articleshow/63182332.cms)
[35] South China Morning Post (http://www.scmp.com/business/companies/article/2130400/china-moves-further-towards-cashless-society-payment-giants)

Conclusion

Entry of global players is likely to affect the emerging payments landscape in India due to their significant capabilities, platform play and existing user base. While the global players have advantages, there is significant headroom for the fintech ecosystem in India to grow in multiple areas and provide growth for all players. It would require early opportunity identification, and accelerated execution. Local players may need to consider carving out niches for themselves or even play at scale. The approach taken by these global players suggests their focus on urban and semi-urban markets. Local players could consider exploring growth options in rural and semi-urban areas, which lack focused solutions. Further, language is still a challenge when it comes to India. Incumbents could look at delivering multilingual rural payments focused solutions to capture that market. Offline retail payments, mass transit payments are potential opportunity areas. However, these require concerted effort for acquisition due to a fragmented market. Further, the payments solutions till now are focusing on solving the payment use case. Incumbents could customize this for various user segments in terms of the user experience and in terms of additional services, on top of payments. This is where incumbents could have an edge over global players and should play it to their advantages.

Increasing Merchant Payments Acceptance- the Journey from 3 million to 30 million

How Alternative Digital Payment Products can assist in addressing India's Merchant Acceptance Conundrum?

Indian payments landscape has seen path-breaking developments, creating exciting possibilities for the future. Very soon, consumers may have the option of being able to pay money to neighborhood grocer while messaging the grocery list through a chat app or pay for flight ticket via another payment service provider app while searching for travel options on a search engine which also owns the payment service app. However, there still are significant barriers to overcome when it comes to stimulating merchant acceptance for digital payments.

A Stubborn Problem to Solve - Defining India's Merchant Acceptance Conundrum

The euphoria over explosive digital payments growth seems to get tempered when it comes to India's retail merchants. There can be no gainsaying that merchant adoption will be the key for the economy to experience the broader networks effects of digital payments. Although USD 630 billion in size[36], about 90 percent of the retail merchant sector is highly fragmented, unorganized and characterized by low margins, low investments and poor tax compliance. Merchants find it expensive to adopt

digital payments and find themselves trapped in cash ecosystems, as they earn as well as pay for inventory in cash. Low consumer demand for digital payments also inhibits their interest. While the traditional, asset-heavy PoS business model driven by banks began almost 20 years ago, the country still has only a little over 3 million PoS terminals, leaving a vast majority of estimated 50 million merchants[37] out of the digital payment ecosystem.

Generally, the consensus seems that just like the mobile telephony growth story; India has the potential to leapfrog from cash payments to paying through a mobile or a smartphone. However, for digital payments to scale up in a country of such massive size- acceptance of such payments at merchant outlets – in rural and urban India needs to increase dramatically. While banks did respond with alacrity by crossing the 3 million mark in PoS installations, this growth does not seem to be enough. It still fails to catapult India into a group of countries like Brazil, China and Russia that have far higher number of PoS terminals per million population.

[36] Kaalari Capital- India Internet Opportunity, May 2017
[37] Source: Confederation of All India Traders

Exhibit: POS Penetration – India vs Other Key Markets

Number of POS terminals/million population

Australia **39,338**	Canada **38,892**	UK **32,858**
Sweden **25,800**	Brazil **24,657**	France **22,322**
China **17,744**	Russia **12,122**	India **2,369**

Source: BIS.org

Failure to grow the merchant acceptance infrastructure in line with increase in card issuance has been one of the key reasons why digital transactions have not grown on expected lines. Banks have issued 861 million debit cards, but most are used at ATMs to withdraw cash rather than to pay at POS terminals[38]. Getting the existing debit cardholders to use their debit cards to pay merchants can alone have a huge impact on digital transaction volumes. However, with just over 2300 PoS terminals per 1 Million population[39], card transactions at PoS have just failed to take off in the manner required. This merchant acceptance conundrum needs urgent answers. Failure to accelerate the rate of merchant adoption may result in the ignominy of missing the 30 billion digital payments target for second year in a row.
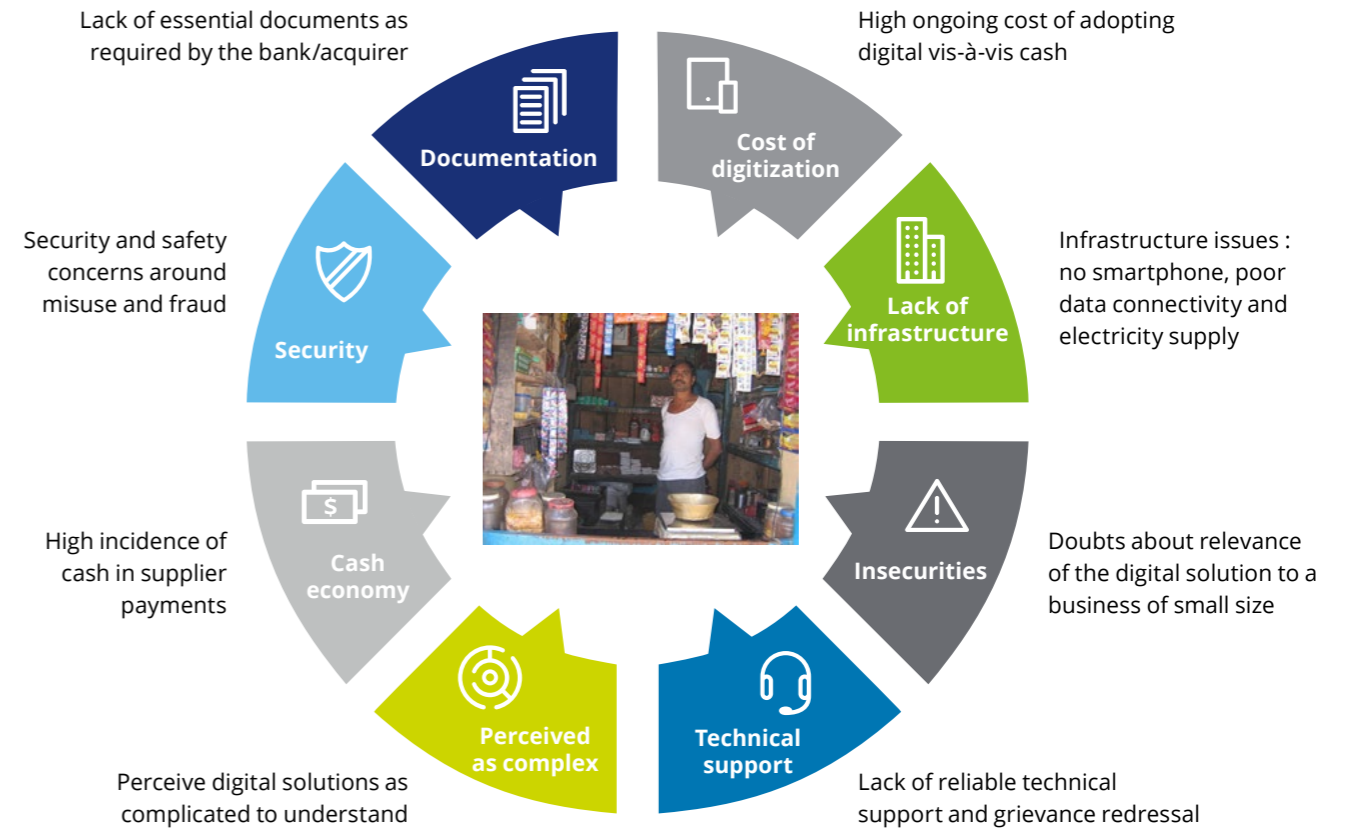
Decoding the Merchant Acceptance Puzzle

To unravel the offline merchant acceptance conundrum, it is important to remember that a one-size-fits-all approach to merchant digitization has severe limitations among small and micro-merchants across all geographies, especially in Tier-2 to Tier-4 population centers. Merchant acquiring business models that may have demonstrated success in Tier-1 centres are unlikely to achieve similar results across geographies and merchant categories due to variation in merchant business context and supporting infrastructure.

Exhibit: Key Merchant Pain Points

Lack of essential documents as required by the bank/acquirer

High ongoing cost of adopting digital vis-à-vis cash

Documentation

Cost of digitization

Security and safety concerns around misuse and fraud

Infrastructure issues : no smartphone, poor data connectivity and electricity supply

Security

Lack of infrastructure

High incidence of cash in supplier payments

Doubts about relevance of the digital solution to a business of small size

Cash economy

Insecurities

Perceive digital solutions as complicated to understand

Lack of reliable technical support and grievance redressal

Perceived as complex

Technical support

Source: Deloitte Analysis

Micro and small merchants in high volume low margin businesses find it challenging to understand the value proposition and benefits of digital payments, especially when the incentives to switch from cash-based behavior are next to nothing. Onerous documentation and activation process, high merchant fees, concerns around incremental tax liability and lack of motivation or rationale to jettison cash based ecosystem hold back merchant adoption. While network connectivity and power supply have improved, several other barriers remain. Small size merchants feel that given their small size of transactions, digital payments is not a relevant option for them. Further, transparency and audit trails associated with digital

payments often act as deterrent. Lack of consumer demand for digital payments and doubts around the ability of banks to provide timely on-field support also hinder adoption. Many merchants hold the view that the run-of-the-mill standard payment acceptance solutions do not address their unique needs. They want a solution that deftly balances cost, complexity and functionality.

Mobile Payment Innovations – UPI, Aadhaar Pay, QR Payments can Catalyze Offline Merchant Acceptance

The launch of alternative mobile payment technologies like QR codes, Bhim Aadhaar Pay and UPI has already begun the shift away from the traditional POS. What is also certain is that the disruption of

merchant acceptance space will not just remain confined to technology- Fintechs who have innovated in devices will also lead in dismantling the traditional POS business model. Some years back, a few merchant aggregators introduced merchants to light POS devices-small enough to fit into a palm and customized per-use pricing plans. New as they might be, these players still did not drastically alter the merchant journey map or the underlying business model. Merchants still had to undergo lengthy onboarding process and open a new current account with the partner bank of the aggregator. Barring some changes in the cost structure, most of the merchant user experience remained the same.

[38] RBI concept paper on Card Acceptance Infrastructure, April 2016
[39] RBI Payment systems data as on Mar 2018, Deloitte analysis

The growth in adoption of mobile payment applications such as UPI, Tez, Aadhaar Pay, Bhim, Bharat QR, wallet QR codes and more recently WhatsApp dramatically alters the gamef, as the smartphone now is also able to function as a merchant acceptance or POS device. At once, all cost line items that made POS business unviable for market participants have either been whittled down or been eliminated. Installing a POS at a typical merchant was a costly affair – it would cost anywhere between Rs 1,200 to 2,500 in just acquiring a merchant, INR 8,000 – 10,000 towards cost of the POS machine and an average monthly spend of INR 250 per terminal towards its maintenance. In return, acquiring banks would earn a paltry 5 to 8 basis point. Merchants would pay anywhere between 1-2 percent fees on digital payments, besides a host of other monthly and annual charges, depending on merchant type and geography.

Fast forward today, any small merchant with smartphone, mobile internet, finger print reader, Aadhaar number and Aadhaar linked bank account can just download the Bhim Aadhaar Pay app of any bank, follow a simple registration process to start accepting biometric based payments. Supply chain distribution partners can now be paid using UPI and if required, the merchant can withdraw cash from an ATM, Business Correspondent nearby or a bank branch.

A Perfect Storm in the Making – Role of Large Digital Platforms in Digitalization of Offline Merchants
Without doubt, the stars look perfectly aligned for the shake-up of the existing order in offline merchant payments, as for the first time several tailwinds are blowing in the right direction. Just using WhatsApp as an example, a ready user base of 250 million active users on day

one, puts it in the pole position not only for P2P payments, but also for small size every day (P2M) merchant payments, especially when the 'collect' feature is launched. Already, platforms such as Paytm, MobiKwik, and Google Tez also have merchants using their payments. These merchants accept payments in P2P mode using these apps. After all, customers and merchants are agnostic to industry terms like P2P or P2M and eventually evolve their own unique ways to communicate, buy goods and pay for them. Very soon, integration of UPI QR and Bharat QR will also create an interoperable standard QR code for merchants. Strong policy support for digital payments – in the form of merchant cash backs, incentives and proposed GST tax breaks, and the government's push to meet the 30 billion digital payment transactions target are all likely to hasten digital payments adoption by offline merchants.

However, the wheel of change will not just stop moving here. Both, global and Indian fintech and technology players, seem to realize that real value creation lies in building platforms at a scale, with rich ecosystems that enable the offline merchants to sell more-through improved physical discoverability (i.e. offline to online, O2O) and helping to sell more by taking them online. These platforms, while mining merchant data are also likely to link up with fintech lenders, banks and insurance companies to provide customized financial products (e.g. credit lines, insurance packages, investments etc.) to this merchant base.

A perfect storm, with mobile payments at its core, is therefore in the making. With more than a dozen UPI payment apps, Aadhaar Pay etc., QR codes the consumer payments experience has significantly improved. The ease of access and

superior user experience of these mobile applications is likely to facilitate addition of large incremental users to the digital payments bandwagon on a continuous basis. On the other hand, fintech providers will like to ring-fence customer loyalty by aggressively extending their platform to include merchants of every size, category and geography. This two-side network effect of platform e-marketplaces has the potential to drive digitization of offline merchants in India.

What the Future Holds for Merchant Acquiring in India
While the exact form and shape of disruption in the merchant acceptance space will only be unveiled over time, the crystal ball indicates seven key trends that are likely to facilitate evolution of the landscape over the next five years:

01. Self-onboarding or Do-it-Yourself (DIY) methods are likely to gain traction over traditional ways to onboard merchants on digital payments
Several studies[40] have highlighted the high friction experienced by merchants to enroll for a PoS device, in the traditional model. Going forward, do-it-yourself or DIY method of onboarding for a merchant payment system are likely to become the new normal among merchants. Aware and interested merchants will use their smartphones to discover alternative payment acceptance applications from the play store. They could fill up Aadhaar and existing bank account details, and print their own integrated QR code that enables them to accept multi-form factor payments on a single QR. Merchants' needs for assistance, if any, will be minimal and will be fulfilled by youngsters in the family or a key influencer in the peer group.

Exhibit: BHIM Case-study on Merchant Self-Onboarding

1. Download the BHIM UPI app from the play-store
2. Launch app and complete registration steps- choose language, verify mobile number, set passcode and validate bank account
3. On right side of app tap 'I am merchant' option in the menu
4. Enter merchant details : Business name, Business type, address, PIN code and press confirm
5. Merchant registration is successful
6. Tap 'merchant' on the app and again tap on right hand side icon to download QR code
7. Take print out of QR code
8. Customer scan QR code of the merchants to make payments

Source: BHIM app

Transitioning from assisted to self-mode involves several aspects around product, pricing, and interface simplification that were not adequately addressed by acquiring banks. Most merchants do not adopt digital acceptance, as they do not find it worth their time and money to invest in it, due to unclear benefits. DIY method through its simple onboarding journey, intuitive UI / UX interface and inherent low pricing has potential to remove a great barrier in merchant adoption and catalyze merchant trails on a larger scale.

02. Alternative digital payment technologies could drive digital acceptance among new merchant segments, that have been hitherto

excluded from the formal sector
Key to building a digital payment infrastructure is to determine how to scale up digital penetration among small and micro merchants beyond Tier-1 centres. Alternative payment acceptance methods such as integrated QR codes (UPI plus Bharat QR) and Aadhaar Pay underpinned by DIY or self-onboarding mechanisms are likely to drive new-to-digital offline merchants into the digital fold on a mass scale. Sustained awareness, education, government incentives and supply push are expected to induce the merchants to initiate trail and adopt digital payments.

More importantly, the simplicity of mobile P2P payment applications

is likely to bring a new category of informal and unorganized merchant segment (e.g. home repair services, drivers, milk and paper suppliers, doorstep laundry services, tutors, carpenters etc.) into the digital payments fold. Consumers, in their growing desire for convenience will nudge, influence, educate, and handhold this often-invisible merchant segment to download suitable P2P mobile application and start accepting payments in a safe and secure manner. Key digital enablers like the universality of Aadhaar, Aadhaar linked bank accounts, rising smartphone penetration and falling data costs could assist in propelling this change.

[40] RBI : Paper on Card Acceptance Infrastructure in India

Exhibit: Propensity of various merchant segments to switch to digital payments

Potential segment for digitization in unpenetrated markets like Tier-2 to Tier 4- both standard POS or asset light POS can be used. Value added services on POS key to acquisition

Micro merchants and domestic service providers a potential segment for self-onboarding on alternative digital / asset-light modes- UPI QR codes, Aadhaar Pay etc. in all tiers.

Chart labels:
- Educational institutes
- Jewellery
- Electronics & Mobile
- Fuel & LPG
- Apparel
- Restaurants
- Chemists
- Home furnishing
- Luggage & leather goods
- Footwear stores
- Kirana
- Salons
- Doctor clinic
- Carpenters
- Unorganized Taxi/ Auto
- Tutors
- Kitchenware
- Auto & Hardware
- Telco recharge agents
- Parking
- Toys & plastic goods
- Fruit & Vegetable vendors
- Food & Tea stalls
- Mobile accessories
- Laundry
- Milk vendor
- Stationery
- Cybercafés'
- Paper vendor
- Small home repairs

Y-axis: Transaction value potential (Low — High)
X-axis: Ease of penetration of digital payments (Low — High)

Source: Deloitte Analysis

Influencers or digital payment evangelists are likely to play a critical role to realize both the above scenarios. The criticality of creating awareness and user behavior change cannot be understated. Consumers and opinion leaders among merchant networks could play a meaningful role in nudging other merchants to adopt alternative payment acceptance modes. Current incentives provided by the government, although well intentioned, may not result in sustainable behavior change among merchants. The incentive programs could be reworked to align them to the right drivers required to effect a sustainable behavior change. Merchants have peer-to-peer informal networks and associations. Key opinion leaders or influencers in those informal networks may be tapped and incentivized for creating awareness, growing adoption, and sustaining digital transactions. Mobile money agent networks operate on the same principle-master agents' handhold and oversee sub-agents. A similar master merchant model underpinned by a suitable incentive structure could be explored as an alternate approach to assist in sustained inclusion of merchants in digital payments.

03. Proprietary, closed loop, QR code-based payment modes are likely to fade away to make way for an interoperable, UPI based QR code payment acceptance mode

During the difficult days following demonetization, proprietary, closed loop QR code-based payment modes powered by mobile wallets gained popularity among small merchants, especially in the urban and peri-urban areas of the country. As UPI raced ahead in consumer adoption due to its simple and superior user experience, closed loop mobile wallets struggle with strict KYC regulations and lack of interoperability. Bharat QR, launched by NPCI in collaboration with MasterCard, Visa and American Express, further increased the clutter from a merchant perspective.

Going forward, merchants using closed loop QR code payments are likely to transition to an open, interoperable and integrated UPI-based QR payment acceptance method that allows them to accept payment from any mobile application (UPI or bank owned mobile banking) and any underlying form factor such as UPI or debit and credit cards. Integration of various QR codes-closed loop, UPI Bhim QR and Bharat QR into a single integrated QR code could result in a greater likelihood of adoption, especially among new-to-

digital merchants. The differentiated MDR[41] regime for QR code payments will further fuel the adoption cycle. It is also possible that card associations can be the member of UPI, if the card number can be used as an identifier like the UPI ID, and if MDR rates between the two systems are harmonized[42].

If UPI saw a boom in the year gone by mainly driven by peer-to-peer payments, this year could see more merchants starting to accept UPI payments using integrated QR codes downloaded in the self-mode on their own smartphones.

04. Fintechs with large ecosystems covering a full spectrum of merchant value chain needs seem to be better positioned to hold sway over other players

The clear distinction among fintech companies such as payment companies, lending platforms, loan and insurance aggregators are starting to blur. Inherent low margins in a payments only business model is triggering a horizontal expansion and is turning Fintechs into financial supermarkets. On the other hand, top e-commerce behemoths are not just content by simplifying the payments experience for their customers, but are going a step further and building up their fintech footprint as a growth engine for the future.

Exhibit: Opportunities for Collaboration between Traditional FI's / Banks and Fintech/e-commerce Platforms

Advantages
- Large asset base
- Perceived stability and trust
- Large customer base
- Brick and mortar presence
- Experience in risk management
- Wide product suite
- Links to government and regulator
- Member of card associations

- Access to existing customer base & markets
- Access to data to test innovations
- Funding
- Branding and trust
- Distribution channels
- Risk management expertise
- Regulatory cover
- Card scheme association

- Limited funding
- Lack of trust/ brand recognition
- Limited experience in risk management
- Limited exposure to regulatory compliance
- No membership to card associations
- Poor access to regulators

Disadvantages

| Banks and traditional FIs | Collaboration | Fintech and e-commerce platforms |

Disadvantages
- Slow innovation
- Legacy technology, systems and processes
- Slow decision making
- Low customer centricity
- Silo-based organization
- Underleverage data analytics
- High cost structures
- Laggard attitude to business model innovation

- Low cost, tech driven solution
- Customer-centric, solutions and journey based approach
- Segment driven customized solutions
- High quality talent workforce
- Nimble and agile approach
- Business model innovation

- Innovation focused
- Large customer base
- Nimble and responsive
- Customer-centric
- Specialized offerings
- Latest digital technology, improved algorithms
- High quality tech-talent
- Creative and design oriented
- Frugal solutions

Advantages

Source: Deloitte Analysis

Going forward, we can expect that large incumbent e-commerce players, banks and fintechs will compete as well as collaborate with each other to fill gaps in the market, drive efficiencies, and collaborate with existing players through innovative merchant business models. As listed in the exhibit, there are a number of opportunities for all the three players to collaborate and solve merchant problems. Increasingly, banks in India are opening up their Application Program Interfaces (APIs) to fintech companies, allowing them to test innovative new products on the bank's customer data. The key challenge for all sides is to find the right strategic

partners and work collaboratively to solve merchant pain points.

05. Alternate lending is likely to become a default offering to merchants accepting digital payments
With growing digitization in the payments space, the largest beneficiaries could be the digital lending startups. Trends such as digitization of offline merchants due to a growing PoS base, e-commerce offline-to-online (O2O) push and growing formalization of the retail merchants are being seen by lending startups as a next growth opportunity to extend the lending offering to the hitherto unaddressed MSME sector

comprising 30 million enterprises[43]. Traditional lenders typically grapple with several hurdles while evaluating the credit-worthiness of small merchants, due to lack of proper documentation and invisible cash-flows. A number of PoS aggregators, either on their own or through partnership with fintech lending startups, are increasingly seeking to leverage the card transaction data to assess merchant cash-flow and repayment capacity and lend them on that basis. A prominent merchant aggregator in the mPoS space has so far disbursed merchant loans totaling over INR 71 crores with an average ticket size of INR 60,000.

Another prominent, Bengaluru-based lending fintech, has collaborated with almost a dozen PoS and PG aggregators as well as large e-commerce platforms, to offer merchant cash advance – a collateral-free line of credit solution that offers funds up to 200 percent of the merchant's sales from card payment machines and payment gateways.
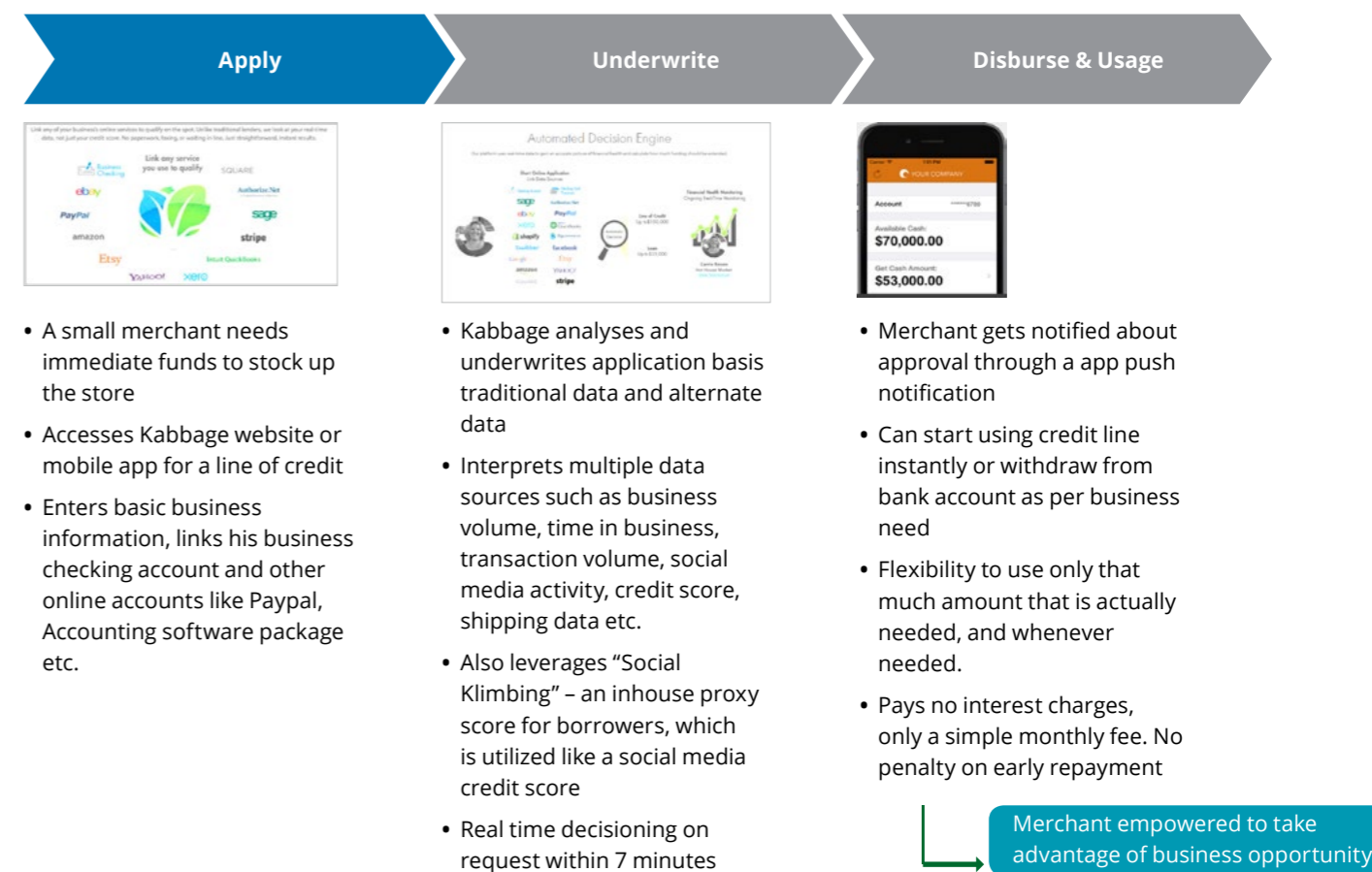
It is expected that the Government will collaborate with fintech players to provide access to them access to GST invoices filed by merchants. To

accelerate merchant digitalization, the Government could also consider allowing fintechs to start and run the TReDS platform[44]. Connecting GST IT network with TReDS and allowing fintechs to also participate in bill discounting for large merchants and service providers.

With increasing levels of merchant digitalization and supply side innovation are likely to result in evolution of more matured merchant lending business models to tap an

expanded universe of merchant data. These include savings and current accounts, to accounting software, payment processors, e-commerce shipping data, and other online data sources such as GSTIN, TReDS, credit bureaus and several other alternate data sources like social media likes for the merchant. Fintech players could also partner with accounting software players like Tally, Zoho, Intuit and Quickbooks to pick up granular merchant business data with appropriate user consents.

Exhibit: Rethinking Merchant Cash Advance- Kabbage Case Study

| Apply | Underwrite | Disburse & Usage |

- A small merchant needs immediate funds to stock up the store
- Accesses Kabbage website or mobile app for a line of credit
- Enters basic business information, links his business checking account and other online accounts like Paypal, Accounting software package etc.

- Kabbage analyses and underwrites application basis traditional data and alternate data
- Interprets multiple data sources such as business volume, time in business, transaction volume, social media activity, credit score, shipping data etc.
- Also leverages "Social Klimbing" – an inhouse proxy score for borrowers, which is utilized like a social media credit score
- Real time decisioning on request within 7 minutes

- Merchant gets notified about approval through a app push notification
- Can start using credit line instantly or withdraw from bank account as per business need
- Flexibility to use only that much amount that is actually needed, and whenever needed.
- Pays no interest charges, only a simple monthly fee. No penalty on early repayment

Merchant empowered to take advantage of business opportunity

Kabbage unique'techfin' business model focused on product bundling, speedy underwriting and customer centric underwriting limits are its USP

Source: Kabbage website resources

[43] Website: Capital Float

[44] It is an electronic platform that allows auctioning of trade receivable. A financier (typically a bank) buys a bill (trade receivable) from a seller of goods or merchant before it's due or before the buyer credits the value of the bill. In other words, a seller gets credit against a bill which is due to him at a later date. The discount is the interest paid to the financier.

In the short term, PoS acquirers (mainly non-bank acquirers) are likely to use working capital finance or credit lines calculated on the basis of the merchant's digital payments volume, as a hook to attract them to digital payments. However, in the longer term, Fintechs have the opportunity to redefine use of varied type of merchant business information, to provide them an easier access to working capital using real-time data models, tapped from multiple external parties. Either way, alternate lending is expected to become a default offering to small and medium size merchants in the near future, as they shift their business on digital platforms.

Conclusion

The launch of alternative digital payments underpinned by the mobile represents the single biggest opportunity in recent times to digitize India's vast merchant landscape. While newly launched payment innovations such as the UPI, Aadhaar Pay and integrated QR codes show much promise, it would still be fair to remember that the battle against cash will take many more measures than just innovating on low and asset-light cost merchant acceptance solutions. It requires a concentrated and coordinated action by all stakeholders in the digital ecosystem. It is quite encouraging to see policy-makers set an ambitious and forward-looking agenda for a 'less-cash' digital society, in such a comprehensive manner. While industry players may have found a way to trigger a strong adoption wave among consumers

to use new payment products, micro and small merchants continue to be wary of digital payments. Industry participants will need to redouble their efforts to create merchant awareness and education in order to dislodge a well-entrenched cash behavior. Although the government initiative to fund digital incentives in laudable, it is equally pertinent to ensure that good money is not spent on transitory benefits. Going forward, it would serve well to recognize the role of opinion leaders or influencers in the merchant network and consider re-targetting the promotional schemes at them in order to effect a long-term and permanent behaviour change among the broader merchant network.

A lot is happening in UPI space, but now the focus needs to shift on how to catalyze the offline merchant payments adoption. It is imperative that fintechs focus their attention to innovate and build new and multiple use-cases for proximity offline payments. The interoperable QR code (Bharat QR+ UPI) seems to be a step in the right direction. Going forward, fintechs need to innovate on bigger value propositions for merchants like loyalty, post-sale analytics, and merchant ratings, on top of the UPI platform. Incumbents will do well to remember that only by having la sharp focus on real merchant value proposition, awareness creation, and a well-engineered market delivery model, they are likely to make tangible progress towards conquering this last frontier for digital payments.
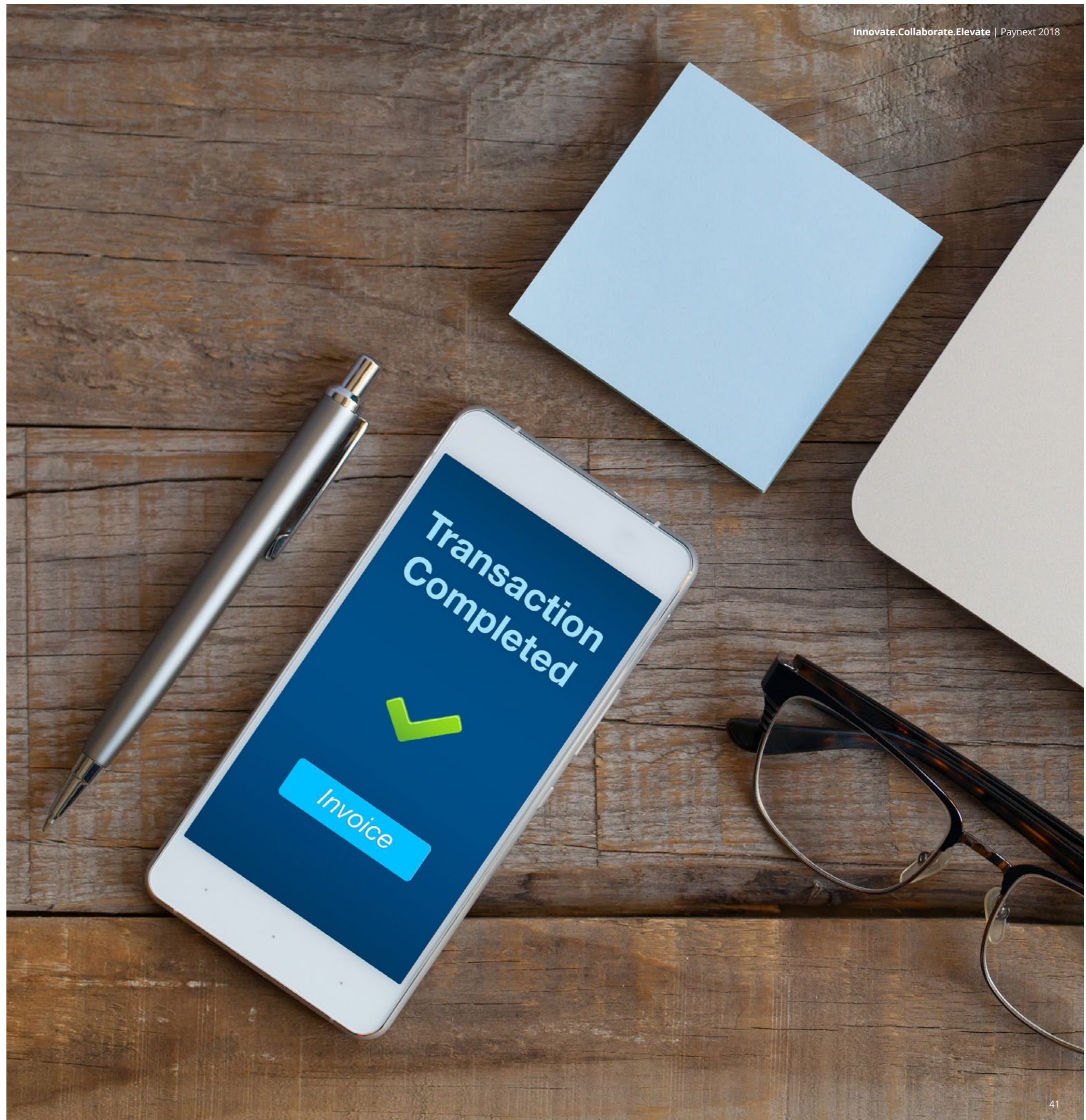
Moving Beyond: Capturing Value from Payments Data

With the proliferation of digital payments in the country, the industry is witnessing a striking shift in the way payments companies operate. The reasons attributed to this range from increasing customer preference for digital offerings, industry's push towards customer experience, and cost optimization efforts, and enabling factors such as the government's push towards digitization, demonetization, India stack and indigenous initiatives such as RuPay and UPI. In order to expand their portfolio of offerings, and, thereby, enhance their value proposition, these companies are increasingly exploring ways to move from a pure play 'transaction-led' business model, to a 'data-led' model.

These companies are finding ways and means to monetize the large swathes of data assets that they have managed to generate, while facilitating payments transactions aligned with their changing business strategies and objectives. They are increasingly leveraging these assets to derive meaningful data insights and application, and creating unique experiences and use cases for their users, customers as well as other participants in the payments value chain for both internal as well as external consumption:

- Internal use cases involve new product development, customer segmentation, targeting, generating personalized offers and rewards, loyalty programmes, and credit risk assessment, among others

- External use cases refer to payments companies providing data to external entities including both their customers, suppliers as well as other value chain participants – selling raw data or insights or a new offering altogether.

The key to unlock and monetize the payments data would depend on how an organization uses transaction-level data in conjunction with other external data, converting raw data into composite and transformed data, coupled with right granularity and dimensions. For instance, supplementing the raw transaction data with contextual data such as location, product-wise, channel-wise, segmentation, weather data and insights from social media could strengthen the use cases, and provide actionable insights for the companies and its value chain participants. This would require companies to either develop strong analytical capabilities in-house, or build strategic partnerships.

Data, Everywhere, Every Time
Today, most businesses, even the ones, which are using cutting-edge data science, and big data factories that churn out insights, generate more data than they can process. A look at the transactions processed via various payment modes show a steady increase in the value and volumes, where newer instruments such as UPI and USSD are growing leaps and bounds, led especially by the retail segments.

As illustrated in the exhibit, there has been a phenomenal increase in the digital payments, especially in emerging digital channels. The 'Cashless India' push from the Government and setting up of platforms such as UPI has contributed extensively towards this growth. This has led to digital players such as Google (Tez) and WhatsApp to enter this space, and launch their own payments services. This also translates to more data being generated through payments, and therefore, more opportunities for monetization of data.

**Exhibit: Growth in Digital Payments (Volume)**
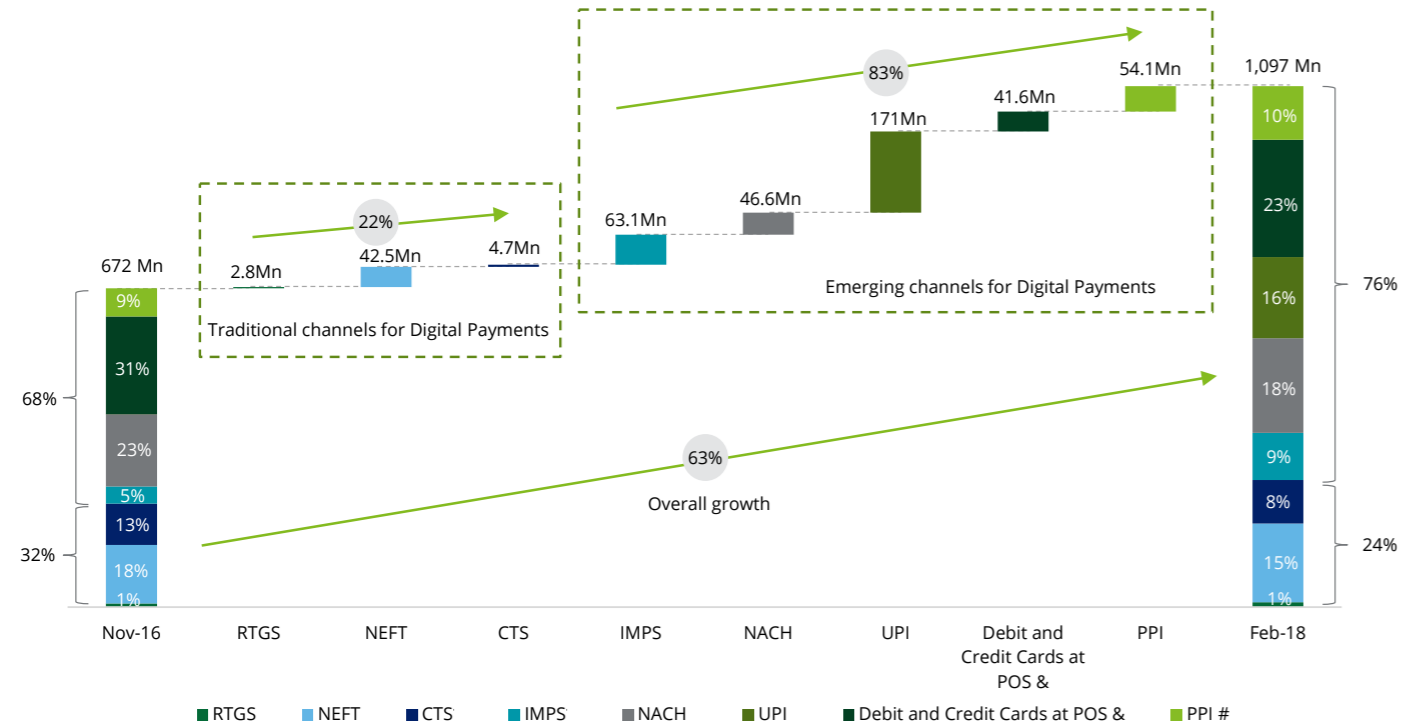
&: Card transactions of four banks.
#: PPI issued by 8 issuers for goods and services transactions only

Source: RBI / NPCI

The challenge for organizations now seems to be to convert this raw data into information that can be leveraged meaningfully. This would involve identifying other types and sources of data – both internal as well as external, capture data from these disparate sources, centralize the storage, and use it to their advantage.

At a high level, the payments ecosystem can be broken down into Issuers, Acquirers, Banks, Payments networks, Payment processors including payment gateways, aggregators and clearing houses, Payment wallets, and finally the Merchants (exhibit). All payment transactions touch one of these or multiple 'payments companies' in the ecosystem who capture, store and process data. In this competitive environment, each of these players are fighting for a slice of the payments pie, and thereby the attention of the customer. While each of the players have the underlying data around the payments that they have processed, the opportunities to monetize this data is limited by what data they possess.

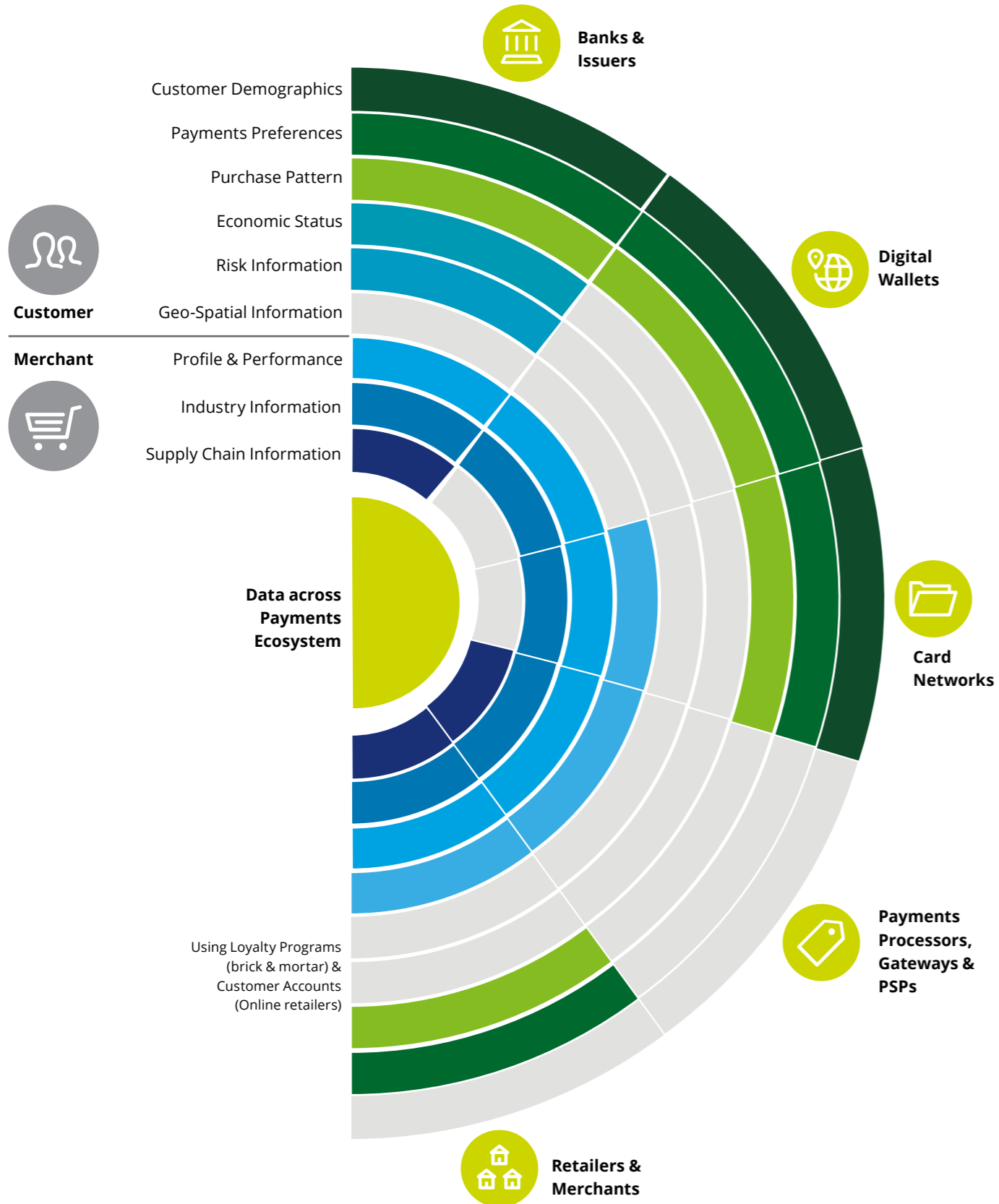**Exhibit: Data Sources & Channels in Payments Ecosystem**
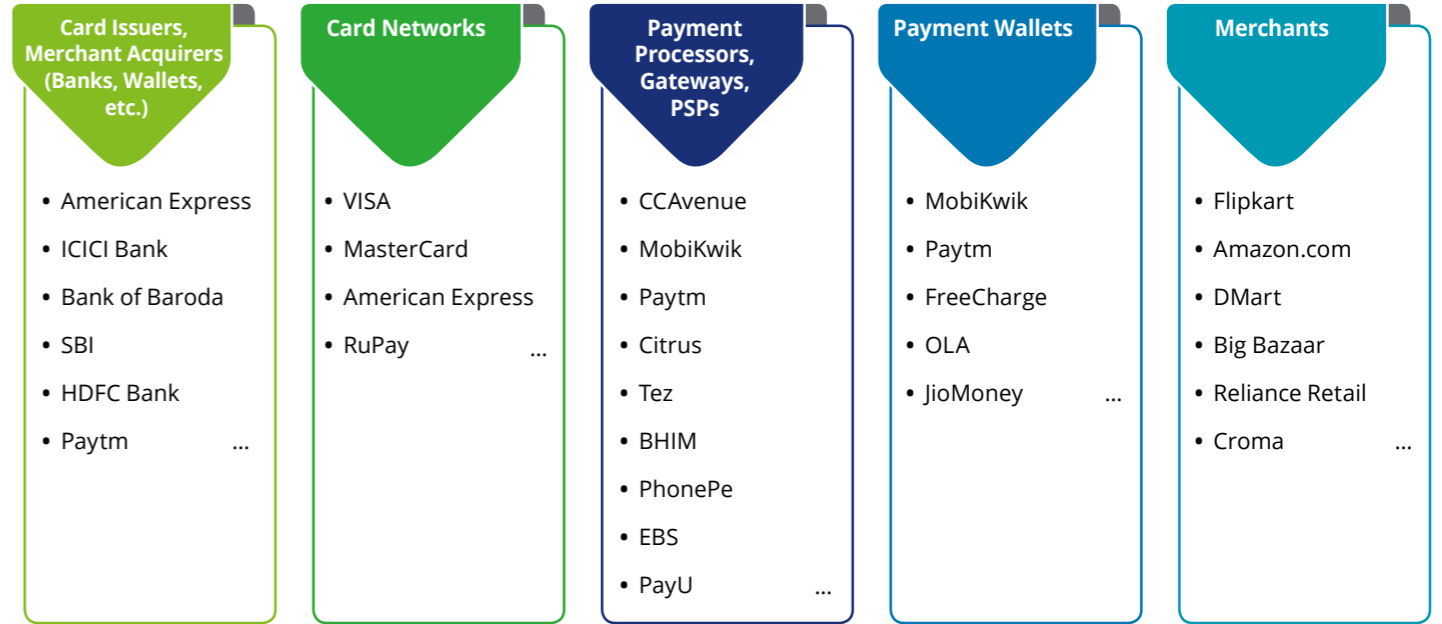
Source: Deloitte analysis

As illustrated, banks and networks are in an advantageous position in terms of information about the customer profile and behaviour, which the retailers and merchants typically lack. However, understanding of the customer, and his/her behaviour, and spending patterns, are crucial for the retailers and merchants to predict demand, target offers, and customize experiences. Similarly, geo-spatial and supply chain related information that provides context and relevance to the transactions are abundant with retailers and merchants. Combining merchant side data with

customer data and transactions, would give a broader view of the payments value chain. For instance, customers spending patterns coupled with geo-spatial information from transactions can be used to push offers to a targeted customer base based near a merchant.

Therefore, monetization opportunities are likely to be dependent on how well a player forges relevant partnerships across the payments value chain, so as to generate meaningful insights, and curate offerings to augment experiences and use cases for the participants.

Exhibit: Data across Payments Ecosystem

Customer
- Customer Demographics
- Payments Preferences
- Purchase Pattern
- Economic Status
- Risk Information
- Geo-Spatial Information

Merchant
- Profile & Performance
- Industry Information
- Supply Chain Information

Data across Payments Ecosystem

Banks & Issuers
Digital Wallets
Card Networks
Payments Processors, Gateways & PSPs
Retailers & Merchants

Using Loyalty Programs (brick & mortar) & Customer Accounts (Online retailers)

Source: Deloitte analysis

Online retailers such as Amazon and Flipkart differ from their brick and mortar counterparts, since they have far more customer context. Customer profiles created on these websites, coupled with transactional information and social media networks, provide these players with superior depth and breadth of information that each of the traditional players cannot match. Digital players such as Facebook and Google are probably at the farthest end of the spectrum with customer information, behaviour, transaction and social media, and network information all residing in-house. This information asymmetry strengthens the need for strong partnerships for traditional payments companies to make the most out of the payments data.

Combine. Collaborate. Win
Data is the ever-growing new asset in today's organizations, and using this asset to make profits and deliver competitive advantage to the organization is what Data Monetization is about. Monetization of this asset is a business problem that needs a sound strategy, effective execution to create value, and a business model to realize the business gains. Answering some essential questions on how value from this asset can be delivered and to whom the value can be delivered to, would enable these companies to understand the opportunities better.

What is the data that payment companies intend to monetize?
Exhibit: What is the data that payment companies intend to monetize?

Simple	• This involves providing internally sourced data feeds to other parties in an aggregated or raw form, directly for their consumption.
	• Payment transactions intrinsically can provide information about 'What', 'When' and 'Where' which could be of value for select use cases.
	• The recipients including customers, merchants and aggregators may in turn use this raw data directly or transform by combining with own data into data forms that are more valuable for them or their value chain participants.
Transformed	• The value of the data and, thereby, the money that it can generate drastically increases when data present across disparate systems are processed by the payments companies and the output is shared with other parties.
	• Processed data, in this form, can provide more context to the behaviour and patterns in the payment transaction.
	• Though this may force the payments data provider to set up analytical and technical capabilities within the organization, it produces far more value than sharing raw data.
Enriched	• Enriched data feed pertains to the data and analytical insights that can be provided combining payment companies' data along with external data sources. The result is a ready-to-consume feed(s) and associated services that results in maximum value creation from the payments data.
	• Data from external sources, covering what triggered or influenced the payments, can provide context and answer the 'Why' aspect.
	• This not only generates new revenue streams but also encourages the payment providers to think of new business models based on open platforms and APIs that may be used to provide these services seamlessly.

Source: Deloitte analysis

Who would see Value in Payments Data?
Exhibit: Who would see Value in Payments Data?

|	
Self	A good point to start with is oneself. Enterprises must first look inward to start the journey to monetization of data. This would enable payments companies to understand the current silos of data that they possess, their processing abilities, technology shortcomings and process changes required to leverage the existing data.
	This would also present opportunities to tap into new sources of data, which can bring greater value to the enterprise. Banks along with card networks have already started using enterprise data to engage with the customer, develop new products, increase cross-/upsell, target marketing messages and increase usage of its offerings among others.
Adjacent Participants	Opportunities to monetize data exist both in horizontal and vertical value chain delivery. In the age of the experience economy, personalized experiences are key to higher degree of customer engagement, better brand recall, and hence, increased top and bottom line. Spend data with analysis on trends and categories are being shared with customers through enterprises' own and external applications. Tools for budgeting, financial management and prediction of spend, are being offered by these enterprises that have gained in popularity in the last few years.
Others	Cross-market value delivery to other sectors and industries need a very mature data factory where payment providers can identify data that can be valuable to others. The key focus for enterprises under this is to sell data to external parties that are not a part of their value chain for their consumption. For example, a cab aggregator sharing the payments data with banks for credit assessment of its drivers.

Source: Deloitte analysis

What can Payment Companies do with Data: Putting the 'Who' and 'What' together?

Every organization that has ambition to leverage data monetization opportunities would need to meticulously chart out a roadmap, and design a business model that is best suited for its broad vision, goals, and objectives. This would translate into putting together the answers to 'who' and the 'how', which shall help the organization clearly spell out the scale and scope of their envisioned strategy.

The exhibit below shows the various areas where payments companies can operate, based on their current maturity, as well as their ambitions to build data monetization capabilities. This provides us with three steps in the path to maturity – Leverage, Extend and Scale.

Exhibit: Maturity Model for Monetization of Payments Data
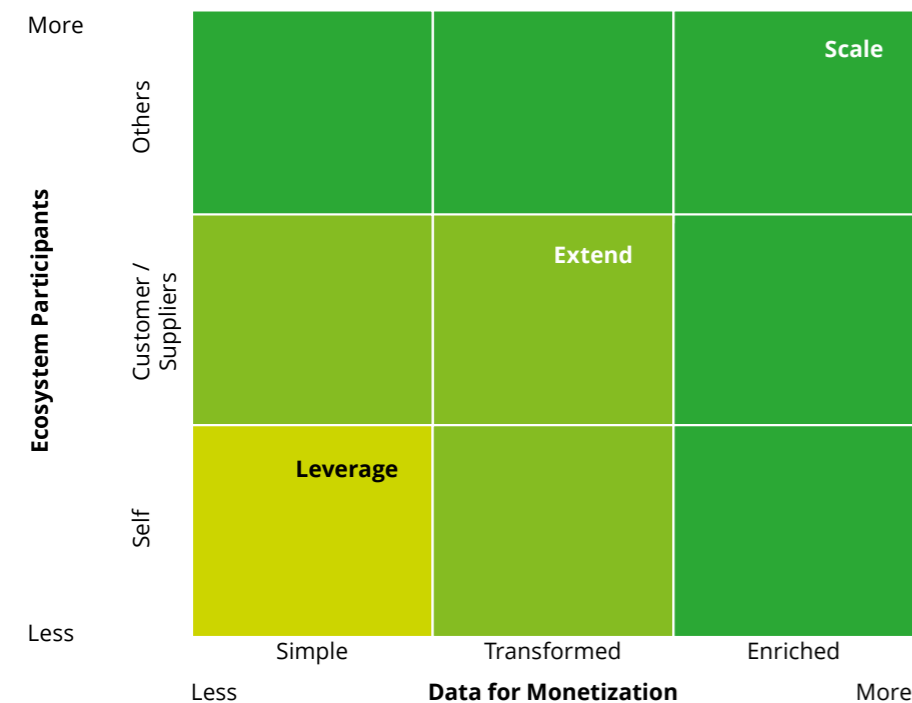
Source: Deloitte analysis

Leverage: Targeting Immediate Opportunities

In a market crowded with similar players, a leading coffee chain has made payments its business, in order to differentiate itself and offer personalised customer experiences. By offering discounts on its own wallet payments, the coffee chain has shifted up to 27 percent of its customer base from cash payments to its wallet. This approach has allowed the chain to know its customers through the enormous data generated and at the same time simplify the ordering and payments process for the customer.

Leveraging data for internal use is the first step to monetization of data and requires the minimum amount of time. Data generated, housed and used within the organization, is the first step in constructively using data generated in-house in the journey to monetization. Many banks and card companies have already started using this data to make better decisions, chasing both bottom line and top line growth. While not contributing directly to the top line, process inefficiencies can be plugged by studying enterprise data within the organization, solving business problems. Additionally, using the enterprise's own data to develop services and products would not pose any issues related to data privacy regulations.

Extend: Transforming Data, Benefitting Adjacent Participants

The next stage in the path to attain data monetization maturity is to start extending data generated in the organization to the advantage of others starting with the customers and suppliers. Real value can only be tapped when the data starts talking, which needs processing and building analytical models on the data, to derive unique insights for the companies using the payments data. This requires the payments data providers to evaluate and augment their technical and analytical capabilities so as to provide transformed data to other ecosystem participants.

A leading supermarket chain in the United States uses a data ecosystem to monetize - for a subscription fee, the retail chain provides suppliers with an analytical platform where they can access retail transaction data, understand product category movement and develop targeting strategies. The platform anonymizes the data shared with the suppliers thereby protecting customer privacy. In another case, customers have been delighted with information about their spend patterns by the banks, which allow setting budgets, tracking expenses and provides key highlights and recommendations.

As the organization extends in-house data to other parties, regulations on data sharing and privacy concerns would have to be addressed, to ensure compliance with all extant regulations. This may even include taking express customer consent for data sharing.
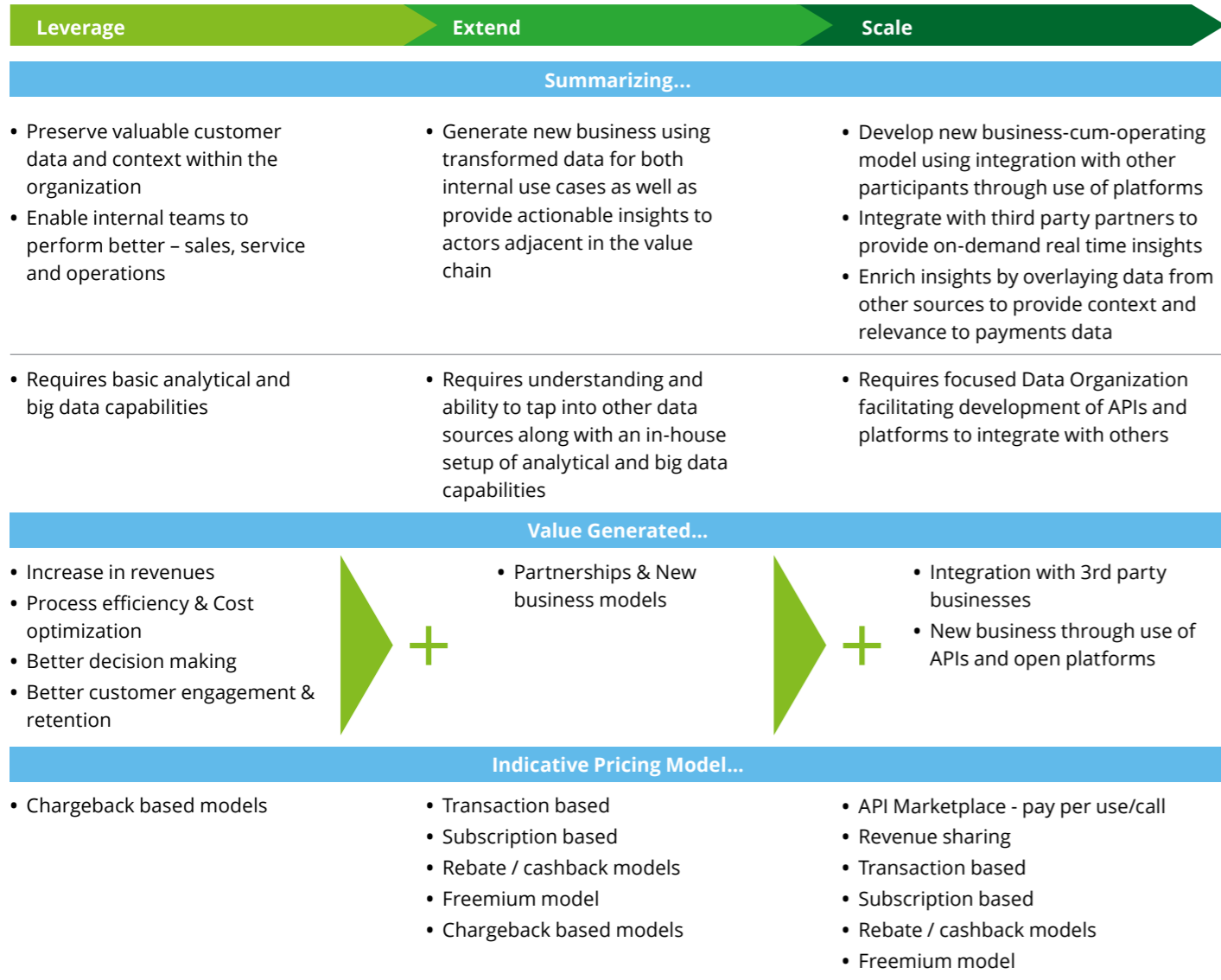
Scale: Striking Strategic Partnerships

Taking the monetization efforts to the next stage involves the development of strategic partnerships with other parties. Various organizations are exploring partnerships with other value chain participants such as merchants, retail chains and supply chain participants, to source data from these players, combining it with, and, thereby, enriching the in-house data in the process, generating much more value.

To serve these partnerships, payment companies are developing platforms where other parties can directly provide and/or access information through APIs, which would allow deeper integration with the services and applications of third parties. A robust service based on providing data and analytical insights to both, customers and third parties would go a long way in generating the most value from payments data. This would not only add a new revenue stream, but also force the providers of data to think of innovative business models based on platforms and Application Programming Interfaces (APIs), which can be used to access these services on demand. Advanced technical expertise would facilitate generation and delivery of information in real time.

An innovative platform developed by one of the leading banks in the United States, provided access to merchants and marketers to identify targeted audience for marketing. The platform's underlying advanced machine learning capabilities predict future buying behaviour of the partner's desired audience based on payments data transactions with context added through external data from merchants. Customer data is anonymized and aggregated before being used by the analytical models and any information that can identify the customer personally is not exposed to the partners.

Exhibit: Value Generation through Data Monetization

Leverage	Extend	Scale
Summarizing…		
• Preserve valuable customer data and context within the organization • Enable internal teams to perform better – sales, service and operations	• Generate new business using transformed data for both internal use cases as well as provide actionable insights to actors adjacent in the value chain	• Develop new business-cum-operating model using integration with other participants through use of platforms • Integrate with third party partners to provide on-demand real time insights • Enrich insights by overlaying data from other sources to provide context and relevance to payments data
• Requires basic analytical and big data capabilities	• Requires understanding and ability to tap into other data sources along with an in-house setup of analytical and big data capabilities	• Requires focused Data Organization facilitating development of APIs and platforms to integrate with others
Value Generated…		
• Increase in revenues • Process efficiency & Cost optimization • Better decision making • Better customer engagement & retention	• Partnerships & New business models	• Integration with 3rd party businesses • New business through use of APIs and open platforms
Indicative Pricing Model…		
• Chargeback based models	• Transaction based • Subscription based • Rebate / cashback models • Freemium model • Chargeback based models	• API Marketplace - pay per use/call • Revenue sharing • Transaction based • Subscription based • Rebate / cashback models • Freemium model

Source: Deloitte analysis

Early success for data monetization would primarily lie in online and mobile channels. Brick and mortar counterparts would need to build in-house capabilities coupled with more enriching partnerships to compete effectively in this new-age data-led business effectively.

Opportunities Galore, All Around, All the Way

With the surge in digital payments, data has become conveniently accessible for decision-making and analysis. Payments data amassed by any organization can be leveraged for either internal or external consumption, or even for both.

While internally, payments data can be used from targeting new customers, developing new products, increasing usage of products and lowering prices among others, external use cases range from providing tools or insights to end-consumers for their consumption in providing the data to value chain partners and others for their consumption. For example, banks work together with membership rewards program managers, to allow customers to accrue and use rewards points to pay at select partners.

Aspects such as enterprise-wide data strategy, maturity of analytics programmes and the nature of complementary partnerships that an organization builds, would be key in generating value from payments data. In fact, partnerships have gained even

more traction in the recent few years – in terms of number, complexity and value – with the prevalence of APIs as financial institutions are collaborating with and leveraging the capabilities of other organisations to deliver value to customers. For example, banks work together with membership rewards program managers, to allow customers to accrue and use rewards points to pay at select partners.

The exhibit below shows the journey of an e-Tailer as it goes higher in the maturity model for monetization of payments data
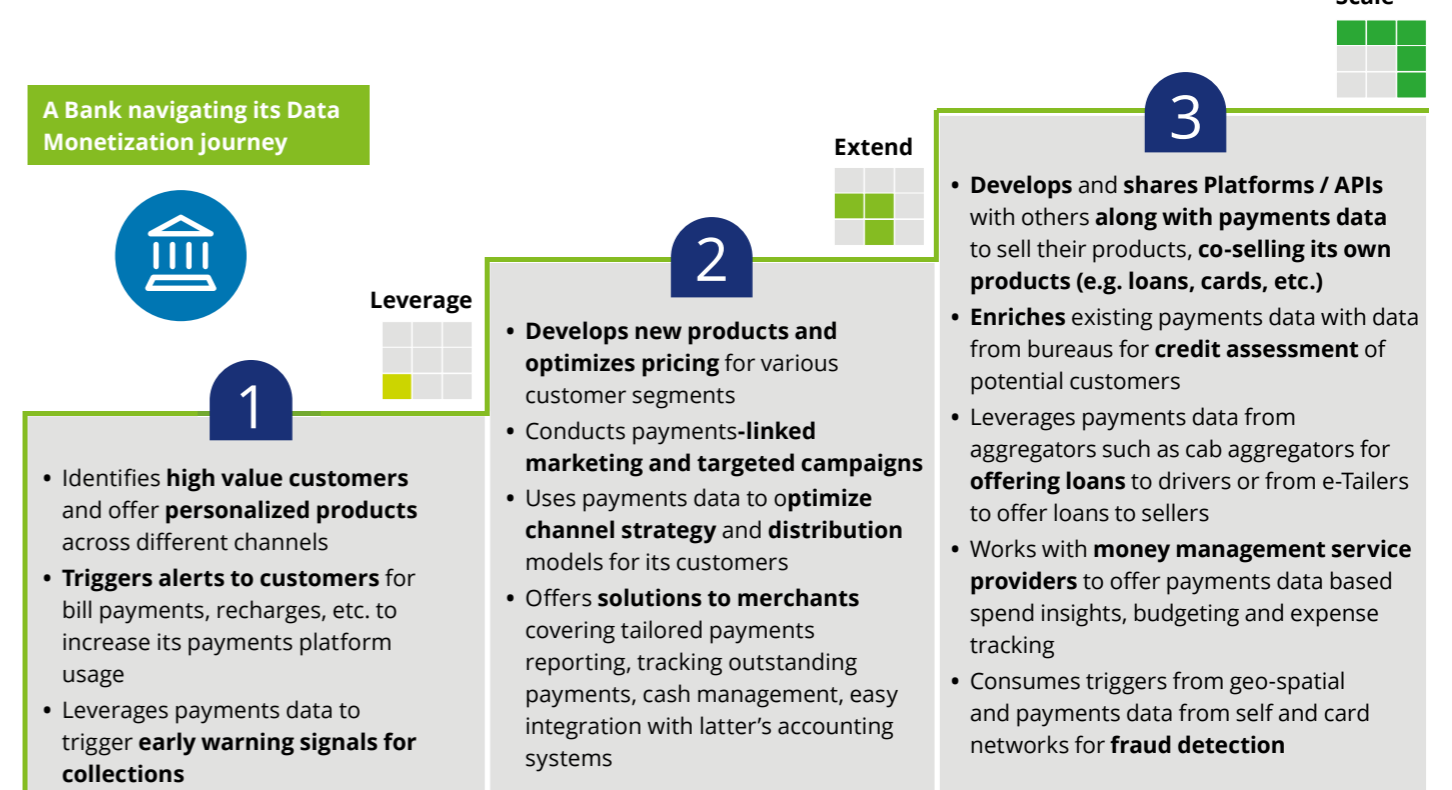
Exhibit: Illustrative Journey of an e-Tailer (as it goes higher in the maturity model for monetization of payments data)

Scale

An e-Tailer moving up the maturity ladder

Extend

Leverage

1
• Identifies and targets **high value micro- segments** based on payments data
• Tracks purchase behaviour and pushes **one-time offers** as well as offers **subscription services**

2
• Shares product-wise payments data with sellers for their:
  – **Sales & Marketing Strategies**
  – **New Product Development**
  – **Inventory management**
• Leverage techniques such as classification, clustering and propensity modelling and ascertain **product recommendation for up-sell / cross-sell**
• Shares **insights** on **spend pattern** with customers

3
• Opens up **platform for targeted marketing** and **advertisements** for other players
• Shares payments data with Banks facilitating **credit profiling** of sellers
• Leverages credit history from credit bureaus along with own payments data for providing **'Buy Now, Pay Later'** option to customers
• Shares location-wise payments data with logistics partners as an input for **locational analysis** for hub-and-spoke creation
• Collaborate with Telecom providers to leverage **location details** and create targeted offers for specific **micro-markets**

Source: Deloitte analysis

Similarly, exhibit below highlights the journey of a bank as it climbs the data monetization maturity ladder.

Exhibit: Illustrative Journey of a Bank (as it climbs the data monetization maturity ladder)

Scale

A Bank navigating its Data Monetization journey

Extend

Leverage

1
• Identifies **high value customers** and offer **personalized products** across different channels
• **Triggers alerts to customers** for bill payments, recharges, etc. to increase its payments platform usage
• Leverages payments data to trigger **early warning signals for collections**

2
• **Develops new products and optimizes pricing** for various customer segments
• Conducts payments-**linked marketing and targeted campaigns**
• Uses payments data to **optimize channel strategy** and **distribution** models for its customers
• Offers **solutions to merchants** covering tailored payments reporting, tracking outstanding payments, cash management, easy integration with latter's accounting systems

3
• **Develops** and **shares Platforms / APIs** with others **along with payments data** to sell their products, **co-selling its own products (e.g. loans, cards, etc.)**
• **Enriches** existing payments data with data from bureaus for **credit assessment** of potential customers
• Leverages payments data from aggregators such as cab aggregators for **offering loans** to drivers or from e-Tailers to offer loans to sellers
• Works with **money management service providers** to offer payments data based spend insights, budgeting and expense tracking
• Consumes triggers from geo-spatial and payments data from self and card networks for **fraud detection**

Source: Deloitte analysis

The Way Ahead

It is imperative for all the payments value chain participants who intend to expand and differentiate beyond their core area of operations, to gain an 'early' foothold in this space. They can attain this by planning ahead of time, setting goals and objectives, and, thereafter, by developing capabilities and deploying resources, and seeking complementary partnership opportunities, aligned with the vision of the organization. Further, the companies need to take cognizance of the heightened expectations and clamor around data privacy and data security, especially related to financial information of a customer, to stay ahead of the curve in terms of regulatory and compliance requirements. We live in a data-led economy and the business of data monetization is set to grow with far reaching implications for the industry. How much value an organization is able to generate out of this would define the long-term success or failure of that organization.

Abbreviations

About Banking Frontiers

AEPS	Aadhaar Enabled Payments System
API	Application Programming Interface
ATM	Automated Teller Machine
BBPS	Bharat Bill Payment System
BHIM	Bharat Interface for Money
BC	Business Correspondent
C2B	Consumer-to-business
DIY	Do-it-Yourself
GST	Goods and Services Tax
GOI	Government of India
IAMAI	Internet and Mobile Association of India
IFSC	Indian Financial System Code
IMPS	Immediate Payment Service
IoT	Internet of Things
KYC	Know your Customer
MST	Magnetic secure transmission
MDR	Merchant discount rate
MeitY	The Ministry of Electronics & Information Technology
NPCI	National Payments Corporation of India
NFC	Near-field communication
OTP	One Time Password
O2O	Offline to Online
PoS	Point of Sale
PSP	Payment Service Providers
P2P	Person-to-person
P2M	Person-to-merchant
PPI	Prepaid payments instruments
PoS	Point of sale
QR Code	Quick Response Code
RBI	Reserve Bank of India
SBI	State Bank of India
SMAC	Social, Mobile, Analytics, Cloud
TRAI	Telecom Regulatory Authority of India
TReDS	Trade receivables discounting system
UPI	Unified Payment Interface
USSD	Unstructured Supplementary Service Data
YoY	Year-on-Year

Banking Frontiers is a focused magazine for the Financial Services targeting the Captains of the Industry discussing the business, products, processes and technologies that power the sector. Banking Frontiers has a legacy of over a decade in the area of publishing for this sector and has enrolled several leaders from the industry to share their experiences, thoughts, issues and concerns through this platform for the benefit of the sector as a whole. Starting with India, Banking Frontiers has also covered banks from the entire region including Sri Lanka, Africa, Middle East and many other countries and is strongly expanding into these regions.

Banking Frontiers empowers bankers to share their views with the fraternity through its contents as well as through the various blogs, seminars, roundtables, discussion forums and large conferences and is also available in the e-paper version for the benefit of the digital audience which can be viewed at http://www.magzter.com/IN/glocal-infomart-pvt-ltd/Banking-Frontiers/Business/#

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Acknowledgements

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