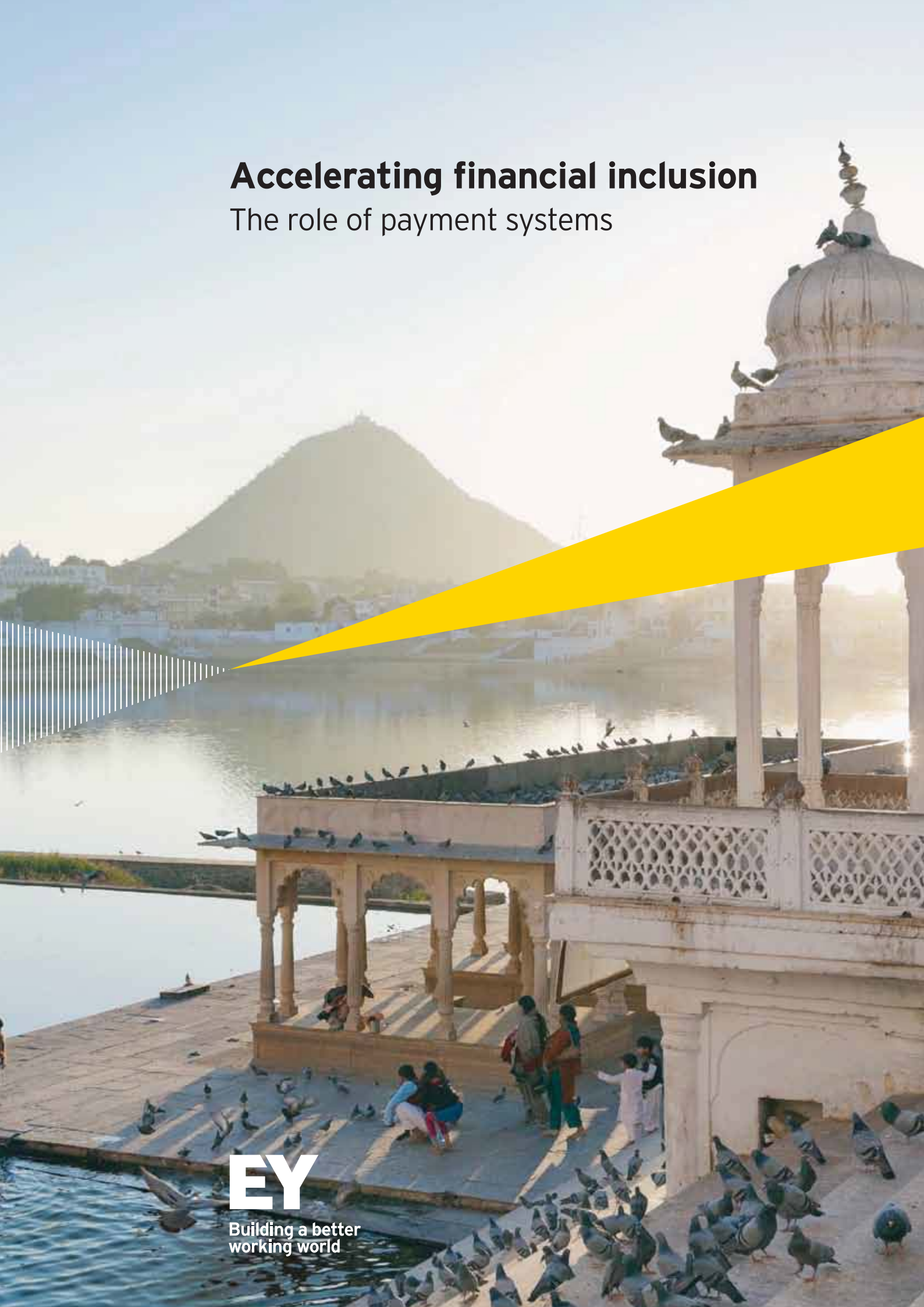
Accelerating financial inclusion

The role of payment systems



EY

Building a better working world

Foreword

A P Hota
Managing Director & CEO
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As we gear up to push for increased financial inclusion, I feel enthused by the wave of innovative entrepreneurial energy being displayed by all participants in the ecosystem.

A lot has already been accomplished. The establishment of a strong payment and settlement framework and associated enabling institutions has enabled a conducive environment for financial inclusion. We have seen the emergence of mobile-based financial services. In addition, the DBT scheme has been operationalized, and there has been a concerted effort to create innovative models to expand the reach of banking in India.

However, we must also acknowledge the widespread challenges that continue to exist. Large numbers of India's unbanked population are yet to be touched by these financial inclusion initiatives. This makes it imperative for us to rethink our assumptions and proactively accelerate our efforts in this area.

Authored by EY, this set of knowledge papers attempts to provide a fresh perspective on what it will take to catalyse explosive growth in electronic payments and accelerate financial inclusion. I am confident that the thoughts expressed in this paper will drive the debate on financial inclusion in the right direction.

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We live in a country of stark contrasts. While India has a well-established and profitable banking system, it also is home to millions who are denied access to basic financial services. We can do more to bridge this gap.

Innovation in payment systems will be critical as we seek to accelerate financial inclusion. We must understand what combination of payments products and services will succeed in the Indian context. We must push the debate further on mobile money and make it a mainstream phenomenon. We must look carefully at how banks can extend across their organizational boundaries to increase reach in a profitable manner. Moreover, we must closely scrutinize the areas that will benefit the most from Government intervention.

If we are to succeed, we will require game-changing innovations that more often than not will occur at the intersection of different industries – Finance, Telecom and Retail. However, the financial sector will have to lead the way. Organizations that address financial inclusion as an opportunity and commit themselves to making it their strategic priority will find themselves well placed to win the battle for the Indian consumer in this century.

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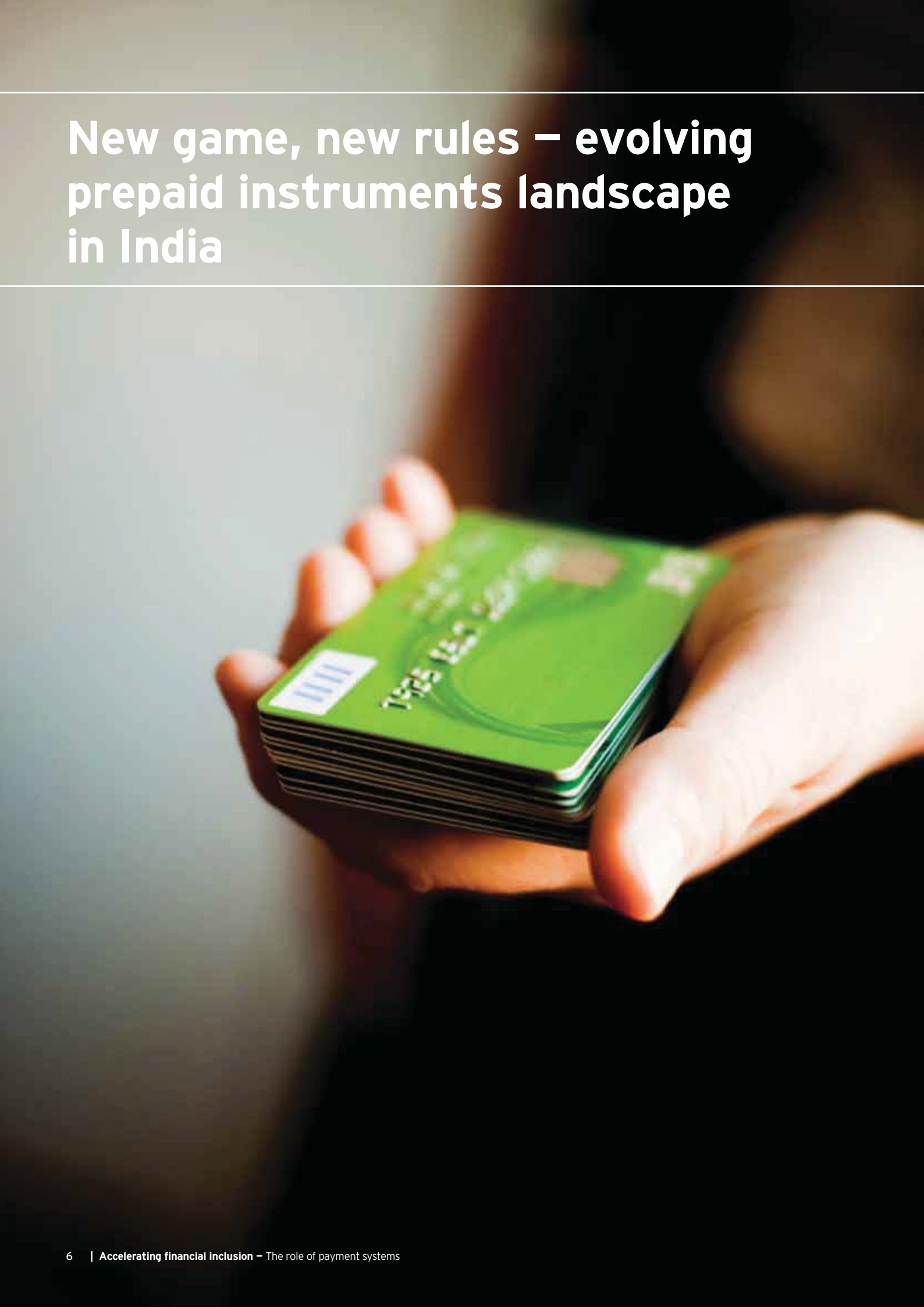
New game, new rules – evolving prepaid instruments landscape in India

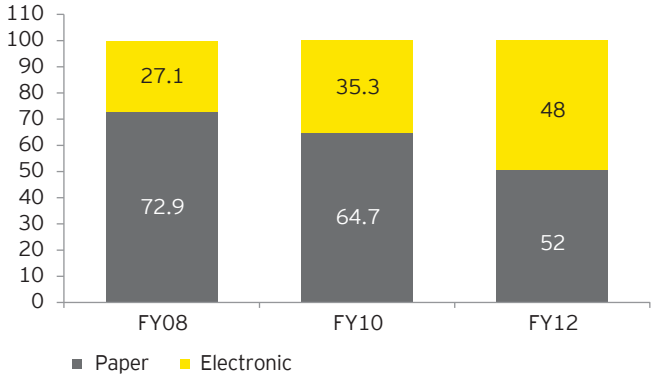


Prepaid Instruments are at their nascent stage in India, but have the potential to play a vital role in the country's struggle to reduce dependence on cash in its economy. Whether it is the financially isolated in India's hinterland or urban teenagers, who are learning to responsibly manage their finances, prepaid products provide that first "taste" of a financial product that becomes the stepping stone to full-fledged participation in the economy. Market growth will emanate from DBT schemes, proliferation of m-wallets, and money transfer and other new applications of the product. Banks, telcos and other players in the eco-system would therefore do well to take heed of this emerging phenomenon.

Retail electronic payments in India

As the Indian economy continues to grow, the total turnover under various payment and settlement systems is increasing as a ratio of GDP reflecting the anticipated 'financial deepening' of the economy. Consistent with this trend, electronic payments in India are growing at a high rate. The adoption of electronic payments increased from 27% in 2008 to 48% in 2012.

Figure 1: Increasing role of electronic payments – Volume

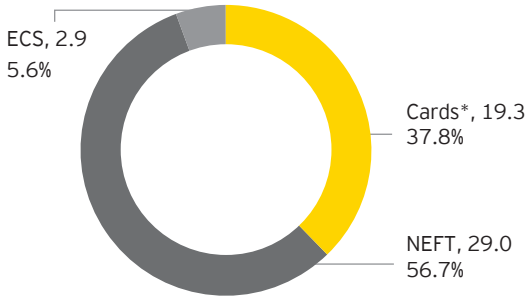


Source: RBI

Electronic Payments are superior to paper-based systems – they are faster, safer and provide much desired traceability. Electronic retail payment options include ECS (that allows for multiple and periodic credit/debit transactions), card based payment options (including credit, debit and prepaid cards) and P2P electronic payments like the National Electronic Funds Transfer (NEFT) and the Inter-Bank Mobile Payment Switch (IMPS).

In 2013, NEFT / RTGS transfers dominated electronic payments followed by card payments. Cards (including credit, debit and prepaid cards) constituted approximately 38% of non RTGS electronic payments.

Figure 2: Distribution of electronic payments - FY13 (INR Trillion)#



- Excludes RTGS, * - Debit, Credit and PPI's
Source: RBI and EY analysis

While the above data looks promising, what it hides is the dominance of cash transactions in the Indian economy. The total value of currency in circulation is 12% of GDP – extremely high when compared to other emerging markets like Brazil and Mexico (figure 3). The number of non-cash transactions per citizen (6 per year) is also very low. The opportunity to accelerate the move to non-cash transactions is thus immense.

Figure 3: Currency in circulation as a % of GDP, 2012

Source: Bank of Internationsl Settlement - Payment statistics, 2012

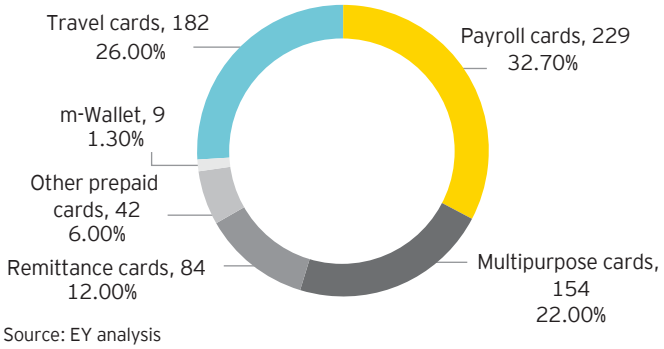
Prepaid Instruments – small but growing rapidly

Prepaid Instruments have the potential to play a vital role in India's battle against cash. Whether it is the financially isolated in India's hinterland or urban teenagers, who are learning to responsibly manage their finances, prepaid products provide that first "taste" of a financial product that becomes the stepping stone to full-fledged participation in the economy.

As per RBI, Prepaid Instruments (PPI's) are defined as payment instruments that facilitate purchase of goods and services against the value stored on such instruments. Applications of PPI instruments today range from popular uses like payroll and travel cards to emerging uses like m-wallets. Within this segment, prepaid cards are the fastest growing product at a staggering CAGR of 50%.

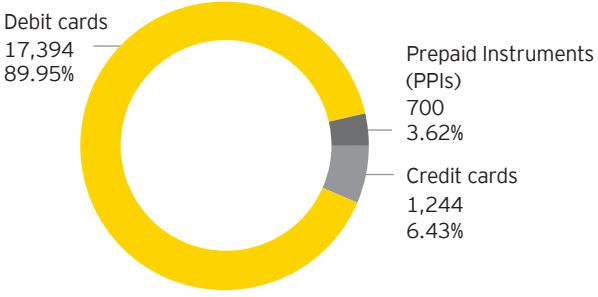
While growth rates are high, PPI's form a very small part of the Indian financial product landscape today. EY estimates that the size of the prepaid market was INR700 billion in 2013 almost all of this was due to prepaid cards. This represented just 3.62% of the Indian card market.

Figure 4: PPI market by type of application – FY13 (INR Bn)



Source: EY analysis

Figure 5: Credit, Debit and Prepaid - FY13 (INR Bn)



Source: RBI and EY analysis

Growth factors

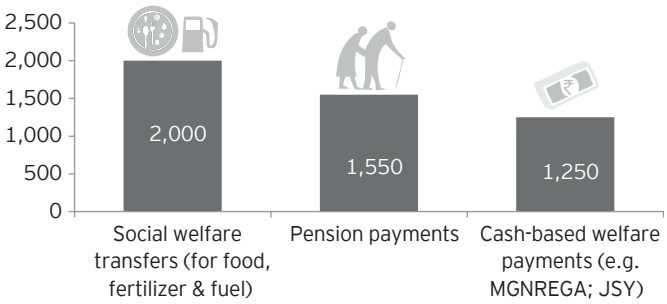
We believe this product could grow dramatically over the next few years fuelled by several exogenous factors that are may positively impact this segment. These factors include a combination of new PPI "use cases," innovative mobile technology platforms, and enabling governmental intervention and regulations.

1. Prepaid instruments for direct benefit transfer

According to EY's estimates, the Government disburses around INR4,800 billion, or roughly 5.2% of India's GDP, as welfare benefits every year.

To deliver more effective social outcomes, it has embarked on an ambitious Direct Benefit Transfer (DBT) initiative, which aims to electronically transfer entitlements and benefits to beneficiaries through Aadhaar- linked accounts. In the next few years, the Government intends to move all G2P welfare disbursements to DBT[1].

Figure 6: Yearly welfare spends by GoI (INR Bn)



Source: Planning commission and EY analysis

Currently, the preferred mode of routing DBT payments is by opening a bank account, with a linked debit card, to enable consumers to access these funds. This model is challenging for several reasons. For banks, deposit accounts are unwieldy to open and costly to operate. Their structure, pricing and operation are also complicated and not easy to explain to the financially uninitiated.

Table 1: Prepaid instruments versus basic savings accounts

Sr. no.	Parameter	Prepaid instruments	Basic savings ('no frills') acounts
1	Spend control	Easy to track and limit all spends as they are capped to loaded amounts. Conceptually it is easy for users with low financial literacy.	Potential to spend all available funds, and in some cases overdraw in the case of facilities provided.
2	Cost of operation	One-time issuance and minimal maintenance costs. These will improve as transaction volumes increase, and thereby, grow scale economies.	For a bank, the cost of opening and maintaining a deposit account is very high. Over and above issuance costs, banks need to incur the cost of maintaining records, and providing check-clearance services, branch banking, alerts, regulatory checks and reporting.
3	Ease of enrolment	Minimal or almost no KYC documents for some PPIs	A fully KYC-compliant introducer is required, making KYC a cumbersome process.
4	Affordability (fees)	Standard fixed and reduced charges (e.g., one-time issuance for loads and specific transaction) Please note that today PPI fees are high due to the nascent stage of the industry (low-scale economy), but this should change.	While the RBI has mandated low/zero fees on basic savings accounts, it goes against the grain for banks that look at accounts as a means of generating incomes from complex, variable and numerous charges.
5	Financial viability (interest earned)	Most PPIs are non-interest earning, but in some hybrid product offerings (e.g. in m-Wallet, telecom players have tied up with banks) offer an interest on balances.	Users earn interest on saving bank account balances.

Source: EY analysis

1 http://planningcommission.nic.in/sectors/index.php?sectors=dbt

The RBI has attempted to address these issues by introducing the concept of no-frills or small accounts that have transaction limits and have reduced KYC processes. However, this seems like forcing an existing solution on a new problem. Banks regularly on-board small accounts on their core deposit account platforms, thereby over-engineering the process and adding unnecessary costs and overheads to it.

A prepaid account and a linked card or mobile wallet is much better suited ("fit for purpose"). This is potentially the first product for India's financially isolated segments. Today, several players in the market have realized the future potential of this model and have already operationalized and created platforms to exploit the prepaid Aadhaar -DBT opportunity.

Globally, there have been several examples where prepaid instruments have been successfully used as part of financial inclusion models.

Table 2: Selected global prepaid case studies

Country	Context	Prepaid "killer" app	Numbers/Impact
Brazil	The social services program Bolsa Familia (providing financial aid to poor Brazilian families) has moved almost 100% of its welfare disbursements from cash to electronic transfers on to debit/prepaid cards.	Prepaid DBT	Bolsa Família (a family grant) uses prepaid cards for disbursement to around 12 million households (amounting to 48 million people). It spans more than 5.5 thousand municipalities. Its total cost is less than 1% of Brazil's GDP, and around 2.5% of total Government expenditure. In terms of number of beneficiaries, Bolsa Familia is today the largest cash transfer program in the developing world[2].
USA	The US has been a salient example of GPR prepaid cards for many years. Starting on 1 March 2013, all federal payments such as Social Security, Supplemental Security Income, veterans' benefits and retirement benefits, will (for the most part) be no longer available in the form of a check, and instead will only be made available electronically to bank accounts or the government-issued prepaid card, the Direct Express Card. FDIC, estimates that there are ~17 million adults in the US, who do not have checking or savings accounts. These individuals would most likely chose the Direct Express Card to receive federal benefit payments.	GPR – general purpose reloadable prepaid cards	In 2011, 10% of households used prepaid debit cards. The proportion of unbanked households that used these cards card climbed from 12.2% in 2009 to 17.8% in 2011. More than one in three prepaid card users (34.7%) were under-banked and 14.5% were unbanked. The Direct Express Card is expected to further expand the pre-paid market in the US[3].
Kenya	Currently, the most developed mobile payment system in the world, M-Pesa allows users with national ID cards or passports to deposit, withdraw and transfer funds easily with a mobile device.	m-Wallet for remittances and payments	As on 13 April 2013, 23 million mobile money subscribers were transacting at ~1 million agents – 31% of Kenya's GDP[4].

Source: EY analysis

2 Brazil's Conditional Cash Transfer Programme Bolsa Família, IBSA International Conference on South-South Cooperation "Innovations in Public Employment Programmes & Sustainable Inclusive Growth" New Delhi, March 2012

3 2011 FDIC National Survey of Unbanked and Underbanked Households, September 2012

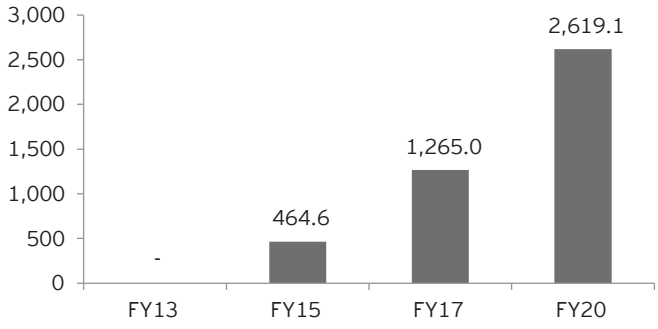
4 GSMA: Mobile Money for the Unbanked

A prepaid account and a linked card or mobile wallet is much better suited ("fit for purpose") product for India's financially isolated segments.

Adoption of prepaid instruments as a means to distribute DBT could help to catalyse the Government's DBT agenda. In a circular dated 5 September 2013, the RBI communicated, "The open system prepaid payment instruments (PPIs) issued by banks is perceived to be a subset of debit cards." This clearly indicates that the regulator considers PPIs an adequate qualifier for financial inclusion.

EY estimates a large growth in the PPI market if prepaid becomes a viable vehicle for the DBT scheme.

Figure 7: PPI - DBT segment (INR Bn)



Source: EY analysis

Key assumption: The Government succeeds in moving a large share of DBT disbursements to PPI's. 80% of Government Benefits move to DBT and 35% of DBT is operationalized via PPI's.

2. Mobile wallets

Several large telecom players have gone live with their m-Wallet services, which allow users to load cash, pay bills, top up recharges and transfer money to other m-Wallet accounts or bank accounts. While there has been much fanfare accompanying the launch of these services, their performance has yet to match the poetry of the concept. Mobile wallets are a very small part of the Indian payment landscape today.

A significant challenge is the lack of a robust mobile payment acceptance ecosystem that addresses merchants' needs (i.e., the last mile in the value chain). Today, multiple mobile payment operators attempt to convert the same merchant with little significant difference between the merchant discount rate (MDR) for mobile payments and cards (especially debit). Consumers' awareness of this service is also limited.

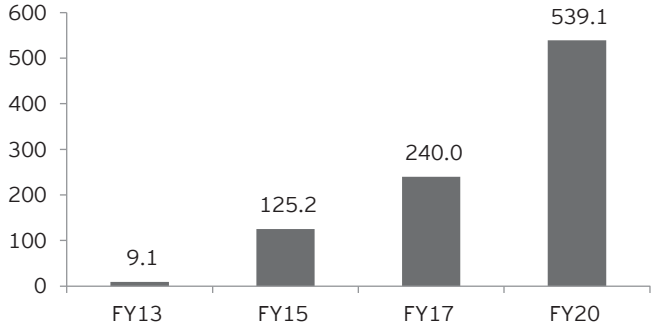
However, several factors are changing the existing dynamic.

- To make prepaid mobile wallets a success, telecom operators are trying to outdo the value proposition currently offered by banks (for credit/debit card usage) at every stage of the merchant-acquiring value chain. They are in the process of developing a well-articulated strategy to drive merchant transactions. Some of these initiatives include shorter on-boarding and turnaround time, quick settlements and more attractive discount rates. This should help to drive volumes and also make pricing more attractive for merchants.

- Banks are threatened by this model. Some feel that if mobile prepaid wallets take off, they will form the nucleus of new forms of payment that will threaten the dominance of banks in the current/savings account market and eventually reduce their revenues from account balances. Banks are therefore attempting to partner with telecom operators to offer advanced product features such as interest on balances and cash out from m-Wallets.
- Interbank Mobile Payment Services (IMPS) from National Payment corporation of India (NPCI) will also change the game in the mobile payment ecosystem. IMPS enables transfer of money from pre-paid cards and mobile wallets to similar wallets and bank accounts (and vice versa) within minutes, and is the only real-time money transfer mechanism that works 24x7 in India.
- Other technologies such as NFC and USSD are expected to enhance customers' mobile payment experience and drive the growth of mobile prepaid instruments. Near Field Communication (NFC) can be used to make contactless payments at retails merchants by merely tapping a mobile phone at the point of sale. Unstructured Supplementary Service Data (USSD) is a secured channel that is available in all mobile phones (even in basic, entry-level and non-smart ones) and can be used for payment applications.
- Lastly, the RBI is constantly monitoring the situation and adapting its regulatory stance to enable the growth of this segment

We believe that over the next decade, mobile wallets could start to have an impact on the role played by cash in the economy.

Figure 8: PPI - m-wallet segment (INR Bn)



Source: EY analysis

Key assumption: m-wallets start to eat into the share unorganized retail. Only 1.5% of unorganized retail moves to m-wallet. Other increases expected in organized retail and P2P transactions

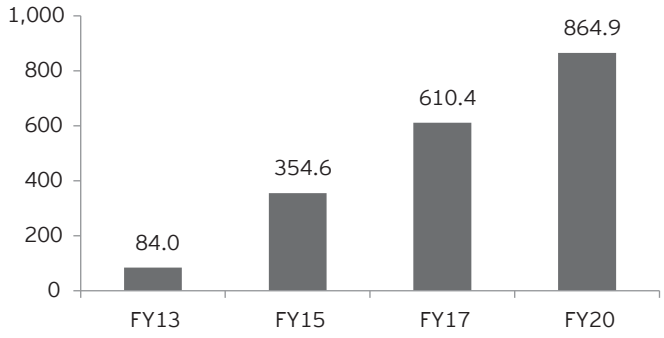
A significant challenge is the lack of a robust mobile payment acceptance ecosystem that addresses merchants' needs (i.e., the last mile in the value chain). Today, multiple mobile payment operators attempt to convert the same merchant with little significant difference between the merchant discount rate (MDR) for mobile payments and cards (especially debit). Consumers' awareness of this service is also limited.

Remittances are another "killer" app for prepaid instruments. Loading a prepaid account via cash or funding it from a bank account to transmit money to remote recipients is a simple and intuitive use of prepaid instruments

3. Prepaid money transfer services

Remittances are another "killer" app for prepaid instruments. Loading a prepaid account via cash or funding it from a bank account to transmit money to remote recipients is a simple and intuitive use of prepaid instruments. There are several prepaid remittance cards in India today. However, we believe the game changer will be the entry of India Post in the nationwide prepaid card-based remittance market. This initiative could help India Post tap the domestic money transfer market, which was valued at a INR 650 billion in FY10, and is estimated to reach INR. 1015 billion by FY14[5]. India Post plans to offer its prepaid cards to speed up its remittance services at around 0.15 million branches across India. These would be run in collaboration with different banks in the western, southern, northern and eastern regions. Once operationalized, this could have a dramatically positive impact on the size of India's prepaid instrument market.

Figure 9: PPI - Remitance segment (INR Bn)



Source: EY analysis

Key assumption: India Post prepaid initiative in India captures 30% of the domestic remittance business

4. Automatic fare and electric toll collection

Automatic Fare Collection (AFC) on rapid mass transit systems: As mass transit systems change the urban landscape, they are expected to aid the growth of PPIs. Cities such as Delhi NCR, Mumbai, Bangalore and Chennai have made huge investments in build-out of metro rail systems. Agencies have been moving away from cash-based fare collection systems to contactless smart card-based ones to reduce costs, increase automation and efficiency in the operations of these modern-day transit systems. In most cases, the cards issued have been closed loop prepaid cards. Recently, transit agencies are beginning to consider accepting contactless (NFC technology) open loop bank prepaid/debit/credit cards (more commonly referred to as combo cards) at points of entry as a replacement for or in addition to current systems. This will eliminate the need for customers to acquire transit-specific cards. Banks (private and public) are moving rapidly to capitalize on this trend and increase their Automatic Fare Collection (AFC) revenues. Bangalore and Delhi have already awarded multiple contracts for issuance of combo cards. However, these are just initial forays into this segment. Hectic activity is expected in the next two years as the Mumbai, Bangalore, Ahmedabad, Chennai, Hyderabad and Jaipur metro projects go live and bus transport authorities rolls out AFC solutions.

Electronic Toll Collection (ETC): Electronic Toll Collection (ETC) has received significant traction with large national highway build-outs being in progress. The establishment of the Indian Highways Management Company Limited (IHMCL) will provide the needed impetus to accelerate implementation of the ETC system on India's national highways. Several banks have foreseen the potential in this segment and are partnering to launch prepaid-based ETC solutions.

Based on these investments, we believe that the ETC and AFC segment could grow to INR120 billion in 2020.

5 Domestic Remittance Market, Analysys mason, June 2011

The economics and business models of prepaid

The business case for PPIs is currently under pressure and most PPI ventures are struggling to make profits. Their top lines usually vary between 2%–3% of the load value, but bottom line margins are as low as 10-15 basis points. Some current revenue streams in prepaid instruments include float income from unused balances, initial issuance fees, breakage-related income from remainder balances after usage, loading charges, and at times, transaction charges on certain merchants. In addition to the quantifiable benefits mentioned above, there can be significant additional benefits from cross-selling alternative products (insurance, micro loans, etc.) that is yet to be explored.

Several factors that should strengthen the business case for prepaid instruments:

- Increasing loads based on the growth factors discussed above are expected to help the ecosystem reach critical volumes, driven by the growth factors described in this report.
- Business models are likely to evolve to ensure that all stakeholders in the value chain (issuers, PPI users, processors and merchants) can make the investments needed to reach sustainable levels.
- Products will evolve beyond the current vanilla single-application ones in the market. Going forward, prepaid products will evolve and become customer-centric (varied product offerings/service levels) vs today's application-centric ones. This segmentation will help to maximize revenues.
- Partnership models will change. Issuers (banks and non-banks) will start evaluating partnerships with large conglomerates to offer co-branded PPI's with added benefits for purchases made of all the products of the conglomerate partner. Issuers can also partner with large retail chains to market and sell advanced GPR cards that offer almost close to bank account functionalities — very much like similar schemes launched recently to target unbanked and low-income communities in the US, where large issuers have tied up with large retailers.
- Other emerging use cases are expected to find traction in the Indian market. For example, teens who are not just looking for a safer alternative to cash, but also want to shop online, can do so by using a reloadable card that are linked to their parents' accounts.

Policy imperatives that can give wings to prepaid instruments

Usage of cash is a deep-rooted habit in India and will continue to dominate the economy in the near future. We have observed a conscious effort being made by the regulator to carve a path to promote non-cash electronic modes of payment and clear roadblocks for prepaid to flourish.

The RBI closely regulates semi-closed and open-loop prepaid instruments and has taken several steps to promote PPIs. Some of these initiatives include a clear definition of various types of prepaid instruments and the process to be followed to obtain a licence to operate semi-close prepaid instruments. The RBI has also been granting prepaid licences and has approved 24 non-banking entities to operate prepaid instruments. In September 2013, it accepted the e-KYC service offered by UIDAI as a valid process for verifying KYCs under the Prevention of Money Laundering (Maintenance of Records) Rules, 2005.

We believe immediate action taken could go a long way in giving a fillip to this segment.

1. **Permitting cash out for non-bank issued semi-closed PPIs:** This may be a reality soon and was articulated by the RBI's Governor, Raghuram Rajan, in his first speech in office. Currently, open loop PPIs have a INR1000 withdrawal limit per day and semi-closed are not permitted any cash withdrawals. These guidelines should be reviewed and revised upwards.
2. **Easing the KYC hurdle:** Acceptance of e-KYC is a much welcomed step. The regulator should consider launching a central KYC registration agency (possibly in collaboration with UIDAI) as was done in the case of the securities market, in which there is a central repository of all KYC-compliant subscribers. Once registered, no KYC documentation is required for any securities market transactions at any authorized dealers. Additionally, the RBI could evaluate accepting KYC-compliant telecom subscribers as fully KYC-compliant prepaid consumers
3. **Evaluating the potential of routing DBT to m-Wallets or non-banking PPIs:** As discussed above, this could be an optimal route for transferring benefits and the Ministry of Finance should evaluate the option of permitting DBT for m-Wallets or non-banking PPIs.
4. **Reviewing international remittance policy:** Currently, regulators are concerned about illegal cross-border remittance flows and mobile remittances. Mobile remittances fall into the regulatory void between financial

and telecom regulations. Anti-money-laundering rules further intensify the regulatory hurdle for mobile money operators by increasing costs and operational burdens. Regulators should review these policies and current transactions limits on remittances on PPIs.

5. **Incentivizing DBT:** Apart from last-mile delivery of cash (often undertaken by business correspondents), there are other costs for agencies, banks, beneficiary banks, payment networks and other enablers in the eco-system. To ensure the success of the DBT mission, it is necessary that everyone in the value chain is motivated to invest in developing, sustaining and building the capacity of the required infrastructure, while ensuring that transactions are efficient, effective, secure and safe. In this regard, the Government should deliberate further and consider the recommendations of the committee, chaired by Nandan Nilekani, in 2011, to pay 3.14% service fees (or any such appropriate amount) to banks/non-banks helping to create the DBT ecosystem.

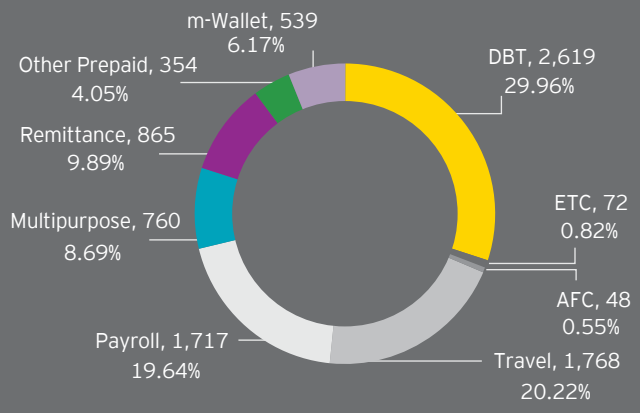
Conclusion[#]

Driven by the factors discussed in this report, PPIs could see dramatically accelerated growth in India from the prepaid card and prepaid mobile wallet segments. We expect prepaid to account for a large share of the non-cash segment. If our assumptions hold true then over INR 8743 billion in payments is likely to be made through PPIs in FY2020. This will be more than 12 times the volumes in FY2013.

While payroll and travel will continue to be large contributors, but relatively new segments such as DBT, remittance, m-Wallet, ETC and AFC are expected to collectively contribute ~47% of the prepaid market in FY20.

The emergence of this product category will have significant implications for Banks, Telcos and other players in the eco-system who would do well to take heed of this emerging phenomenon.

Figure 10: PPI market 2020 – INR 8743 Bn



Source: EY analysis

a. Existing prepaid segments such as payroll, travel, multipurpose and others are expected to continue growing at CAGRs ranging between 20% and 40% till FY20.

b. The Government succeeds in moving 80% of G2P welfare disbursements on to the DBT platform of which only 35% will be made onto PPIs by FY20. G2P welfare disbursements are projected to grow at a CAGR of 10% till FY20.

c. m-Wallet starts eating into market share of unorganized retail, organized retail and P2P payments. EY estimates suggest unorganized retail stood at INR22,200 billion in FY12 and is estimated to reach INR36,000 billion by FY20. m-Wallets will gain a ~1.5% share of the unorganized retail segment in FY20.

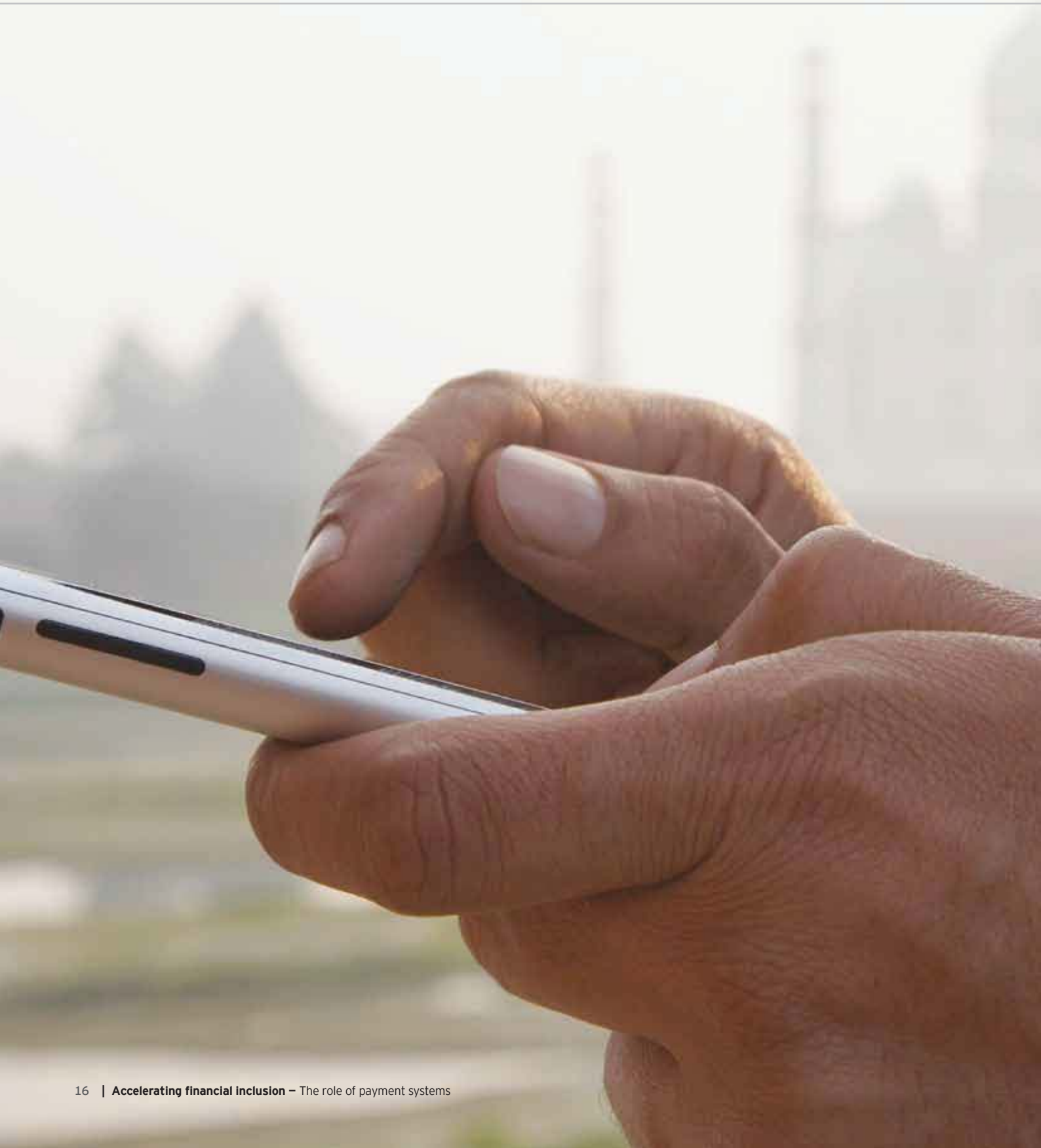
d. The India post prepaid initiative in India captures 30% of the domestic remittance business, which was pegged at INR650 billion in FY10 and is estimated to reach INR1700 billion by FY20.

e. Prepaid volumes from AFC are at least INR48 billion by FY20.

f. Toll collection on National Highways was pegged at INR 92.2 billion in FY13 and is expected to grow at a CAGR of 10%, with 40% of toll collections conducted through ETC by FY20.

g. Debit and credit card volumes on POS and ATMs are expected to continue to grow at a CAGR of 20% and 25%, respectively, till FY20.

Rethinking mobile money – the case for electronic rupees issued by the RBI



Mobile money has the power to democratize banking in India by bringing large numbers of the country's unbanked population into its formal financial system. However, despite the hype, roll out of mobile money and its adoption has been anaemic. The key issue constitutes lack of adequate incentives for stakeholders and their unwillingness to change their long-established practices to make the transformation from physical to mobile money. We strongly support the case for electronic money issued by the RBI, which can catalyze this transformation.

Introduction

The past 10 years have been the "Mobile Decade." Advances in mobile technology have revolutionized almost every facet of society, from information to education, granting vastly increased access to an ever growing population. Now that mobile phones have reached over three billion individual subscribers – more than half the world's population – this democratization is well set to continue.

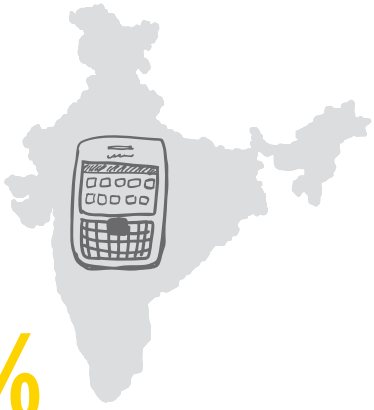
In India, penetration of mobile phones is even higher – almost 83% of India's population is expected to own and use mobile phones by 2014 [1]. This is expected dramatically impact the social evolution being witnessed in India.

However, one unfulfilled promise still remains, even with this massive societal change, which is being underpinned by mobiles. Implementation of mobile money has significantly lagged behind customers' demand for it, industry forecasts and banks/operators' desire to launch such services. Although mobile operators offer mobile money around the world, it is mostly an ancillary offering in the nature of a retention tool rather than a core service offering. The service has seen limited growth, even in high-demand areas where unbanked populations continue to conduct transactions outside normal banking systems.

In India, the urgency to expand mobile money services has never been greater due to recognition of the value of mobile money as a means of financial inclusion. Mobile operators in India have heeded the call and are beginning to invest in the technology, agent networks and development of customer/channel propositions. However, its penetration is low due to several reasons.

Figure 1 describes a conceptual model of the current cash economy. The Reserve Bank of India (RBI) issues legal tender, i.e., it prints currency notes and mints coins. These are transported across the country (via trains, planes and automobiles) to banks, which then distribute this to consumers and businesses, who exchange cash for services or store it in their physical wallets.

The system works because there is only one issuer with authority – the RBI. Banks are involved in what the public perceives as their core function – creation and distribution of money. However, the system suffers due to high costs because of its reliance on physical paper and metal. Another issue is lack of transparency, which leads to pilferage. This is a problem the Government of India is trying to resolve with its DBT scheme. Finally, there is a huge issue of illegal cash transactions that take place outside the formal economy in the country's parallel or "black" economy, which is outside the purview of regulations and taxation.



83%

of the population, expected to own and use mobile phones by 2014

1 Report by TRAI on Spectrum Management, May 2010

Figure 1: How cash flows in todays economy

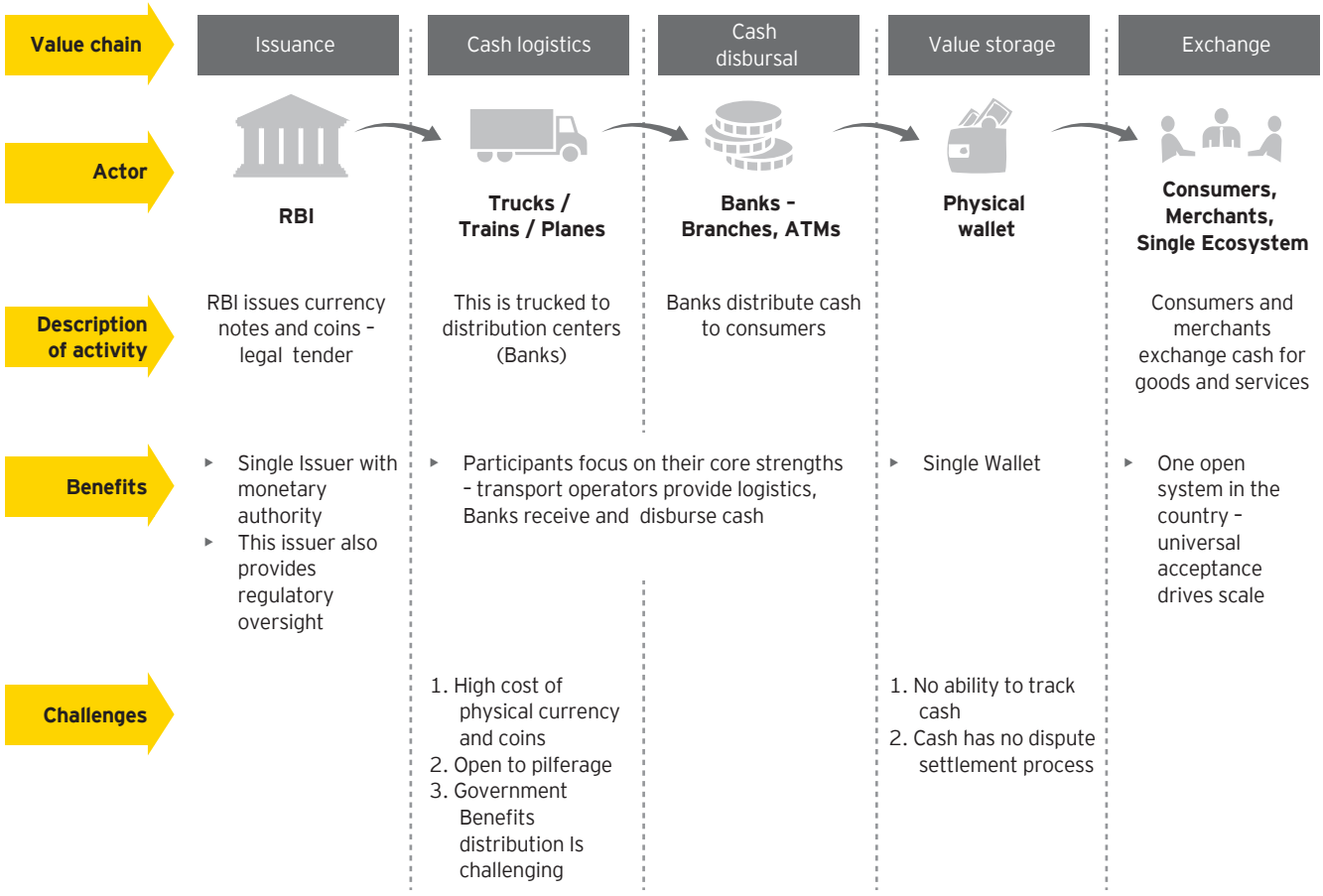
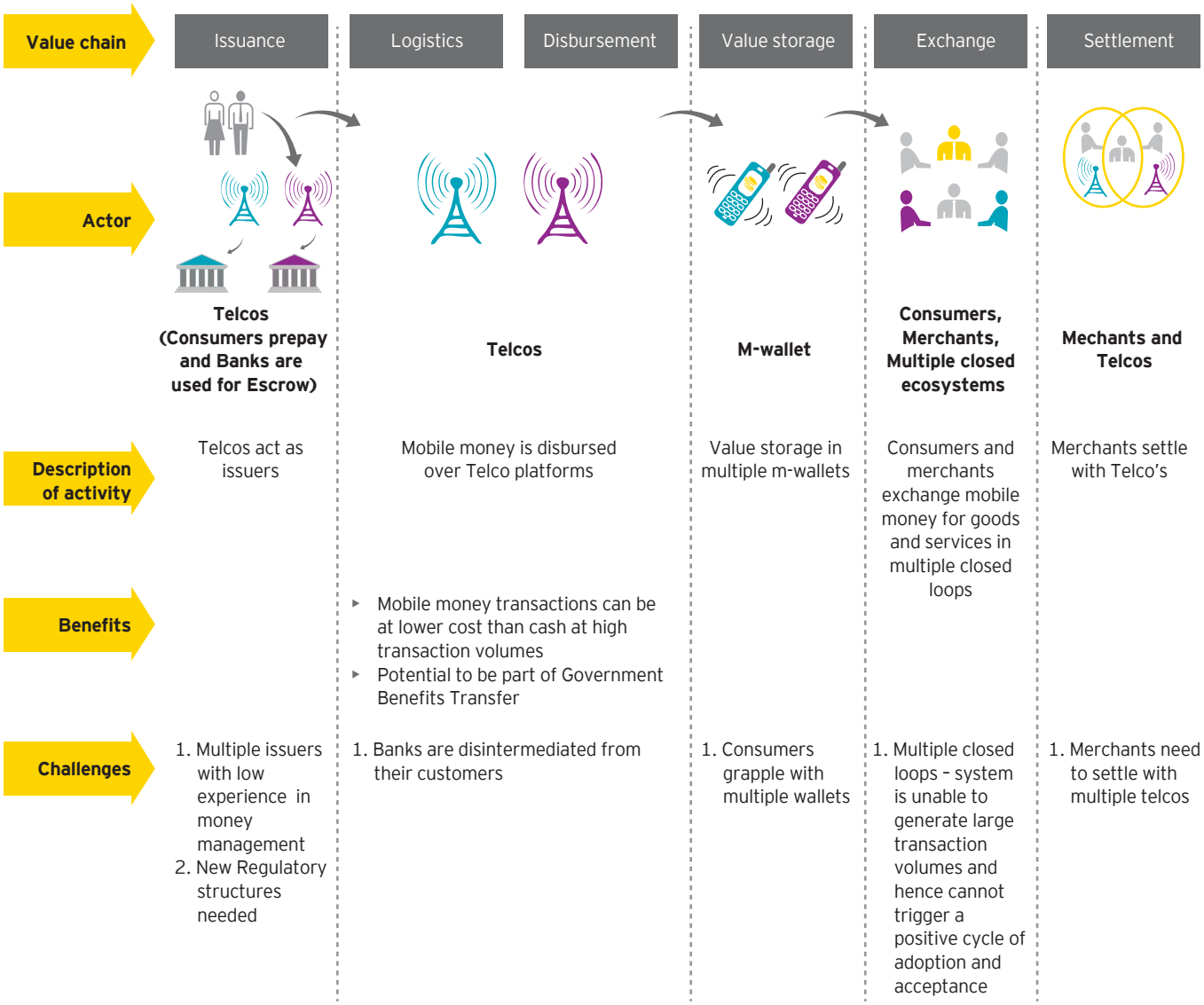


Figure 2 describes the current mobile money ecosystem in India, with telcos "creating" money in exchange for legal tender. This money is then provided by the telcos in mobile wallets and can be used to conduct transactions in closed or semi-closed ecosystems. Merchants need to learn to accept this new money and also figure out a way to exchange it for legal tender.

It is hardly surprising that this system has been sluggish in its growth. Telcos that are issuers in the system do not have the skills to manage money. Banks, which do have these skills, are tucked away in the background of this system as they are threatened, and at best, adopt a wait and watch attitude. The entire scheme falls outside the ambit of the current regulatory system. Therefore, the RBI has to impose tighter KYC norms, transaction limits, etc. The consumer has to grapple with multiple wallets and a fragmented acceptance ecosystem and merchants have to tie up with multiple telcos for settlement.

Figure 2: The mobile money value chain



Key challenges with mobile money today

1) The adoption challenge

Weaning the Indian consumer away from cash is not an easy task. Cash provides physical security to the financially isolated and provides privacy to those who for good reasons (or otherwise) wish to remain outside the possible scrutiny of the "formal" banking system. Consumers' awareness levels of mobile money offerings are low and there is an inherent distrust due to frequently changing regulations. It is clearly evident that stiff transaction pricing, resulting from low transaction volumes, is the cause for consumers being reluctant to adopt mobile money. From a merchant's perspective, there is currently little benefit in signing on – merchant discount rates are high and they have to tie up with multiple telcos, which increases the complexity of their settlement processes.

2) The regulatory challenge

Mobile money creates a new kind of regulatory challenge, since it straddles two large but distinct areas of regulation - financial services and telecommunications. There are numerous challenges that persist in this area today. There is lack of co-ordination and alignment between the regulators of these two sectors, which leads to a regulatory vacuum at the intersection of these two large industries. At the same time, banking regulations in India do not necessarily address all aspects of the mobile money ecosystem.

- Currently, mobile money transactions have security authentication (OTP)-related requirements that make the customer experience cumbersome.
- Current banking regulations tend to be conservative about permitting "cash-out" at a telco's retailer outlet.
- The RBI is anxious to contain the systemic risk posed by loosely-regulated mobile money ecosystems and their possible use for laundering money, finance terrorism or disguise unaccounted currency. This cautiousness on the part of the regulator seems valid, especially when issues of KYC compliance and lack of strong governance among the telco - retailer base have surfaced with regularity. The RBI feels that there is a need to move cautiously on opening up the mobile money business and is taking a calibrated approach to relaxing some of its stringent norms, e.g., KYC, limits on cash-out, etc.

While it may be necessary to calibrate the evolution of this form of money, these regulations are having a negative impact on the growth of the mobile money ecosystem, and are forcing many non-banking mobile payment companies to change their business models.

Only a few telcos have been successful in obtaining a mobile prepaid wallet license from the RBI, and even in such instances, users of these services are only able to withdraw money only if their accounts are linked with the bank.

3) The interoperability challenge

The current model of telcos issuing mobile money has led to a series of closed-systems being created within India. In order to be successful, mobile money needs vast transaction volumes delivered through scale of service. The creation of multiple closed-systems has carved up the market into small segments that simply cannot produce the kind of transaction volume needed to support the investment required from individual players. Customers also view the value of the service as limited, since they can only access these services along with other customers on a single network, unlike in the case of traditional currency, which is ubiquitous. Furthermore, in contrast to successful mobile money models such as Kenya's, the market structure in India is fragmented with no telecom player commanding a market share that influences the outcomes of systems.

Mobile money creates a new kind of regulatory challenge, since it straddles two large but distinct areas of regulation - financial services and telecommunications

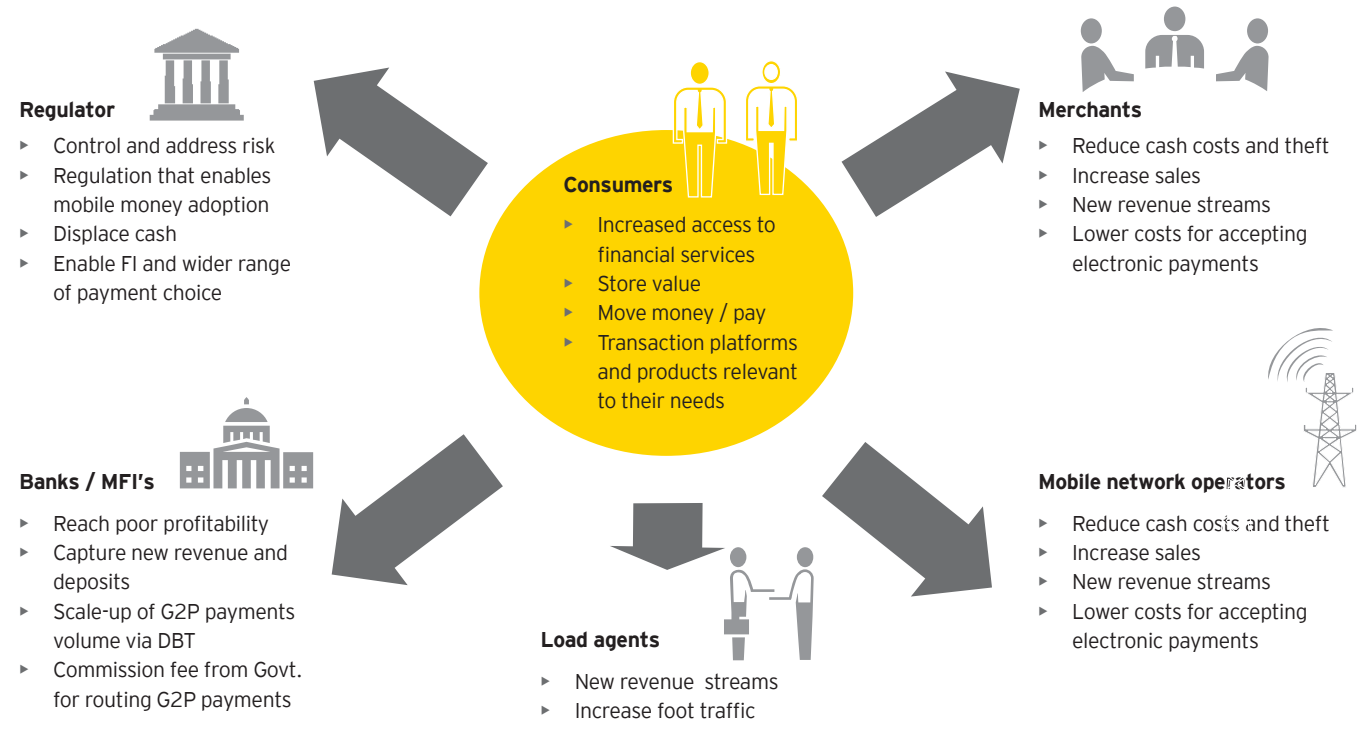
Needs of participants in the ecosystem

Telcos

Mobile operators want a solution that provides a sustainable answer to major issues hampering the objectives of current mobile money services, as mentioned above. These include:

- Creating a new revenue stream: Transactions conducted by increased use of mobile money services should bring in a new revenue stream from existing customers.
- Keeping applicability of incremental regulations at the minimum: As mentioned above, tighter regulations constitute a major strategic risk. Operators want to mitigate the risk of being subject to onerous new regulations and increasing business costs.
- Developing a solution to building customer loyalty: Successful mobile money services should lead to enhanced stickiness and increased customer retention.
- Giving higher rewards for reduced risks: Operators are currently taking on high risks through underwriting and regulatory obligations. These are only increased with the expansion of the mobile money service. Operators do not want to take more risks as the service grows.

Figure 3: The mobile money stakeholder map and their interests



Source: EY analysis

The challenge is whether we can take that vital transformative step that will lead to a paradigm shift in the current narrative and spur innovation without necessarily disturbing current market structures.

Banks

Banks want mobile money solutions that do not result in significant dilution of their ownership of their financial services businesses and their relationship with their customers. At the same time, they are looking at fulfilment of their following interests:

- Establishing a presence in the large unbanked customer segment and new unbanked areas
- Leveraging mobile money solutions to reduce the cost of providing banking services to the unbanked
- Meeting regulatory and government directives on expanding financial inclusion
- Capturing additional revenue by building and retaining deposits
- Earning income from fees for handling the end-to-end G2P payment process

Reserve Bank of India

As the RBI looks for ways to enable mobile money in the Indian economy, it is mindful of its mandate. This includes:

- Basing its regulatory and policy approach with respect to mobile money in accordance with sound principles of risk assessment and containment, and an appropriate risk mitigation framework
- Taking a cautious approach to regulation, but at the same time keeping it dynamic, so as not to hinder adoption and use of mobile money
- Minimally disrupting existing e-money ecosystem so as not to devalue existing investments
- Enabling increased levels of financial participation and inclusion for people
- Creating a level playing field so that excessive power (due to the current market structure) cannot be wielded by a small number of players

Consumers

Consumers want an enhanced experience and very low transaction costs. They are looking for the following:

- Increased access, combined with affordability, ease and convenience of payment, remittance and other financial services
- Assurance on preservation of the value of the mobile money they hold
- Platforms and products that are relevant in their context and to their needs (often have low awareness of finance and mobile devices, are illiterate, have low levels of adaptability, conduct small-value transactions, etc.)
- Support during the adoption phase in terms of on-boarding services, dispute management, redressal of grievances and easy-to-reach product-related support

Toward the electronic rupee

As the analysis above reveals, the needs of stakeholders are varied and often tug them in different directions. The system is therefore challenged and is unable to scale. If India remains on its current trajectory of incremental progress with adoption of mobile money, it could take decades for it to make a difference in the lives of common people.

The challenge is whether we can take that vital transformative step that will lead to a paradigm shift in the current narrative and spur innovation without necessarily disturbing current market structures.

One such step would be creation of electronic rupees. These would be issued by the RBI, just as it currently issues currency notes and coins. They would then be inserted into disparate mobile and online money systems. Furthermore, since they will be issued by the RBI, they will be legal tender and directly address core adoption and acceptance concerns. Such a solution would immediately address lack of regulations, since it would bring this electronic currency under India's currency

laws and be governed in the same manner as paper currency. In other words, it would be a light regulation with a set of known and measurable risks for banks and telecom operators. Finally, usage of a common standard would directly address concerns relating to interoperability.

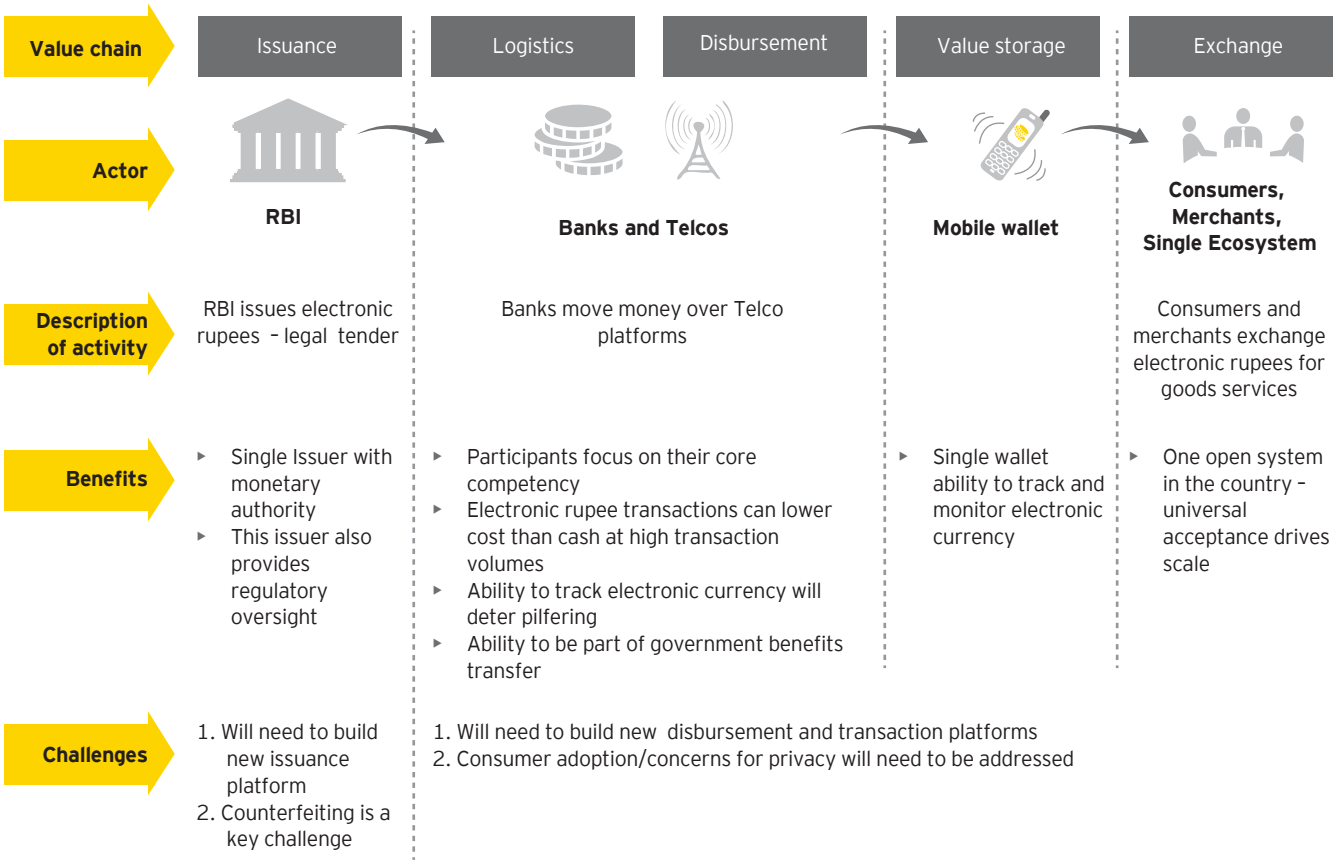
This electronic currency could be secured, monitored and managed by the RBI in the same way as paper currency, and enjoy all the advantages of a digital medium that can be more effectively governed and monitored. This electronic currency will not disintermediate the banks- they will process and distribute the electronic currency in the same manner as they do with traditional currency.

How this will work

Figure 4 proposes a solution for implementation of the electronic rupee. Here, the RBI will be back to its role as the issuer of money, issuing electronic rupees as legal tender in addition to cash and coins. Rather than using physical transport to distribute physical currency, telco networks would be used to "move" money across the ecosystem. Banks would play their traditional roles as distributors of rupees.

Telcos would need to build a platform that facilitates movement of this money and ensure that consumers are reassured by the fact that they are dealing in legal tender. Merchants do not need multiple settlement relationships, and since they deal in legal tender, they do not need to re-convert their electronic rupees.

Figure 4: Towards the electronic rupee



How would the electronic rupee help?

1. By addressing regulatory concerns

A major hurdle for launching mobile money launches has been the ambiguity and uncertainty relating to regulations. Electronic currency removes the ambiguity of regulations, since it is subject to existing currency regulations that are well documented and already enshrined by the RBI. Electronic currency would eliminate the need for any incremental regulations, which are currently being mooted for existing mobile money offerings.

2. By building interoperability

Mobile money services in India are currently characterized by closed-system platforms, which limit consumers to transacting on a single network and lead consumers to view the value the proposition as inadequate. In the proposed scenario, there would be interoperability because of the legal tender status of national currency. Vendors and institutions would have to accept it as payment or settlement of debt. The question of interoperability would be eliminated, since electronic currency would be fully interoperable as a unit of account, means of payment and a store of value — the very definition of currency.

3. By enabling monetary control and visibility

In almost all economies, the task of creating currency is solely the responsibility of their central banks. Alternative money systems impact their ability to control monetary policies. Creation of a single standard electronic currency would offer them a means to monitor and mitigate this risk.

4. By building large electronic currency transaction volumes

A successful mobile money service needs a large volume of transactions to be truly successful. The goal and business case for replacing expensive coinage has been a long-standing one. At the same time, mobile money services have had very limited success in creating significant transaction volumes due to fragmented systems, consumers' mistrust and unwieldy operations. Creation of electronic currency resolves this problem.

We have highlighted above the impact of electronic currency on interoperability, which once resolved, will drive the network effect of mobile money systems to higher levels and increase transactions exponentially. Given that electronic currency would be backed by the full sanction and credit of the RBI, as with any national currency, consumers would have greater trust in using this service. The ability to convert electronic currency to more traditional forms through the RBI will also give consumers a flexibility that is not offered by private currency systems.

What challenges would still remain?

Counterfeiting: An obvious challenge with the launch of the electronic rupee would be preventing fraudsters from creating fake money. While the technology needed to counter counterfeiting has matured over centuries for cash and coins, it will need to be strengthened in the area of digital currency. The question is who will carry the risk of fraud?

Consumers' behavior: Today, individuals enjoy the privacy of the physical currency they have and this is a much valued by the Indian consumer. The electronic rupee removes or at least reduces this privacy. This realization would be one of the greatest deterrents in consumers adopting it. Will consumers adopt it in large numbers? Can the Government make this a reality through schemes such as DBT?

Issuance and on-boarding: The electronic rupee application wallet or chip that will store the electronic rupee would need to be installed on every mobile phone in the country. This is a challenging task, but not very different in magnitude from issuance of Aadhaar cards to every Indian. Another question relating to KYC — How will an electronic wallet be linked to an individual's identity?

Acceptance infrastructure: As in the case of merchant on-boarding in POS (acceptance of cards or m-wallets), the conundrum of who will come first, the chicken (consumers) or the egg (merchants) will need to be addressed. There would need to be a strong business case for propagation of the electronic rupee and building this case will not be easy. The question is — Can the RBI make a business case, taking into account savings from printing physical currency and the benefits of financial inclusion?

Scalable transaction and settlement platforms: The platform that will be used to create, distribute and transact electronic rupees will be one of extreme systemic importance. It will need to be able to handle hundreds of billions of transactions per day. Apart from enabling such transactions, the system would also need to track, monitor and record each transaction to facilitate resolution of disputes/failed transactions. This will need to be conducted by a body other than the RBI, but sponsored by it. Can this be done? Finally, the system wouild need to be totally secure. Who will design, create, build and ensure efficient functioning of such a platform?

Conclusion

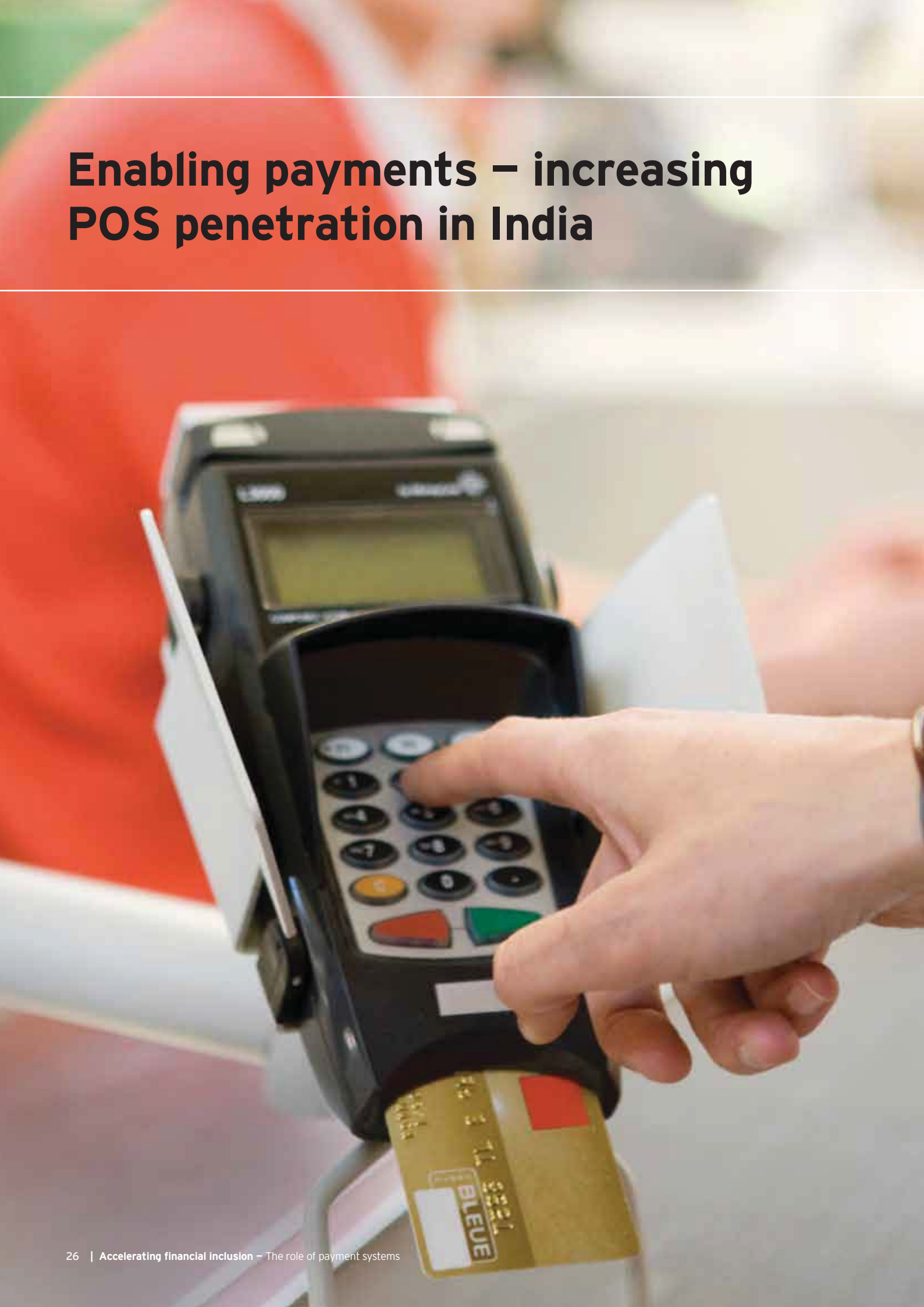
Mobile money offers a unique opportunity to democratize banking in India by bringing large numbers of its unbanked population into the existing system.

However, existing programs to propagate mobile money have not worked so far. Current approaches are incremental, and most telcos and banks have adopted the "wait and see" mode. As discussed above, the key issue is one of roles and incentives – across the RBI, banks and telcos.

Can we be ambitious enough and envision a single transformative step that causes a paradigm shift in the current narrative and spurs innovation? This is what the proposed move toward the electronic rupee seeks to do. It brings current issues into focus and offers us the chance to rethink and realign key institutional factors for success, with minimal disruption to the existing system.

Every big societal change has had its "nay-sayers." Yes, we will have to face serious challenges as we move toward the electronic rupee. We will only be able to address these if the terms of debate are clarified and the best minds in the country work toward seeking and finding the right solutions. The time to act is now.

Enabling payments – increasing POS penetration in India



POS infrastructure in India is woefully low by global standards. Barely 10% of the total physical merchant locations of more than 10 million retail touch points[1] in India have POS acceptance infrastructure in place. As financial inclusion gathers momentum, there is an urgent need to enhance acceptance infrastructure in these locations. While technology will play an important role with the implementation of new POS capabilities, there is also a need to look at other relevant interventions around the world.

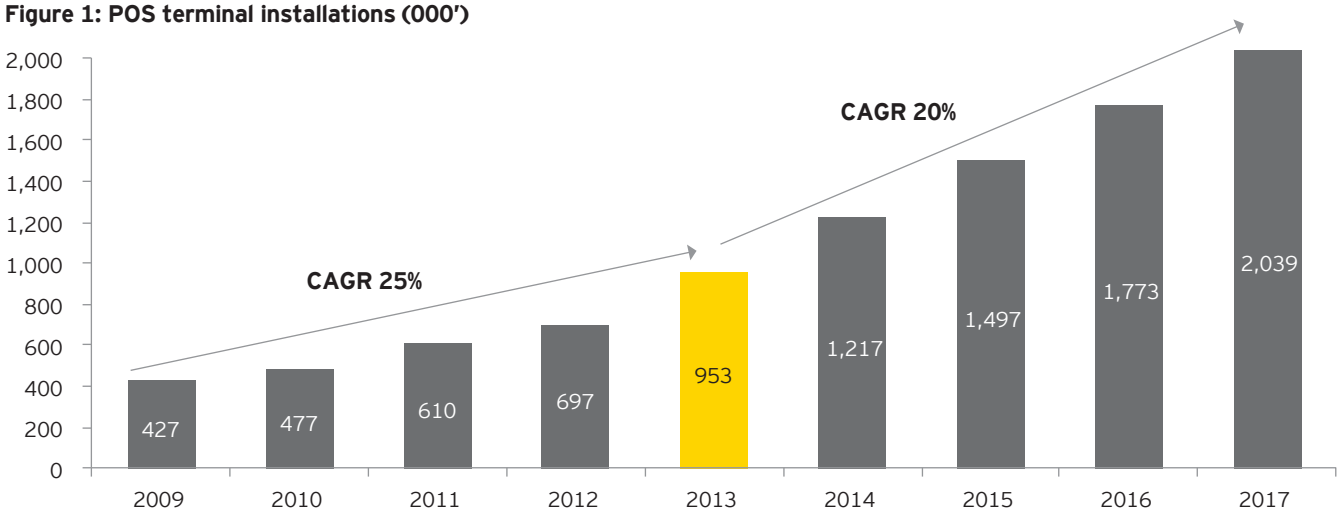
POS landscape in India: uneven distribution in top 15 locations

According to the RBI's payment system vision (2012–2015), it is committed to expand the reach of electronic payment systems to the majority of people in the country. It has also set up the National Payments Corporation of India to facilitate this initiative.

POS terminal infrastructure has grown at a CAGR of 25% in the last four to five years from 2009–2013. The current POS terminal base includes over a million POS terminals. Their number is expected to grow at a CAGR of 20% to around 2–2.5 million POS terminals in the country by 2017.

However, despite several efforts made by banks and regulators, India still has one of the lowest number of POS terminals (per million people) in the world. According to the BIS 2012 payment report, penetration of POS terminals is only 693 per million of India's population, compared to similar emerging countries such as Brazil, which has 32,995 terminals per million people, and China and Russia, each of which has around 4000 terminals per million people.

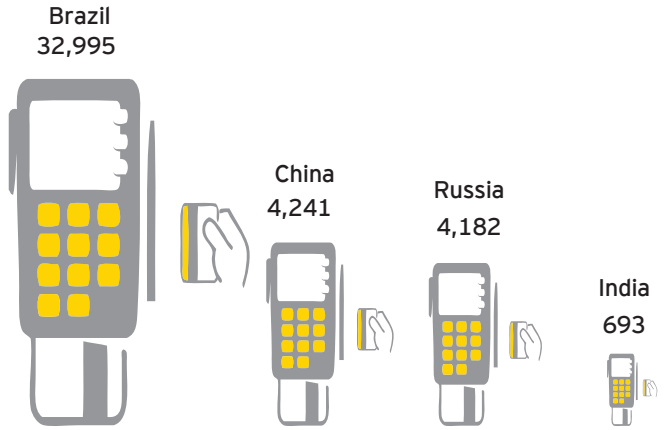
Figure 1: POS terminal installations (000')



Source: EY analysis, RBI

1 RBI Payment Systems in India, Vision 2012-15

Figure 2: No. of POS terminals/millions of population across BRIC countries, year 2012



Source: Bank of International Settlements (BIS)

Moreover, the current POS infrastructure in India penetrates around 10% of the total number of physical merchant locations in the country – 1.1 million of the more than 10 million retail touch- points in India have in place POS acceptance infrastructure. Currently, POS acceptance infrastructure is spread over 1500 cities, including tier II and tier III ones. However, more than 70% of POS terminals are installed in the top 15 Indian cities, which contribute over 75% of total transaction volumes at POS.

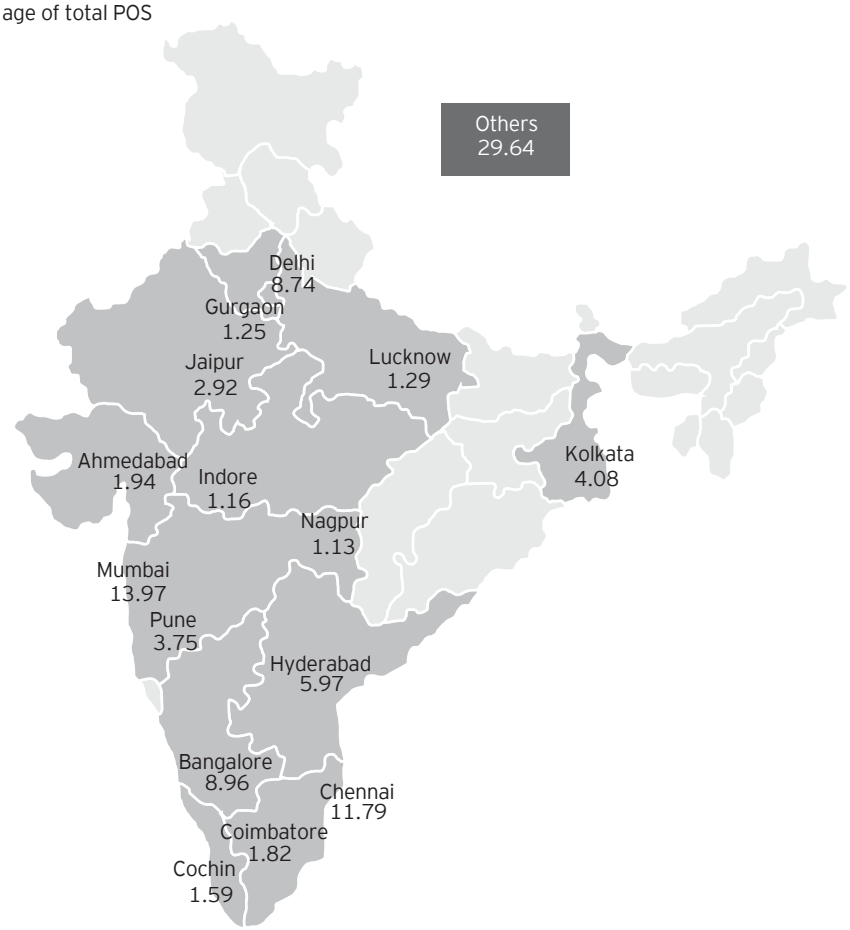
There has also been an increased thrust by banks and the Government in tier II and III cities to enhance issuance of cards. As financial inclusion gathers momentum, several steps have been taken, including creation of regional rural banks, launch of the Kisan credit card, introduction of No-frills bank accounts and linked debit cards. This will however require enhanced acceptance infrastructure in these locations.

The information mentioned above clearly indicates that there is a significant need to penetrate tier II and III cities, not only in terms of POS infrastructure, but also to increase usage and drive transactions at these locations.

There are significant opportunities to enhance acceptance infrastructure in India and for it to penetrate untapped rural and semi-urban areas. There is a need to focus on a strong policy framework, the right incentives, viable business models, and shared services and infrastructure.

Figure 3: POS terminal penetration across major 15 cities, year 2012

% age of total POS



Source: EY research and analysis

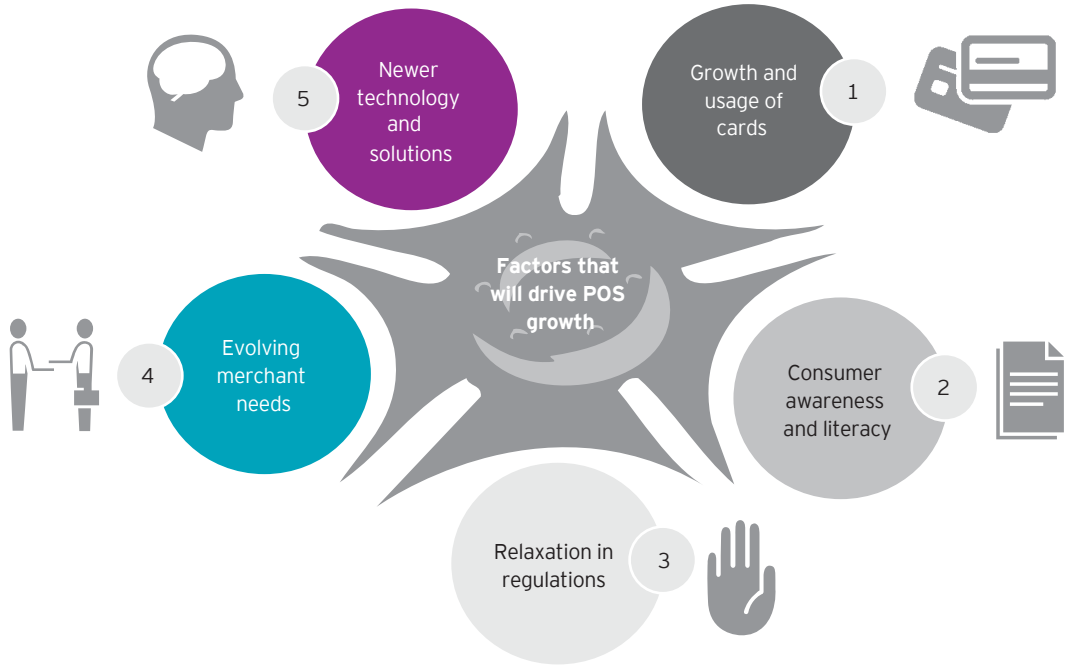
India's POS landscape is characterised by a large skew in favour of urban locations-more than 70% of the POS terminals are installed in the top 15 cities contributing to over 75% of the total volumes at POS. Moreover, only 1.1 million of the more than 10 million retail touch points have POS installed for electronic payments acceptance.

Focusing on key trends for identification of measures and building strong POS infrastructure in India

It is critical to assess the key POS-related trends and their impact on enhancement of the acceptance framework. EY has identified the key trends/factors that will drive growth of POS acceptance across India. This is detailed below:

1. **Growth and use of cards:** Issuance and usage of debit cards has been increasing at the rate of over 20% in the past four to five years. Credit cards declined in 2009–10 due to private banks withdrawing them because of the global financial crisis. They have however seen a marginal increase in the last two to three years. EY's view is that issuance of debit cards in the country is expected to grow at a CAGR of 18 % over the next five years. This should also increase usage of debit cards on ATM and POS channels. The number of credit cards is also expected to increase in the future at a rate of 12% due to private banks focusing on issuing new credit cards and driving their usage. This will necessitate banks to aggressively undertake deployment of POS, which is expected to result in an increase in its penetration and reach in tier II and III locations.

Figure 4: Building a strong Point of Sale (POS) infrastructure in India



Source: EY analysis

2. **Consumer awareness and literacy:** Consumers have traditionally used only paper (cheques/ DD) and cash as their key payment instruments in the past. However, their mind-set has changed and they are slowly becoming aware of various types of electronic payment instruments and their usage. With banks and the Government's initiatives, it has now become essential for the public to have access to "easy to understand" information on various payment and settlement systems, and options available to them for conducting payment-related transactions in a safe, secure and efficient manner. It is expected that consumers will increase their usage of electronic-based payment instruments due to multiple awareness initiatives implemented by banks and the regulator. This is also expected to have an impact on POS numbers.

3. **Relaxation of regulations:** In the past, the regulator has undertaken various initiatives to promote usage of electronic payment instruments that are focused on POS infrastructure, e.g., cash at POS, dynamic currency conversion, etc. These initiatives have helped to increase usage of these POS terminals. Additionally, measures have been taken to enhance security at these POS terminals. This is expected to reduce risk of fraud and shift liability to acquirers in the event of non-adherence. Apart from this, initiatives have been planned to allow setting up of White Label POS terminals. This will enable non-banking entities to set up and expand POS acceptance infrastructure. It is expected that initiatives such as White Label POS may lead to more terminals, and consequently, increased transactions at and usage of POS terminals in the future.

4. **Evolving merchant needs:** The requirements of merchants are increasing across various segments. Moreover, there are new merchant categories and segments, which are evolving and are expected to have very specific and different needs with respect to POS infrastructure. Urban merchants need easy access to quick, secure, reliable and easy to use payment-acceptance tools. They require acceptance infrastructure that can provide a quick and reliable purchase experience for customers. One of the emerging areas in this field is Mobile POS (MPOS), wherein the MPOS technology will help large merchants "bust the line" and also provide opportunities to new categories of merchants in segments including travel and transit, home delivery segment, etc. Rural merchants need easy to use and effective acceptance methods that will suit their operating environments.

5. **New technologies and solutions:** Technology will play a key role in shaping the nature and scale of POS investments.

Different merchant categories have varying needs with respect to the POS devices- large urban retailers seek technologies like Mobile POS (Mpos) which help them in "line-busting" whereas the smaller merchants seek a cheap and easy-to-use solution like a card-reader attached to a phone. Rural merchants on the other hand are likely to adopt biometric POS, which enables them to accept Aadhaar enabled debit cards that are likely be issued in large numbers for financial inclusion.

Table 1: Emerging technologies at Point of Sale

Technology	Description	Driving factors
MPOS	▶ The MPOS solution comprises card reader dongles and client applications that run on handheld devices such as IPod/IPad/Android/ Windows mobile devices. ▶ It acts as a merchant point-of-sale terminal.	▶ This solution may be preferred by merchants for cash- on – delivery. ▶ It also provides low-cost opportunities to new categories of merchants, e.g., travel and transit, etc. ▶ Going forward, as performance parameters improve, MPOS may replace traditional POS devices.
Micro ATMs	▶ Micro ATMs allow customers to conduct basic financial transactions. ▶ Any kind of authentication (cards/ biometric) can be used at Micro ATMS for users to conduct transactions.	▶ Currently, Micro ATMs are only allowed for cash-in and cash-out transactions. ▶ A regulatory focus will encourage the use of Micro ATMs at BC outlets. ▶ UIDAI 's norms for standardization of hardware is expected to drive interoperability further by using this channel.
NFC at POS	▶ Near Field Communication is a short-range high-frequency wireless communication technology that enables exchange of data between NFC- enabled devices over a distance of around 10 cm. ▶ NFC has been successful for micro payments worldwide. ▶ NFC allows a mobile device to be used as a merchant point-of-sale terminal.	▶ A thrust on proximity payments at high transacting micro-payment locations is expected to drive NFC in the future. ▶ NFC at POS can be adopted at transit locations such as metros and closed loop prepaid instruments. ▶ NFC could dramatically increase customers' convenience at such locations with requisite infrastructure.
Green Channel Banking	▶ A POS device is used at banking outlets to enable customers to conduct banking transactions using their debit cards. ▶ Several Indian banks have begun implementing such devices to increase their customers' convenience.	▶ Improvement in customers' convenience and reduced waiting time at bank branches are expected to drive Green Channel Banking. ▶ Further regulatory support for this channel will encourage banks to use it extensively.
Biometric POS	▶ Biometric-enabled POS will enable customers to conduct transactions using their fingerprints as authentication and identity proof.	▶ Biometrics are user-friendly, especially in context of rural people, as compared to other customer-authentication methods such as PIN, OTP and Chip. ▶ Biometrics, being unique, can lead to a secure transaction environment for the consumer.

Source: EY analysis

The way forward: Increasing POS penetration

In the current environment, it is a conservative expectation that POS terminals will grow at a CAGR of ~20% in the next five years, and thereby double the total POS terminals to ~2.1 million and the number of POS/million people ~1550, which is far lower than the current figures of comparable global players.

On the upside, these numbers can be revised upwards if the following initiatives are undertaken:

Growing consumer awareness, increased issuance of cards, widespread adoption of innovative technology – specifically MPOS and biometric POS in semi-urban rural areas – the Government's incentives and improved acceptance of POS infrastructure should lead to an increase in deployment and usage of POS infrastructure in the future. If the initiatives / action steps mentioned below are implemented, we could see close to ~ 3.5 million POS (three-and-a-half times the current number) in the next five years.

Table 2: Initiatives required to increase POS penetration

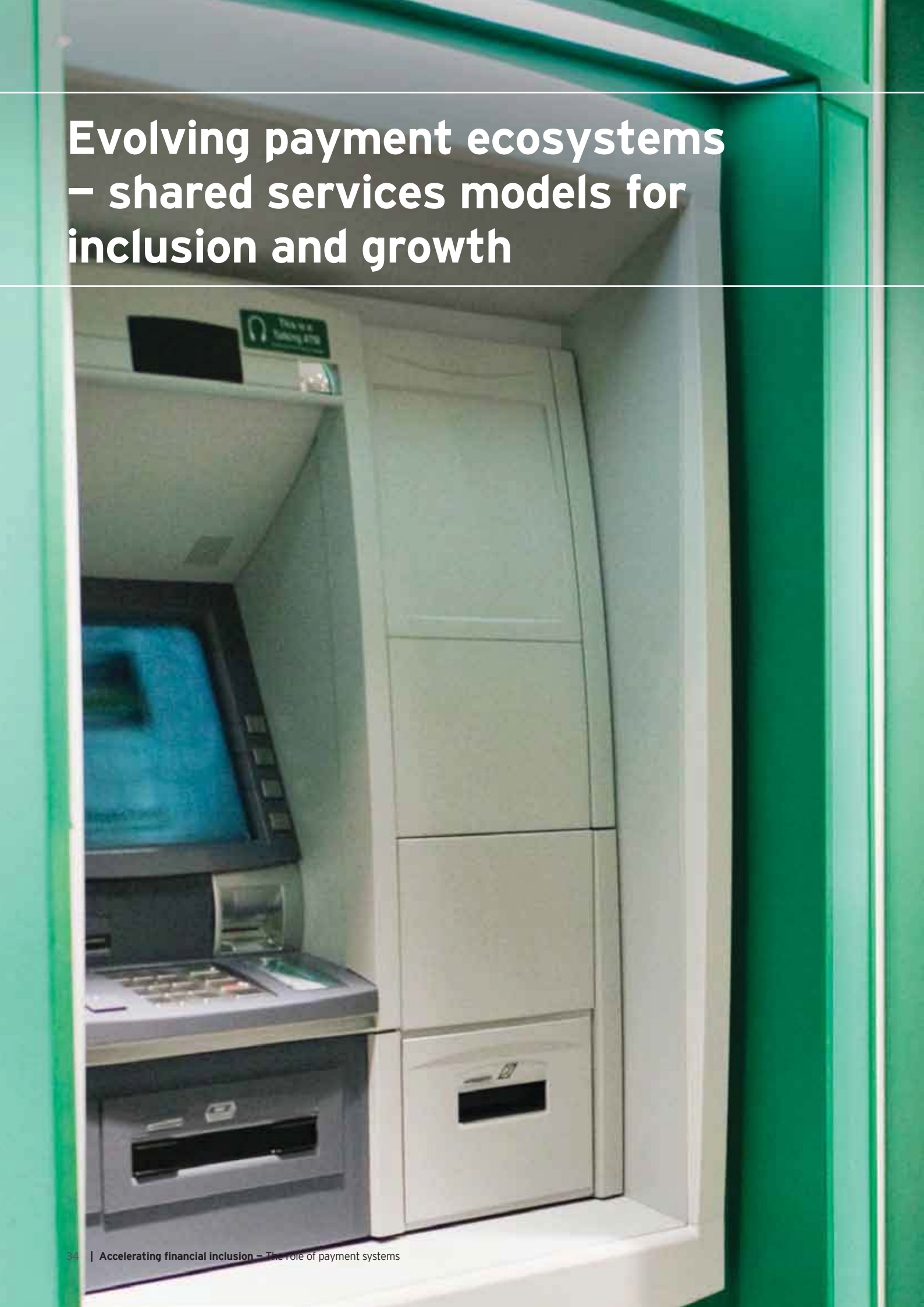
Sr. no	Proposed initiative/action	Potential degree of impact	Affected entity
1	Incentive plan – reduced Sales Tax/ Service Tax proposition		Merchants
2	Banks to educate and create awareness for card-holders using plastic money		Card holders
3	Incentives given through loyalty programs and by enhancing security of transactions		Card holders
4	White Label POS initiatives with guidelines to incentivize businesses		Acquirers
5	Tax benefits and incentive programs for innovation in POS technology and manufacturing of POS terminals		Manufacturers of terminals/ acquirers
6	Incentive programs to set up state-of-the-art infrastructure for POS connectivity and installations		All stakeholders
7	Innovation in card products – cards with multiple applications such as combo cards (NFC and EMV) for Metro/transit usage		Issuers /Card holders

 Low impact  Moderate impact  High impact  Very high impact

Source: EY analysis


CARD NAME
CREDIT
EBT
ENTER
YES

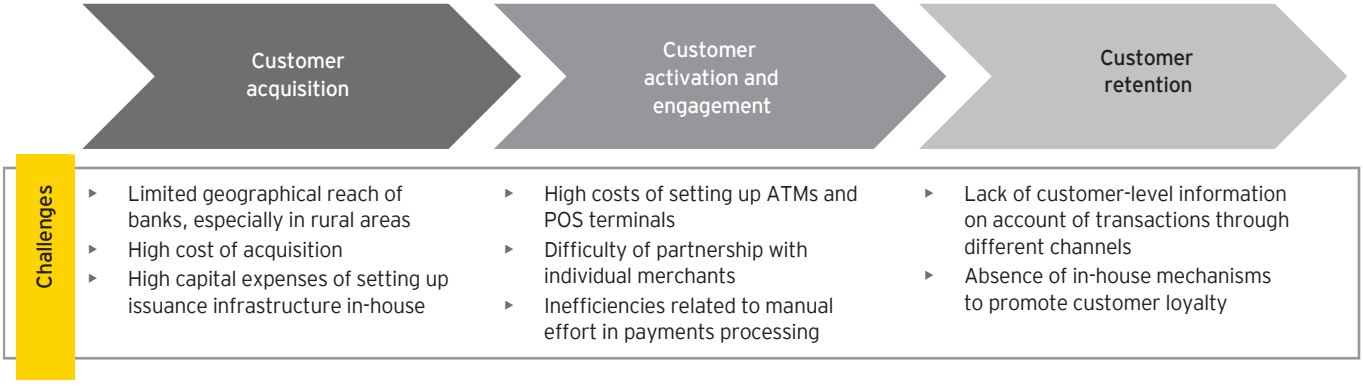
Evolving payment ecosystems – shared services models for inclusion and growth



As they attempt to increase their reach and penetrate new customer segments in a profitable manner, banks are establishing payment ecosystems that work across organizational boundaries to deliver innovative payment services. Fueled by the RBI's aggressive guidelines on increasing penetration, we see several emerging models of competition and cooperation in these areas. However, as banks learn to adapt and work with these "shared" models, they will need to be careful about ensuring their continuing focus on keeping their core strategic payment functions in-house while aggressively sharing their non-core ones. They will also need to learn to define and manage complex service-level agreements while monitoring associated costs and risks.

Shared services are of considerable importance in India's payment ecosystem. They provide banks access to customers, who may otherwise be difficult to reach on account of geographical or other considerations. In addition, banks also save on efforts and expenses relating to installation and maintenance of infrastructure such as ATMs or POS terminals. Above all, in the context of accepting payments, they provide customers of banks access to merchants without any specific effort made by the banks to acquire these merchants. Such services help banks deliver an enhanced customer experience while maintaining their operational efficiency and reducing their costs.

Figure 1: Challenges associated with the customer-management value chains of banks



Source: EY analysis

With their present infrastructure, banks are often unable to cross the last mile to reach customers, especially in lower tier cities and rural areas. The prohibitive cost of setting up branches and employing additional sales personnel (with the average monthly salary of a sales executive in any bank being close to INR10,000 without performance incentives) are the primary reasons for banks not being able to reach out to prospective customers in rural areas. In addition, on-boarding customers do not come cheap for banks, with significant expenditure and effort expended on applications, opening accounts in the system, issuance and personalization of cards, and dispatch of welcome kits.

The next major activity driving customers' activation and engagement with payment instruments can also be an effort- and cost-intensive exercise when managed in-house. It is estimated that banks spend around INR700,000 on setting up an ATM and another INR500,000 annually on its maintenance. The cost of setting up POS terminals is over INR 6000. Apart from the cost of equipment, banks end up spending an enormous amount on sales people and processes to tie up with each individual merchant to install POS terminals and/or accept online payment, without significant predictive information on the volume of these merchants' transactions and break-even timelines. Furthermore, once adoption of payment instruments is high, banks have to struggle with the cost and effort related to switching, settlement and reconciliation, using in-house systems and processes that are often not robust enough to handle large volumes.

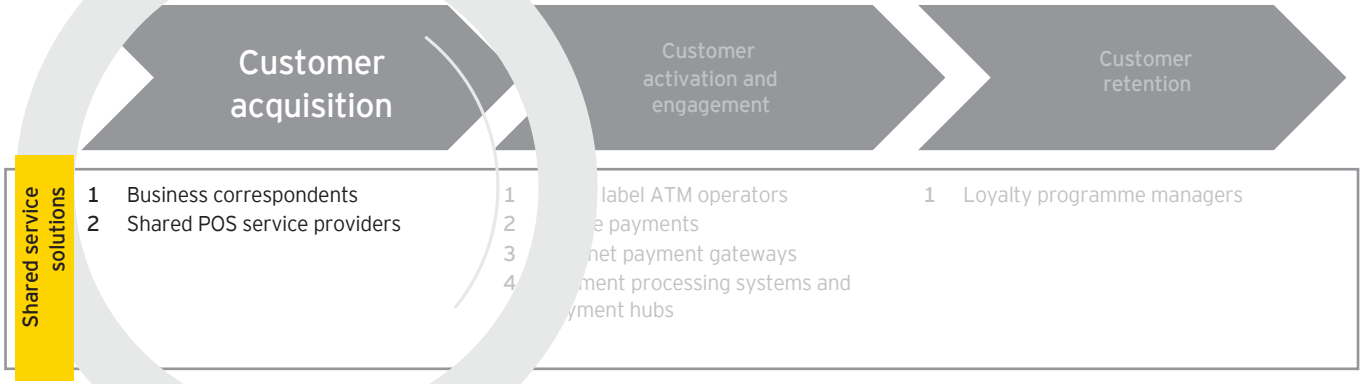
Finally, with increasing competition in the payment space and rapid evolution of customers, it is a necessity for banks to retain customers through loyalty programs. Some banks still deal with large volumes of data in terms of customer usage and contact details manually while running campaigns. This leads to ineffective management of campaigns in addition to loss of productive time and effort. Banks are often tentative about investing in in-house business intelligence, analytics, loyalty and risk management tools on account of the perception that tangibility of returns is low. (Reduction of the interchange rate on debit card transactions, for instance, has led to a slowdown in banks' investments in such campaign-management tools for debit card users.)

Shared service providers have therefore a boon for banks in dealing with escalating costs and uncertainty of returns. For instance, instead of setting up a POS terminal with a capital investment of over INR6000 and added maintenance and connectivity costs, banks can pay less than INR500 to a shared service provider per new terminal installed, and concentrate on driving POS volumes without being excessively concerned about investments in this low-margin business. At the same time, customers also gain access to more merchants that accept electronic payments and merchants (especially online and mobile ones) to the customers of different banks, without having to tie up with each of them.

It is expected that BCs will play an increasingly significant role in banks' efforts to reach out to the unbanked 50% of India's population, given the recent proliferation of Direct Benefits Transfer (DBT)

Trends and opportunities shaping the shared services space

Figure 2a: Evolving areas for shared solutions in the payment value chain

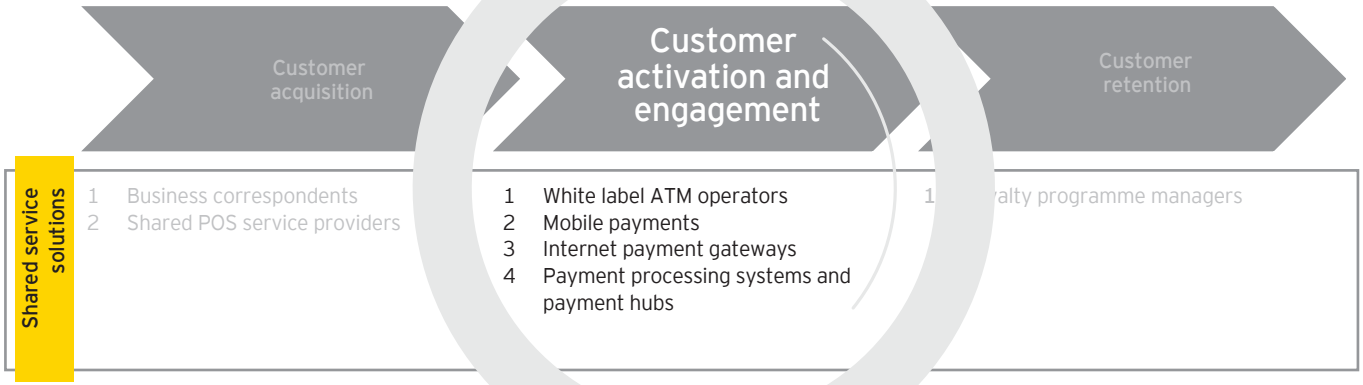


Source: EY analysis

1. **Business correspondents:** Business correspondents (BCs) such as telecom operators, postal services and other specialized entities have covered the last mile for banks to reach customers, who are beyond their geographical reach. It is expected that BCs will play an increasingly significant role in banks' efforts to reach out to the unbanked 50% of India's population, given the recent proliferation of Direct Benefits Transfer (DBT) by the Government of India to underprivileged citizens in rural areas and the competition among banks for a share of INR4,800 billion provided annually as government benefits. EY estimates the overall opportunity for BCs at around INR567 billion per year through banks' commissions on acquisition of customers and facilitation of transactions over the next two to three years.

2. **Shared services for acquisition of merchants:** Similar to ATMs, shared services for acquisitions of merchants have been prevalent for the last two to three years. In addition to procuring and maintaining terminals, independent service operators now also help banks source merchants and connect to card schemes for routing transactions. These new-breed operators' have a revenue model that includes a fixed service fee from banks on each new merchant acquired, as well as a percentage of the merchant's discount rate if the operator is assisting in routing transactions. Another recent phenomenon is a joint venture entered by a bank with a shared services provider, whereby the entire business is hived off to the latter with the bank only enjoying the float in merchant accounts. EY estimates an overall revenue opportunity of INR16 billion per year for POS-related shared services by 2018 at the present rate of growth in card-related transactions and merchant terminals.

Figure 2b: Evolving areas for shared solutions in the payment value chain



Source: EY analysis

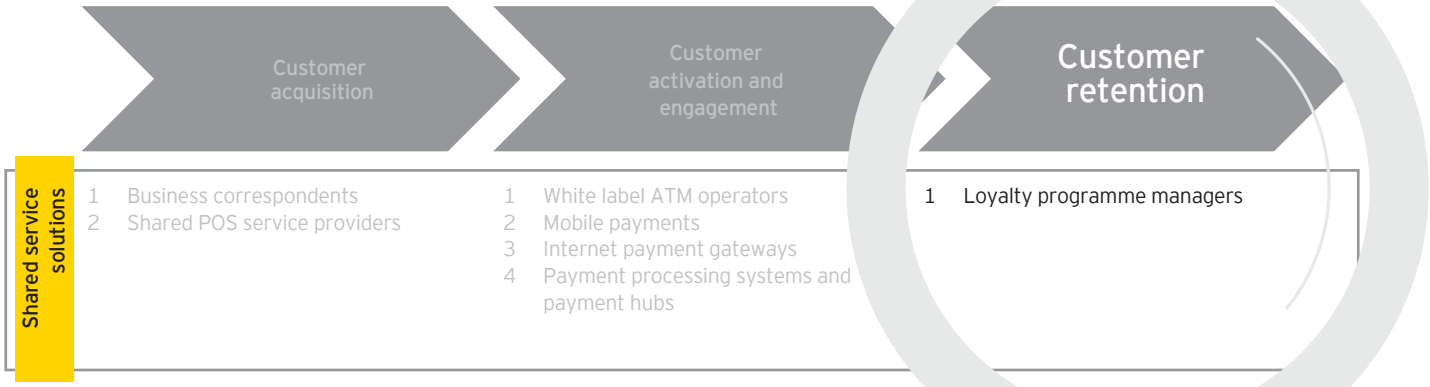
3. **Shared services in the ATM space:** While banks outsourcing location-related decisions, and installation and maintenance of ATMs to independent operators has been a common trend over the last three years, some forward-looking intervention by the Government and the regulator have opened up new avenues of opportunity for these operators. The Department of Financial Services has awarded centralized contracts for around 63,000 new ATMs of public sector banks to independent operators. In addition, licences for White Label ATMs have also been issued to 17 non-banking operators, and one of them has already commenced operations. EY estimates that around 150,000 White Label ATMs will be deployed by 2018, leading to an overall revenue opportunity (through a combination of basic banking transactions and value-added services) of around INR100 billion per year.

4. **e-Commerce:** In the online space, payment aggregators/ gateways are the starting point for online payments and process online transactions in a secure and convenient manner. The market is primarily driven by independent operators in addition to the internet payment gateways of banks. The number of online purchasers has been witnessing a rapid growth trajectory and is expected to grow to 38 million users by 2015. The value of transactions is expected to rise at a CAGR of 61% and reach INR6,000 billion by 2016. With major players now offering services free of setup costs, It is expected that the industry will follow suit and IPG margins will go down further from 2.5-3% at present to around 1-1.5% in the next couple of years due to major players now offering their services free of setup costs. The size of the IPG market is expected to reach INR6000 billion by 2016 and further consolidation is expected with major payments operators trying to enter India's e-Commerce market and targeting acquisition of existing players in it.

5. **Mobile commerce:** With the increasing spate of mobile payments, it is increasingly becoming a necessity for every e-commerce operator to provide gateways that are compliant with m-commerce. BillDesk was one of the first online aggregators to enter this space with its acceptance of payments through Airtel Money. EY estimates an opportunity of INR2 billion for mobile payment aggregators in the next five years with P2M payments through mobile money expected to grow to INR 200 billion by 2018.

6. **Payment processors:** These operators perform functions such as providing support on issuance of payment instruments, reconciliation and settlement, transaction switching and messaging, which makes them relevant across the entire range of form factors in the payment evolution cycle. Banks have been outsourcing different parts of the payment process to independent operators. We believe they will slowly move toward an Enterprise Payments Hub system, which will integrate different systems and processes on one platform and thereby enhance the efficiency of processes while reducing their operating costs and time-to-market for new initiatives. This also presents an attractive opportunity for IT majors to enter the payments market in a big way with each EPH solution having the potential to generate revenues of around INR0.4–0.5 billion for solution providers.

Figure 2c: Evolving areas for shared solutions in the payment value chain



Source: EY analysis

7. **Loyalty programs:** In an era of capping of debit card interchange fees by the RBI, banks are faced with the challenge of changing the foundation of rewards programs that were previously funded by interchange income from both credit and debit cards. With debit interchange funding reduced, banks still need to continue to find ways to improve bank loyalty and drive the desired debit and credit usage and transaction behaviour. In addition, banks need to better leverage "big data" and the potentially large mobile shopping phenomenon in the hope that they can replace some of the revenue lost as a result of RBI's interventions. It is evident that the future of rewards and loyalty in banking will to a large extent depend on how banks' leverage the benefits of transactional insight, targeted offers/communication as well as mobile marketing and payments. In the last few years, banks have been increasingly turning to non-banking specialist loyalty providers who combine expertise in analytics, deal management, loyalty and merchant relationship, in order to provide a unique loyalty proposition, e.g. coalition loyalty programs, merchant-funded rewards. Going forward, we believe that banks will work with non-bank loyalty players to analyse their huge transaction data and to connect with retailers and merchants in order to provide customer unique value and personalized. The social networking data adds an interesting new twist to the personalization capabilities that could be possible, when they are added with transaction data that banks already have today. The concept of loyalty marketing will undergo a quantum shift in how it operates and who is in the key enabler seat for merchants, where banks have a huge opportunity to facilitate these interactions by taking help of the specialist loyalty partners.

It is evident that the future of rewards and loyalty in banking will to a large extent depend on how banks' leverage the benefits of transactional insight, targeted offers/ communication as well as mobile marketing and payments.

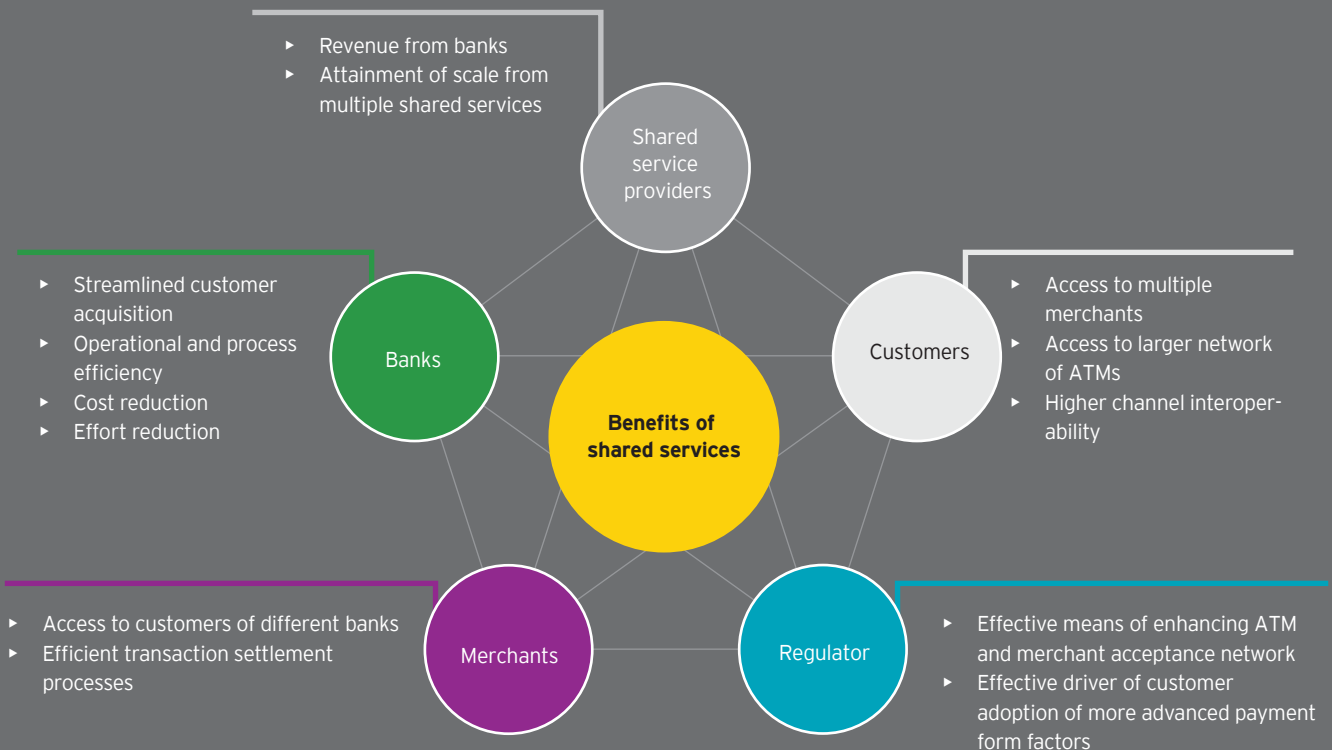
The way ahead for shared services

The outlook for the shared services market across different payment form factors remains extremely positive, with the RBI's forward-looking guidelines, including its allowing for-profit organizations to act as business correspondents for financial inclusion and White Label ATMs. The RBI has also indicated the possibility of White Label POS terminals being considered very seriously to ensure increased ease of making card payments across geographies.

Banks will have to make strategic choices on the use of shared service providers across the value chain. Orchestration of the customer experience will be a key challenge as they work across organizational boundaries. They will also need to strengthen and manage their information privacy processes as they share sensitive information with their partners. Finally, service level definition and management will become critical to ensure that they realize sustainable benefits from their partnerships.

Along with helping banks cover the last mile to customers and merchants, it is critical for independent payment services operators to share their vision of a secure transaction environment for users, especially with the rampant growth of

Figure3: The shared services ecosystem – value for every player



Source: EY analysis

fraudulent transactions across ATM, POS and online spaces. While stronger security standards need to be enforced on these players by the RBI as well as card associations, it is also imperative for banks to conduct suitable due diligence before partnering with shared service operators.

Finally, it is expected that competition in terms of pricing and value-added services for customers and banks will be intense in the next couple of years due to the number of small players entering the shared services space. There are already some indications with early entrants in the IPG space, which has now scaled up considerably, waiving setup costs for select merchants – a trend other players need to adopt to survive in a highly competitive market. We expect the entire shared services space to be consolidated over the next five years, with larger players including travel merchants and NBFCs seeking to enter the market through acquisitions. However, till such time as that happens, it is aggressive competition that will drive this market, with the eventual beneficiary being the end customer in terms of the security, convenience and channel interoperability of the transaction environment.

Pathways to excellence – the transformation agenda for banks

Changing consumer behavior, the increasing urgency of financial inclusion and ubiquitous mobile telephony are powerful exogenous factors that will transform the Indian payments industry over the next 10 years. One key trend will be the move from cash to electronic payment methods, which will throw up numerous opportunities for financial services firms. The successful ones will take a holistic view of their payments businesses across products, customers, and technology and risk management as they seek to capitalize on this opportunity.

In the last decade, India has witnessed significant achievements in its efforts to migrate from traditional payment methods through cash to modern electronic payment systems. The RBI's focus on moving away from paper based payment methods is bearing rapid results. In 2012 the percentage of non-paper based payments transactions was 48% up from 27% in 2008. At the same time, evolving consumer behavior, technology-led banking transformation and the growth of remote banking channels have helped significantly. In addition, ample connectivity has been a powerful factor that have positively affected the payment landscape in India.

However, although there has been significant progress made on various parameters, a lot still needs to be done in the next few years.

- The 350 million-card milestone (credit and debit) was crossed in 2013. With over 49 million debit cards issued in 2012–13 and a larger number expected to be issued in 2013–14, this rapid pace of growth is set to continue. However, debit cards still have very low activation rates at POS (~ 8%)
- Credit card spends are back on the upswing after a period of consolidation. More than 19.15 million cards were in circulation and the segment witnessed spends of INR1.24 trillion in FY13. However, the increase seen in acquisitions is slower than during the peak growth period in 2008–09.
- Pre-paid cards have grown by almost 50% from FY10 to FY13. The pre-paid card market grew from INR200 billion to INR700 billion during this period. However, many issuers are still facing challenges in generating adequate revenues due to consumers' reluctance to opt for pre-paid cards.
- With mobile subscriptions in India expected to touch one billion by end of 2013, mobile payments (m-payments) are also on the rise. However, the growth of mobile payments has been sluggish, as seen in the case of the Interbank Mobile Payment System (IMPS), with only ~ 2,300 transactions taking place each month on an average [1].
- Acceptance infrastructure such as ATMs grew at a CAGR of 24% during the period 2011–13 with 124 thousand ATMs deployed currently. The presence of POS has also grown in the retailer landscape at a CAGR of 27% during FY13, with the deployment of 968,000 POS. However only 10% of the ATMs deployed are in rural areas, where 70% of India's population lives.

Factors driving the growth of payments in India

- **Enabling regulations:** The proactive role played by the RBI has led to the increased participation of non-banking organizations[2], growth in the payment infrastructure and more concerted push for financial inclusion based on Aadhaar, scaling up of payment infrastructure, technology being upgraded in banks and implementation of frameworks to protect the interests of consumers and stakeholders. It has also opened India's doors to new emerging payment- growth systems, products, and technology and business models while protecting consumers' and merchants' interests
- **Evolving technology:** Rapidly developing payment technology has led to the proliferation of products, their increased usage and new business models. It has also improved the security of transactions, enhanced efficiency, reduced costs and helped organizations overcome stubborn structural and technological bottlenecks. For example, new emerging POS technologies and devices such as mPOS or microATM are helping stakeholders address and resolve problems relating to high costs, low merchant acceptance and restricted reach.

1 NPCI data, FY13 computed monthly average

2 Approximately 34 non-bank entities now partner with banks- Banking, Electronic Payments and road ahead-FICCI-IBA conference on Global Banking, 2011

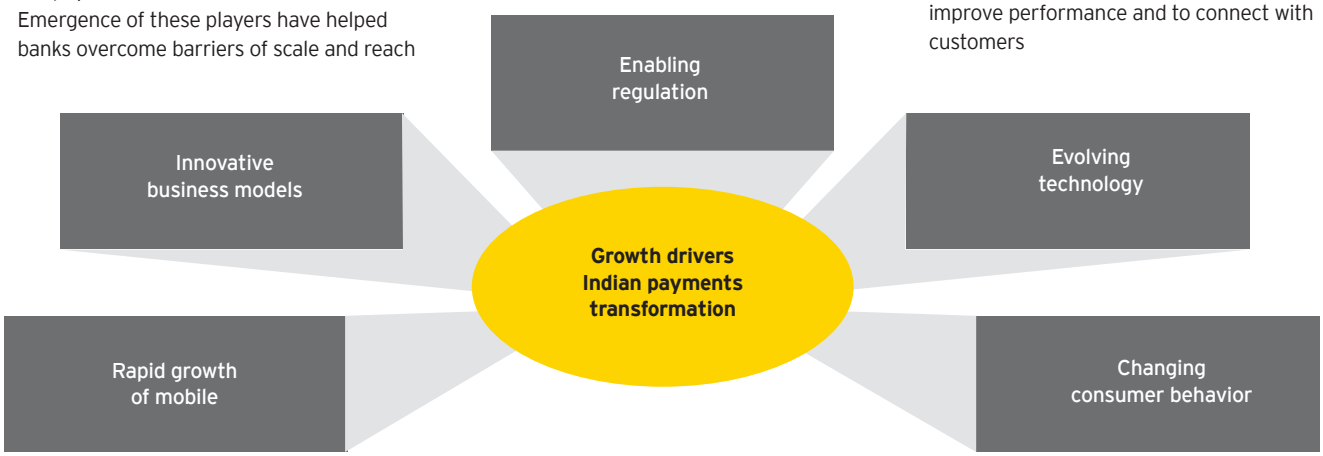
The RBI's focus on moving away from paper based payment methods is bearing rapid results. In 2012 the percentage of non-paper based payments transactions was 48% up from 27% in 2008.

Figure 1: Growth drivers that have led to transformation of payments landscape in India

- RBI has played a catalytic role by means of enabling policy framework, allowing non-banks in payments and promoting innovative payment technologies

- Spurred by the RBI, non-bank entities have added significant value in several areas of the payments value chain
- Emergence of these players have helped banks overcome barriers of scale and reach

- Innovation in payments technology have help India to leapfrog in several areas
- Banks have used technology to cut costs, improve performance and to connect with customers

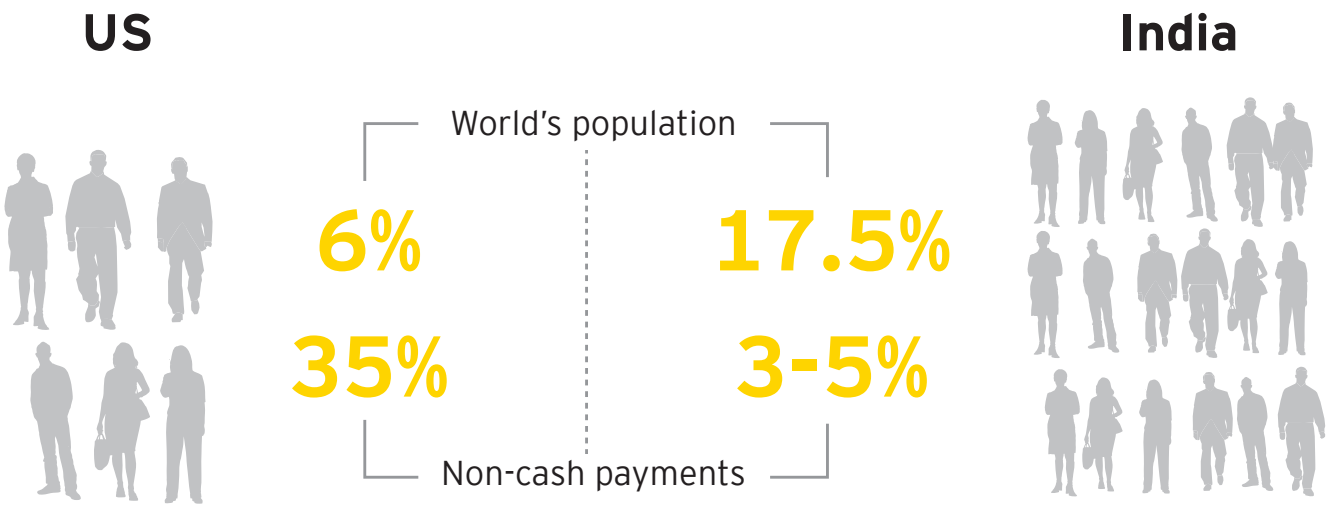


- Mobile has become ubiquitous with 84% of Indians having at least one mobile service subscription.
- Falling costs of devices, improved connectivity and emergence of mobile apps driving m-commerce

- There have been visible changes in the way consumer perceives, chooses and wants to pay for goods and services
- Need for convenience, speed and efficiency driving consumers to adopt electronic payments and channels

India is at interesting point in its payments journey wherein the seeds that had been sowed for the creation of a electronic payment architecture & ecosystem have borne early fruits. Future growth will depend on innovation in products, business models, consumer interfaces, security and infrastructure under the umbrella of enabling regulations

Source: EY analysis



- **Changing consumer behavior:** Fueled by a 7%–8% growth in expenditure on personal consumption for the last several areas, India's young population is rapidly adopting technology to interact and transact with the world. The demand for speed, convenience and security has led to consumers making payment by cards in the last few years. In addition, they are increasingly moving toward new payment options including mobiles, NFC and social media payment.
- **Rise of internet and mobile devices:** The reach of the internet has expanded due to the rapidly falling costs of devices and connectivity. The explosion of smartphones and tablets, along with high-speed connectivity, has spurred significant growth in e-Commerce and online payments. This has resulted in consumers' expectations being shaped by their experiences outside the banking industry, where content, interactions and features are richer and deliver a more engaging and rewarding experience for them. The growth of mobiles has made a major impact on banks and has transformed their traditional interaction models in all their consumer segments.
- **Innovative business models:** The innovation juggernaut in India's payment landscape has rolled on with a wide range of breakthrough business models, consumer-related propositions and implementation of modern technology solutions. The acceptance side has seen new players in POS, ATM infrastructure and managed services. On the technology side, processing of payments, online acceptance, and data and analytic services are emerging as new areas of non-banking expertise. On the consumer side, several new players are redefining grass-root level payment principles by using mobiles, biometrics, smart cards and prepaid technologies.

Taken together, the developments mentioned above have laid the foundation for further growth of the country's payment ecosystem.

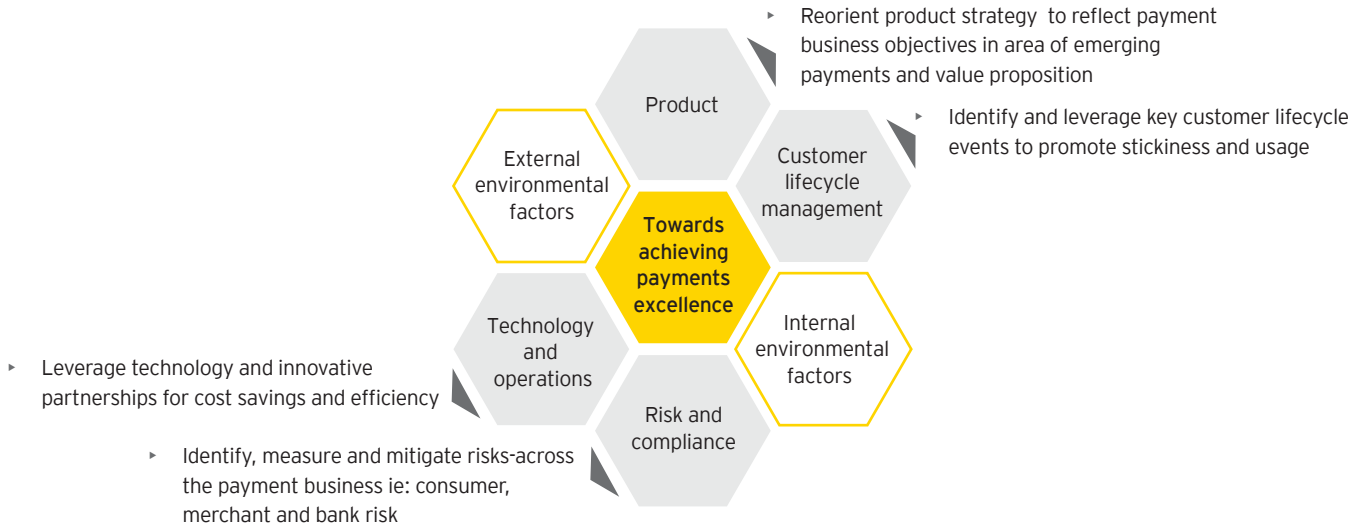
Pathways to achieve excellence in payments – targeting areas of strategic value

Heavy reliance on cash in India presents a huge opportunity for banks and non-banking organizations. To visualize this opportunity, it is useful to compare country-wise population and transaction volumes. The US, with 6% of the world's population, accounts for 35% of non-cash payments. In contrast, India, with 17.5% of the world's population, accounts for only ~ 3-5% of non-cash payments worldwide[3]. Even this single comparison, with a global benchmark on cash usage, clearly highlights an important opportunity for Indian banks and non-banking organizations.

This paper highlights four main strategic areas of focus for banks seeking success in the ever- evolving payment landscape. These focus areas can be construed as burning imperatives that banks must implement to transform their current payment-related activities.

3 EY analysis of statistics on payment, clearing and settlement systems - BIS figures for 2012

Figure 2: Pathways to payments excellence



Source: EY analysis

Strategic focus area 1

Creation of an effective product strategy

Having an effective product strategy that fully captures opportunities in the market and reflects banks' aspirations is an essential part of managing payments. A detailed understanding of value that may be captured will be a key determinant of success for all players – for issuers to protect their profit pool and for others to capture a share. Being able to identify and gauge pools of value across the card-issuing value chain (e.g., book-building opportunities in credit cards), and consequently select and execute a strategy to capture these in a systematic and focused manner, will prove to be a key differentiator among issuing banks.

New payment products such as Prepaid for Transit payments, toll collection and financial inclusion present a growing opportunity. We believe that we are at the cusp of an explosion in this product segment. While existing applications of prepaid segments are expected to continue to grow at supernormal rates, we expect relatively new segments such as DBT, Remittance, m-Wallet, ETC and AFC to collectively contribute INR6,149 billion – accounting for more than ~47.4% of the prepaid market in FY20. However, although these segments represent lucrative opportunities, they also throw up some challenges. Direct Benefit Transfer on Prepaid will need a further push from the Government, given that it is a better alternative for transferring G2P payments to the unbanked rather than using the bank account route. Transit and toll payments will require banks to develop new skills and enter collaborations in several areas of technology, e.g., NFC, and contactless and transit back-office operations.

Being able to identify and size pools of value across the card-issuing value chain and consequently select and execute a strategy to capture them will prove to be a key differentiator among banks.

Three areas of priority emerge for banks in this space:

Reassessing and realigning payment product mix in light of consumer-related trends, market stages and competition should become a key action point for banks to focus on. Uncertainty about generating revenues in new businesses and compression of margins in existing payment businesses has become a common feature for all banks, since regulations, provisioning requirements, slow demand, price-related competition and shifting consumer behavior all affect profitability.

It is therefore imperative for banks to:

- Reassess whether their present product mix fully capitalizes on the available market opportunity in terms of underpenetrated segments, new user cases, consumer trends, technology and form factor innovations, etc., e.g., electronic toll and transit, prepaid cards in financial inclusion, NFC-enabled mobile payments.
- Decide on target segments and product offerings in terms of their value proposition, market differentiation, pricing and customer-acquisition strategies, e.g., corporate organizations for B2B payment solutions and unbanked segments.
- Decide on product offerings that harness the right levers to support profitable growth in target segments, e.g., by launching fee-based credit card products to support the objective of achieving high fee incomes and increased spends, leading to growing revenues and reduced losses.
- Build product upgrade and cross-sell strategies for existing consumer base to promote stickiness of usage and improve retention of consumers, e.g., utilize transactional behavior and customers' profile data to move them up the product value chain.

Focus on corporate or enterprise payments should be another major area for banks to consider. Today's corporate customers want more value-added services from their banks, delivered in the form of reduced costs, increased flexibility and enhanced connectivity. Banks that meet these requirements can generate new revenue streams, while enabling their corporate customers to achieve cost savings, and thereby creating a win-win situation for the banks as well as their customers.

In this area banks need to:

- Fully integrate their network-driven commercial payment products with broadened treasury service lines of business.
- Increase understanding between treasury service professionals and card program managers to better align card products with treasury service products, e.g., payroll management solutions being coupled with Direct Deposit and Payroll Card ones.
- Develop segment-specific solutions that can include a combination of products to meet the needs of large corporate organizations and small businesses, e.g., a corporate organization with large overseas operations requiring F/X products, export payment solutions, F/X cards, etc., and a small merchant business needing a cost-effective payment acceptance solution such as an innovative smartphone adaptor that reads and accepts payment cards.
- Build early partnerships with innovators in the non-banking space, focusing on B2B payments to build a leadership and first mover advantage, e.g., a large foreign bank collaborating with a technology innovator to offer the first end-to-end payment and collection solution for corporations in India, ôdb-ebillsö, which supports invoice and financial processing, reconciliation and reporting options.

Leverage social media payments, since the increasingly young customer base or "digital natives" expect a rich digital banking experience that is both mobile and social, and seamlessly integrates their banking needs with their digital lives. This group of around 66 million[4] in urban India represents a highly important customer segment for banks, since they are beginning to reach the peak age of financial consumption and will be an important source of value for them. For banks, they are potential game changers, complicating the way the former interact with customers and manage their payment systems.

Some imperatives for Indian banks:

- Integrate social media into existing payment offerings at all points of the payment continuum —from choosing a payment product, paying at merchant sites and accessing account information from customer service, e.g., social media payment apps
- Reboot banking analytics to leverage and integrate emerging social media analytic techniques with existing business intelligence (BI) setups within banks to track consumers in terms of where, how, when and how much they spend, e.g., hosted social media analytic solutions that can help a bank analyze how people are engaging with its Facebook page, how much time they are spending on the page, how they are sharing the content and where they are sharing it.
- Create a framework to address social media risks that may originate from participants and gaps in technology, e.g., risks pertaining to social engineering attacks, resulting in identity theft through fraudulent payment transactions, stealing payment card details, etc.

Strategic focus area 2

Adoption of lifecycle management approach to achieve profitability

The traditional focus of banks on payments cards has been on acquiring new cardholders. This has frequently resulted in other stages of the lifecycle being neglected. The approach of banks to customer lifecycle management has largely been dominated by big ticket spends, usage campaigns and offers aimed at inorganic "book build." This "one-size-fits-all" approach to card portfolio management has resulted in several negatives such as large dormant portfolios and delinquencies. At the height of this phase, nearly 50% of its issued cards of one of the largest credit card issuers in the country were either dormant or Never Used (NU), and it had high loss rates of up to 15% (where below 3% is considered normal).

Today, even if those days are behind us, banks are still struggling to be profitable in their credit and debit card portfolios. Given the trends mentioned above, it is becoming increasingly important to identify important stages in the customer lifecycle to unlock growth potential and capture opportunities.

Two areas of priority emerge for banks in this space:

Use loyalty to differentiate your card program from those of your competitors. After the clampdown on interchange of debit cards by the RBI and continued pressure on the profitability of credit cards, banks are struggling to run and grow their proprietary reward and loyalty programs. In response to these challenges, several alternative loyalty models are emerging. Merchant-funded rewards and coalition loyalty programs aim to shift the burden of huge program costs from banks to merchants' coalition loyalty partners.

4 As per June 2013 IAMAI statistics

Banks should take the following steps to invigorate their loyalty strategies:

- Aim to build a "Total Relationship Loyalty" approach, which rewards customers for their relationship with a bank, e.g., a large private sector bank implementing the "MySavings" reward program, based on the coalition loyalty model.
- Build a loyalty model that is profitable by implementing merchant partnerships to fund the cost of rewards (merchant-funded rewards) or Coalition loyalty, where program costs can be curtailed to a large extent, e.g., in the Payback Coalition loyalty model.
- Use customer-related analytics effectively to design reward, earn and burn rates; increase card usage and maintain a healthy balance between points earned and burn rates at the portfolio level, e.g., increased liability on account of unredeemed points can be tackled with focused campaigns such as expiry of points.

Introduce advanced offer and deal management techniques to keep the customer excited about the card program and generate increased spends and revenue. Issuing banks can bring together customer profile history with POS data and open new doors to customize retail promotions. Another area of opportunity for banks includes alliances with online dal sites. Just as Amazon revolutionized the e-Commerce landscape by offering a personalized and relevant experience to each individual consumer, issuing banks are in a unique position to revolutionize their "Daily Deal" landscape with a similar personalized and relevant experience for consumers.

To reap the benefits of increased stickiness of spends and customer loyalty, banks need to:

- Create the requisite infrastructure that can help banks data mine their card holder data and transaction behavior, and make relevant offers to their customers.
- Create capacity to randomize and mask critical customer information to ensure data privacy and confidentiality.
- Develop real-time capabilities that are aimed at using information on customers' locations and their past usage behavior in order to send them relevant deal offers.

The approach of banks to customer lifecycle management has largely been dominated by big ticket spends, usage campaigns and offers aimed at inorganic "book build." This "one-size-fits-all" approach to card portfolio management has resulted in several negatives such as large dormant portfolios and delinquencies.

Strategic focus area 3

Use technology and operational effectiveness as a profit lever

In their quest to expand their reach in a profitable manner, banks will leverage technology to establish payment partnerships that work across organizational boundaries to deliver innovative payment services. At its very core, these "shared" or "outsourced" models either leverage a technological innovation or have an operational efficiency advantage. Additionally, banks are moving toward building Straight Through Processing (STP) and Payment Hubs (EPH) capabilities due to rapid advances in banking technology, to enhance the efficiency of their operational processes while reducing their costs and time to market.

Three areas of priority emerge for banks in this space

Outsource operational functions that provide a strategic advantage to a bank, e.g., cost savings, enhanced performance and new product innovation. At the same time, it is also incumbent upon banks to identify their risk exposure to different vendor types, create business continuity plans, and have adequate risk mitigation and audit plans in place.

They can take several approaches to outsource these functions to shared service providers detailed below:

- Implement a lean operational model for their payment business, which should be characterized by extensive use of shared services such as in the ATM and POS space, payment processing, card analytics and loyalty program management.
- Optimize sourcing and procurement by using offshoring and outsourcing services to make costs variable while reducing fixed costs, e.g., Indian banks can outsource their analytics and data warehouse functions to a third-party provider with the benefit of quick capability creation at a reduced cost.

Implement Straight Through Processing (STP) in payments business. STP helps banks to improve the visibility of their payment value chain, and thereby reduce the time and cost of payment processing, improve their risk management functions and optimize their working capital by framing appropriate SLAs with intermediaries.

Some action points for banks:

- Identify information silos to enable centralized enforcement of payment standards, rules, routing preferences and customer-processing preferences.
- Identify problem areas with respect to exceptions in payment and process workflows to implement a centralized straight-through processing payment solution.
- Streamline the process by automating as many points as possible in banks' current payment systems to witness an increase in payment volumes and sub-optimal STP rates.

Implement a payments hub to improve the visibility of payment processes by reducing the time and cost of detecting fraud, risk management and compliance by applying these in a centralized manner across lines of businesses, payment

types and payment channels. This approach helps to overcome some issues that impede visibility of payments and processing, e.g., fragmented channels to initiate payment, differences in clearing and settlement types, and loss of control due to "siloed" functions.

Some recommended key priorities for banks:

- Establish an architectural vision and roadmap for the Enterprise Payments Hub (EPH) project after consultations with stakeholders.
- Establish governance with authority not just over the EPH project, but over any payments-related projects within the bank to make sure that all projects go through prioritization of ROI and nothing is launched that may contradict the bank's architectural vision and overall roadmap.
- Assemble the right team (internal and external) and align all parties, agree on the common language and clarify the terminology to be used, ensure the right mix of skills and ensure clarity of roles.
- Avoid a "big bang" approach. Have a long-term vision, but migrate in stages, building scalability and extensibility.

Strategic focus area 4

Strengthen risk and compliance in payments

As the number of banks, customers, merchants and the pace of technology increases, there will be an increased need to forecast payment-related risks, monitoring and real-time tracking of payment processing by customers. To achieve the twin imperatives of regulatory compliance and operational efficiency, it is vital for banks to focus rigorously on risk management functions such as detection of fraud, liquidity management and monitoring of business activity. What is also imperative is operational efficiency in payments in areas including management of operational liquidity, underpinned by effective compliance and risk-management processes, which is critical for any modern and competitive operation.

Three areas of focus stand out in respect to Indian banks:

Achieving EMV migration for all issued debit and credit cards is an important step for Indian banks in order to detect and arrest fraud in the present card environment. Many card-issuing banks see EMV as a compliance issue. In addition to its implementation leading to immediate reduction in fraud risk, it will also help banks to reduce their operating costs and result in increased consumer confidence, leading to growth in banks' transactions.

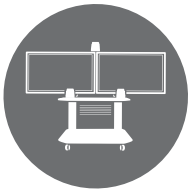
With EMV in place, certain benefits for banks could make a major bottom line impact:

- Targeting higherrisk cardholders for more frequent online authorization reduces bad debt and writeoffs.
- Secure offline card and cardholder authentication, coupled with smart risk management, enables more transactions to be completed offline without authorization from the issuer host, and thereby reducing authorisation and infrastructure costs.

Key focus areas for risk management

Detection of fraud

Liquidity management



Monitoring of business activity

- Enhanced security also enables card payments in many new or previously fraudprone sectors such as selfservice filling stations, vending and other unattended sites.
- Growing business through more cards, terminals and transactions translates to additional revenue.

Some immediate action points for banks in this domain:

- It is important to understand that EMV is not just a technology-led program. Be prepared with the right EMV strategy for a balanced and endtoend appreciation of all related opportunities and their impact. Banks will need to engage with organizations with a proven track record to cover the entire migration process.
- Formulate strategy, business case and project roadmap. This exercise needs to address current and future product, technology, development, implementation and operational strategies.
- Conduct detailed gap analysis, comparing card products in circulation now and what will be needed in the future. This process will provide the baseline, define requirements in business and technical areas, and reveal areas where more radical change or a new structure is needed.

Implement merchant on-boarding risk management framework for physical and online merchants. The influx of mobile card acceptance solutions has had an effect on the way merchant acquirers manage risk. Devices that convert smartphones to payment terminals have effectively entered the marketplace, enabling private individuals to be card payment acceptors. Aggregators that support these solutions typically operate as merchants of record. Therefore, the task of risk management, especially when the solution provider is a start-up from outside the circle of experienced payment industry players, is increasingly becoming an upstream activity. For instance, not only is a merchant aggregator required to conduct extensive monitoring and due diligence on its users, but a bank as the acquirer of records, also scrutinizes the aggregator's

activity. Barriers to adoption of mobile card acceptance solutions are relatively easy to surmount, as compared to the complexity merchants can encounter when signing with an acquirer for a traditional merchant account. As more acquirers bring mobile solutions to market or support start-up partners, risk management systems and procedures will need to be assessed and tuned to analyze these new types of card acceptance behaviors.

Banks will have to:

- Prepare and use well-defined merchant risk-rating tools that take into account important parameters. These could highlight merchants' risks and their acceptable thresholds.
- Define and implement key principles of risk management and compliance before on-boarding merchants, e.g., through financial due diligence, business activity diligence, credit score, banking and asset relationships, KYC, etc.
- Rely on continuous risk assessment and business activity monitoring rather than "one-off" checks.

Be aggressive while outsourcing, but have strong vendor-risk management practices. The payment value chain is being rapidly disaggregated. The advent of non-banking ATM and POS service providers, payment processors, aggregators, telco relationships, etc., while having revolutionized the payment landscape, have also thrown up important risk management challenges.

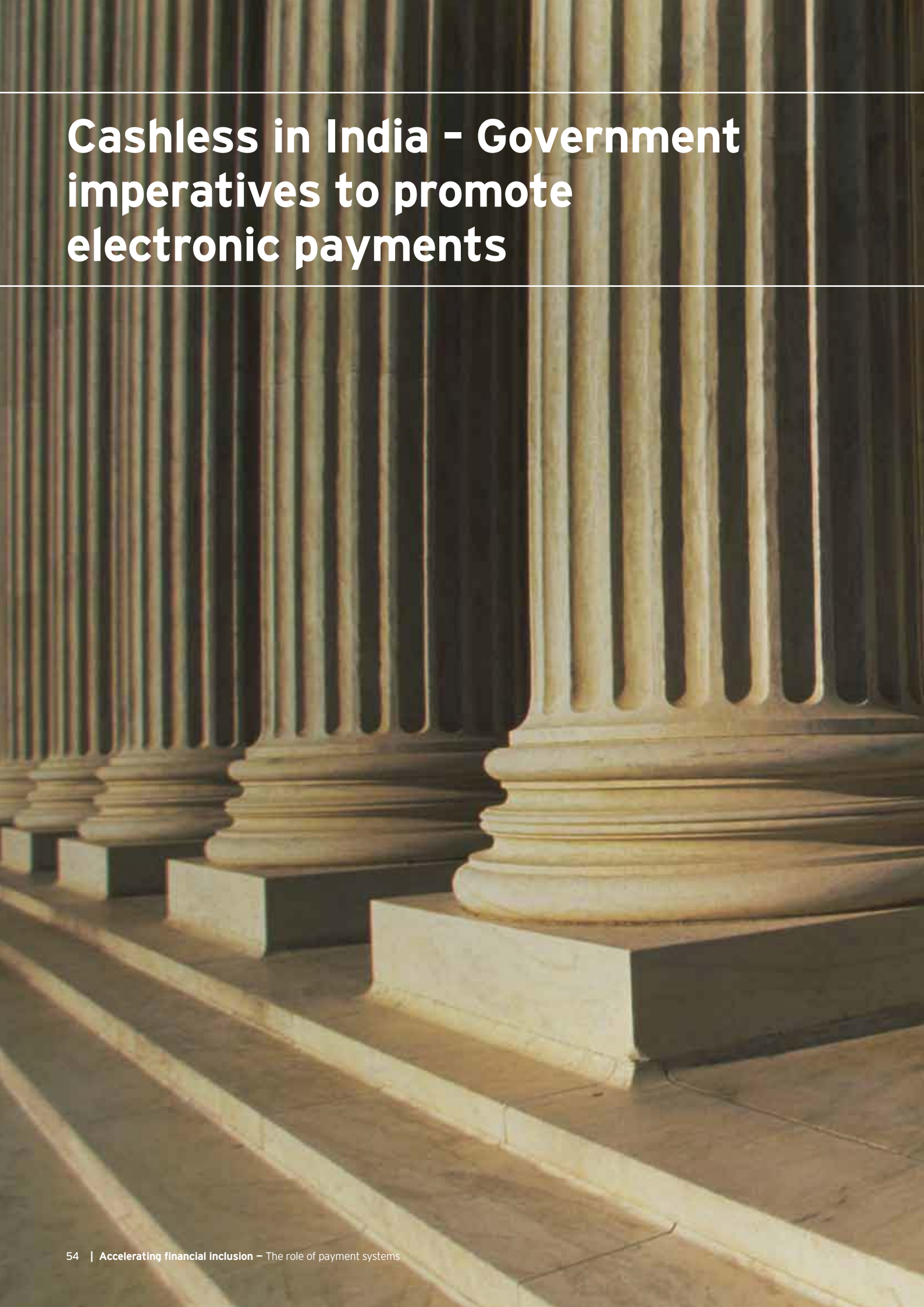
Banks will therefore have to immediately focus on:

- Developing fraud analytics that enable real-time monitoring across channels, products and geographies
- Developing and deploying improved front-end devices and customer-authentication techniques
- Launching consumer-education programs to help users fully understand the mobile security tools available and the consequences of ignoring these

Conclusion

In the new payment environment, banks need to become more innovative across the retail payment value chain – from acquisition, lifecycle management, segmentation, product development to retention. The reality is that banks can no longer just function as acquisition engines. Instead, they must offer workable, low-risk and cost-effective solutions to meet their customers' needs with regard to all types of payments. The market environment, which is characterized by extensive use of cash and a huge number of unbanked households, presents a clear opportunity for banks and other payment players. In addition, the rapid migration of cash to cards and electronic payment, along with initiatives to improve financial inclusion, will open several paths for the growth of new payment modes.

Cashless in India – Government imperatives to promote electronic payments



From taxes to social welfare benefits, the Government of India cumulatively receives and disburses billions of rupees to and from its citizens – money that has a reverberating effect throughout the entire economy. By digitizing this flow of money, the Government can lead a strategic shift from total dependence on cash to a more efficient, electronic payment system, which leverages online and mobile channels to cut costs and bring social benefits to millions.

The road so far

It is estimated that out of the total INR4,800 billion spent by the Government on social welfare schemes, INR369.7 billion may be lost on account of leakages and corruption[1].

The Government of India and the Reserve Bank of India, recognizing the inefficiency of a cash-based economy, have taken several initiatives in the past decade to promote an electronic payment system.

- A strong **payments and settlement framework** was created by launching initiatives such as the establishment of the Board for Payment and Settlement Systems, passing of the Payment and Settlement System (PSS) Act in 2007 and laying out the future roadmap in the form of an Electronic Payments Vision Document (2009–2012 and 2012–2015. In addition, several guidelines have been laid down to create a modern and easily accessible modern payment system for Indian citizens.
- The **National Payments Corporation of India** (NPCI) was established in 2008 to consolidate multiple retail payment systems throughout the country.
- **The Unique Identification Authority of India** (UIDAI) was set up, with a mandate to issue a 12 digit unique identifier or UID number to every Indian resident. This set the stage for the establishment of a unique national identifier, enabling authentication of the identity of every citizen. This is a logical and imperative building block for financial inclusion.
- The Inter-Ministerial Group's (IMG) framework for delivery of basic financial services using mobiles phones envisages the creation of "**Mobile Linked No Frills Accounts**," which would enable a basic set of transactions via a mobile PIN-based system using "Mobile Banking POS" or through bio-metric based "micro ATMs" of Business Correspondents (BCs)
- The **Business Correspondent (BC) model** has received a quantum push, with retailers and non-banking entities being permitted to work with banks as extensions of their branch counters.
- **ATM access fees** were normalized by the RBI, enabling easier and cheaper access for banked customers across all banks' ATMs. Thereafter, the RBI relaxed its guidelines and allowed White Label ATMs (WLAs) to be set up by non-banking entities to accelerate the spread of the ATM infrastructure.
- The RBI has been focusing on promoting the use of **Prepaid Instruments** through initiatives such as permitting non-banks to issue prepaid cards, adopting a progressive stance on KYC and cash-out, and permitting telcos to launch mobile-linked semi-closed wallets as well as many other schemes.
- The **Direct Benefit Transfer (DBT)** scheme was operationalized by the Government to transfer subsidy and entitlement benefits directly into Aadhaar-linked bank accounts of eligible citizens.
- Large-scale **Electronic Transit and Toll** collection projects have been operationalized at toll roads, organized parking and other emerging urban transit systems, leading to electronic transit payment systems slowly becoming the norm. Large transit payment products (largely contactless cards) are already flourishing across cities, e.g., in the Delhi Metro, the Gurgaon-Delhi toll road, etc.

1 Planning Commission estimates 2012-13

INR4,800 billion

spent towards social welfare schemes

INR369.7 billion

lost to leakages and corruption

Enabling the next phase of growth

Transition of India's payment system has been made possible by the implementation of several thoughtful initiatives, which aim to create a modern and widespread payment system. We believe that some of these initiatives will enable India to respond to challenges associated with moving to a cash-less economy.

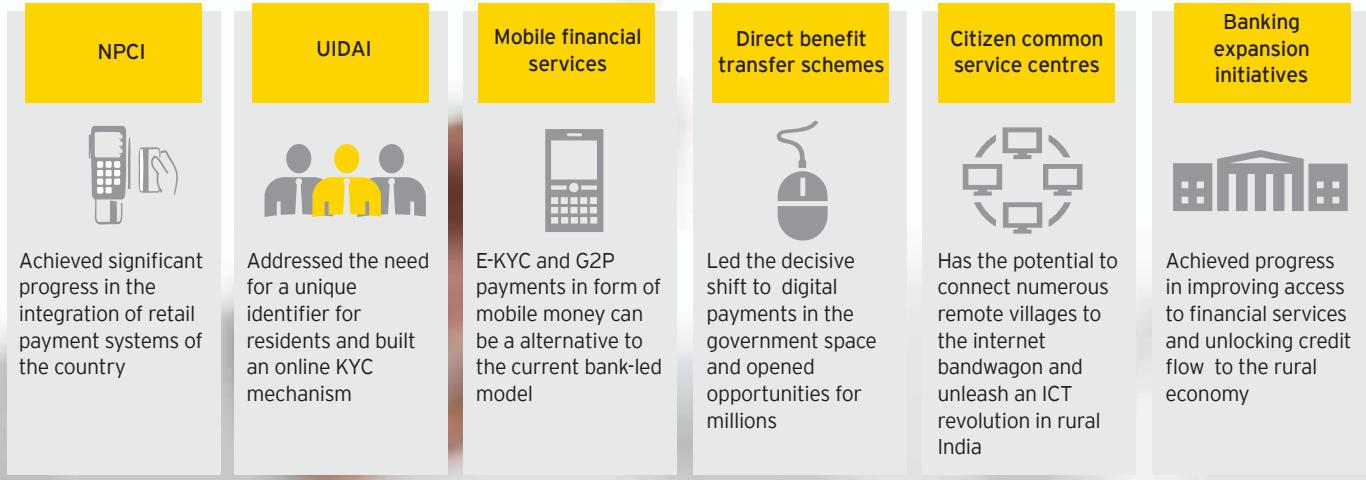
- **NPCI platform:** Set up in 2008, the National Payments Corporation of India (NPCI) was envisaged to function as a hub for all electronic retail payment systems in the country. NPCI has served the mandate well by taking over the operations of the National Financial Switch and by launching several promising and innovative payment platforms such as the RuPay domestic card scheme and switching network; the mobile-enabled micro-transaction switch, the Interbank Mobile Payment Service [IMPS]); the UID number-based Aadhaar Payment Bridge (APB) and the Aadhaar Enabled Payment System (AEPS), which has the potential to solve many operational challenges in large-scale government to person (G2P) payments. In particular, the IMPS and AEPS platforms have the potential to integrate the payment systems of various G2P schemes and enable mobile phones to be used as front-end technology instruments.

The IMPS and AEPS platforms have the potential to integrate the payment systems of various G2P schemes and enable mobile phones to be used as front-end technology instruments.

- **Setting up of UIDAI:** The Unique Identification Authority of India (UIDAI) has led to catalyzing of several financial inclusion initiatives being implemented by the Government by leveraging the UID platform. Lack of an ID has always been the most significant barrier for a large section of Indian residents to have accounts in formal financial institutions and has prevented their access to financial services. This ID platform can now be leveraged to accelerate financial inclusion by using it as a Know your Customer (KYC) to open a bank account and access other financial services. In addition, it also provides a financial address at which G2P benefit payments can be received directly by the beneficiaries. UIDAI is also working actively with stakeholders on several transformative initiatives such as uniform standards for acceptance devices, adoption of an open-system plug and play approach, so that entrepreneurs and start-ups can develop applications in areas such as distribution of food, financial inclusion and "know your customer" services.
- **Mobile-based financial services:** The use of mobiles for G2P payment schemes could be the key mechanism to advance India's goal of financial inclusion. The country ranks second in the world in its use of mobile phones, but more than 70% of its population lives in rural areas and roughly 50% of households are financially excluded. In the last few years, telcos such as Airtel, Tata and Vodafone have launched mobile wallets and also entered partnerships with banks. The Government is also looking closely at the role of telcos by allowing them to offer semi-closed wallets with some restrictions on cash withdrawal initially.

The use of mobiles for G2P payment schemes could be the key mechanism to advance India's goal of financial inclusion.

Figure 1: Foundation pillars for next wave of growth in payments in India



Source: EY analysis

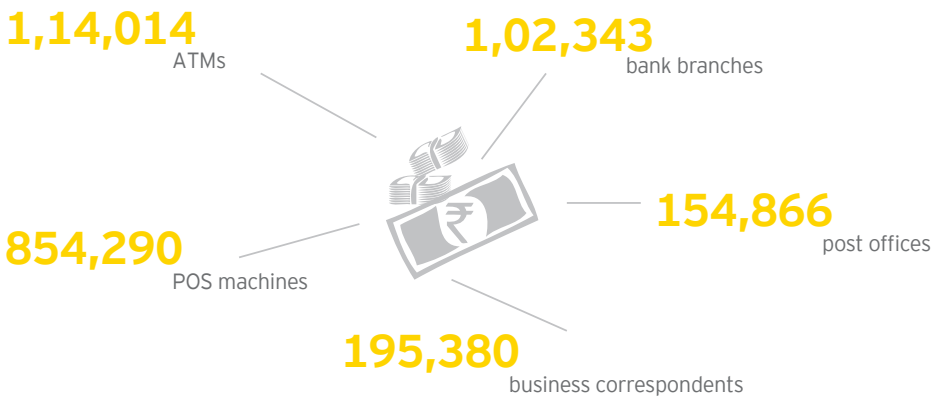
Aadhaar, along with the other accompanying trends, such as rise in digital infrastructure and socio-economic trends such as growing urbanization, rising middle class and rising aspirations has created a staging ground of opportunities in Indian Payments and financial inclusion landscape.

With India's extremely high mobile penetration (898.02 million subscribers on March 2013) [2] and UID numbers now being available as KYC security, micropayments can also be facilitated through the use of mobile phones. Initiatives are being planned to introduce a micro-payment platform to facilitate banking in rural India by enabling "business correspondents" of banks (such as local kirana shop-owners) to conduct instant transactions through low-cost devices that will be linked to banks across the country via mobile phone connection. Such a platform would enable a person, even in rural and unbanked areas (only 5% of Indian villages are estimated to have banks), to instantly deposit or withdraw funds, regardless of the bank associated with a particular BC, as long as their UID number is authenticated. This micropayment platform is just one step away from the full-fledged mobile wallet offered by telcos or other technological providers.

- **Operationalization of DBT for transfer of subsidies:** Transfer of G2P payments or subsidies using the Direct Benefit Transfer (DBT) route can enable the Government to credit subsidies directly into the bank accounts of beneficiaries, thereby eliminating system leakages and bringing efficiency into the payment process. The Government also intends to set up a common subsidy management platform that can be used for any kind of subsidies, for goods as well as cash, using technology-based solutions to reach millions of Indians to help them receive their subsidies on time.
- **Common Service Centre Scheme and NeGP:** The Common Services Centre Scheme under the National e-Governance Plan (NeGP) envisages setting up of 100,000+ IT-enabled access points that will be implemented in the Public-Private Partnership (PPP) mode in all 600,000 villages in India[3]. Common Service Centres (CSCs) have been positioned as front end delivery outlets for delivery of Government and private sector services such as bill payments, financial inclusion and G2C services (Aadhaar, PAN cards, etc.). Already, over 95,000 CSCs, each covering six villages, have been set up (as of September 2012). Over 22 companies have signed up with the Government to operate the centres, with many seeing these centres as conducive platforms for collaboration between the Government, the private sector and not-for-profit organizations.
- **Focus on expanding reach of banking:** The RBI has on numerous occasions stressed on the need for implementation of a judicious mix of traditional branch-based and branchless banking models, to increase the spread of financial inclusion in the country in order to address demand- and supply-side constraints. On the supply side, it has encouraged non-banking entities to partner with banks to set up the banking value chain, e.g., as technology providers, managed service providers for services such as ATMs, banking agents, etc. It has focused on ensuring that a high level of interoperability, standardization, infrastructure- sharing and consolidation is achieved in the banking industry along with innovations in product and delivery channels. On the demand side, several initiatives are being implemented, e.g., simplification of KYC norms, implementation of Aadhaar-based e-KYC and advisory to banks to provision a minimum of four basic banking products such as "No-frills" accounts, remittance or KCC products. These are expected to help in expanding the reach of banking and create easy access to banks for all citizens. Several co-ordinated attempts on productive collaboration between policymakers, regulators, the Government, technology solution providers and people are being made in this regard.

2 As per TRAI data

3 *National e-Governance plan website*



Only one payment point for around every
1200 citizens

The role of Government

The battle against cash is an important one in the larger war against financial exclusion in India. The payment infrastructure in the country comprises 1,02,343 bank branches, 154,866 post offices, 195,380 business correspondents, 1,14,014 ATMs and 854,290 POS machines. This implies that there is one payment point for around every 1200 citizens[4]. Add the rural-urban divide and the various regional disparities, and this situation seems even worse.

The important elements of a ubiquitous payment infrastructure include a national network of cash-in/cash-out points, universal data connectivity, a national switch and payment platform that banks and non-banks can use for clearing, standardization of user interfaces for customers to adopt and an ecosystem of financial product providers and billers that utilize this platform to offer a wide range of services. What are the steps the Government and the regulator will need to take to bring India's payment infrastructure on par with other emerging economies such as Brazil and China?

We have five recommendations in this regard:

1. Easing process of customer acquisition

KYC guidelines can be further simplified, especially for prepaid payment instruments, while maintaining prudential control over sensitive services such as cash-out and money transfer. Some of our recommendations to make e-payments more accessible by using prepaid payment instruments include:

- Promote the use of e-KYC for all prepaid instruments, using the Aadhaar infrastructure to eliminate paper-based KYC.
- KYC requirements can be further relaxed or eliminated for all prepaid instruments up to a maximum of INR 50,000, with the only restrictions being on cash withdrawal and forex transactions.
- Issuance of prepaid payment instruments can be brought under the financial inclusion targets of banks to accelerate the progress of digital payment products.

2. Expanding network of cashless points

Automating government payments and directing these into accounts is not enough. Low-income individuals will not use their accounts (other than to withdraw their benefits in full) if they have to travel long distances and wait in long queues to access this. The regulator has responded by reasonably relaxing its BC guidelines and enabling for-profit companies with extensive distribution networks to partner with banks. However, the number of BC points is still very few. Availability of cash-in/cash-out options need to rapidly expand beyond the ambit of formal banking channels. Some areas that need the immediate attention of the Government and the regulator include the following:

- Norms for allowing cash-out facility at a telco retailer outlet for money loaded on a mobile semi-closed prepaid wallet needs to be reviewed. Currently, the regulator does not allow this and only permits cash-out if a telco is functioning as the BC agent of a bank. If liberalized, this norm could help to traction huge volumes in person-to-person (P2P) transfers. The advent of Aadhaar-based e-KYC could mitigate risks in this area.
- The Government can play a lead role in accelerating its efforts to roll out the USSD-based Interbank Mobile Payments Service (IMPS). Currently, there is an impasse between telcos and NPCI on the best fit operating model and pricing of services. The Ministry of Telecommunications, banking regulators and other stakeholders need to come together to resolve this issue. This initiative has a huge potential in growing m-banking, and thereby enabling it to be a viable alternative to the traditional branch and ATM-based banking model.

4 RBI, Post Office statistics, as on March 2013

3. Dis-incentivizing cash, accelerating acceptance

Certain restrictive practices associated with everyday commercial transactions are slowing down India's transition to a fully developed electronic payments ecosystem. For example, while making e-payment for booking a ticket on an IRCTC portal or for making card payment at a fuel station, the consumer has to pay an additional surcharge charge, which is roughly 2.5% of the transaction amount. However, consumers do not have to bear this additional cost if they pay in cash. For e-payments to truly penetrate our everyday lives, policies will have to be designed to incentivize e-payments and dis-incentivise cash. Certain steps can be immediately taken by the Government in this regard:

- Electronic payments can be enabled by providing incentives and implementing supportive regulation by providing tax breaks to merchants on transactions paid for through certain payments instruments including cards and mobile to increase acceptance of e-payment and drive voluntary acceptance of the POS infrastructure. Simultaneously, certain dis-incentives or increasing the cost for doing business in cash, by way of taxes, etc., can be imposed.
- Payment made by using non-cash modes can be mandated for many sectors, where the Government is the only recipient, e.g., in tax payments, toll and transit collections, bill payments, etc.
- Consumer cheques issued and received by Governments can be phased out.
- Government can adopt e-invoicing and payments.
- Enablers for SMEs to adopt B2B e-invoicing and digital payments can be put in place.
- The insurance industry can phase out cheque payments to consumers.
- The capabilities of existing clearing and settlement infrastructure can be improved.
- Standardization and interoperability can be implemented to increase acceptance of electronic payment.

4. Promoting awareness and education

The Government needs to support an educational campaign that is designed to provide information about electronic payments to consumers, merchants and other stakeholders. A large and sustained campaign need to be undertaken throughout the country by all the stakeholders – the Government, regulators and industry to achieve the following:

- Availability of payment instruments, their convenience and security, and ease of access for all consumer segments and benefits provided as compared to cash transactions.
- Opening and strengthening district- and block-level financial literacy centers that will be entrusted with activities such as organizing workshops at village events, schools, colleges, street plays, etc.
- Maximizing outreach of literacy campaigns using mass media vehicles and vernacular messaging.

5. Promoting reasonable fees while ensuring freedom for market players

The public stance of the Government and the regulator has always reflected their policy of ensuring affordable payment services for all consumer segments, but at the same time has stressed that they do not want to infringe on the pricing freedom of market players. However, market players are concerned about certain policies of the regulator, for instance, in the area of capping debit card interchange fees or acceptable revenue streams for **White Label ATM** (WLA) players. The market perceives that steps such as the above lead to lack of confidence among existing and aspiring market players, and discourage them from expanding their payment infrastructure and improving accessibility for common citizens. Certain steps can be taken by the Government and the regulator to allay such apprehensions:

- Reassure the market that they will only intervene to protect genuine consumer-related interests and provide adequate support through enabling regulation
- Review policies in certain areas to ensure the viability of the business models of payment service providers. For instance, examine the possibility of permitting WLA operators to charge consumers for provision of ATM services.
- Drive affordability for consumers and merchants through efficiency measures including shared infrastructure, smart technology, products, etc., rather than prescribe fees
- Shape their policies and regulations by adopting a micro-targeting approach instead of a one-size-fits-all one. For instance, China's Union Pay has a tiered interchange structure, where market players have full autonomy of pricing in certain merchant categories such as in hotels and jewellery, but are advised to charge lower or no interchange in other merchant categories such as school fees and utility payments

The Government needs to reassure the market that they will only intervene to protect genuine consumer-related interests and provide adequate support through enabling regulation

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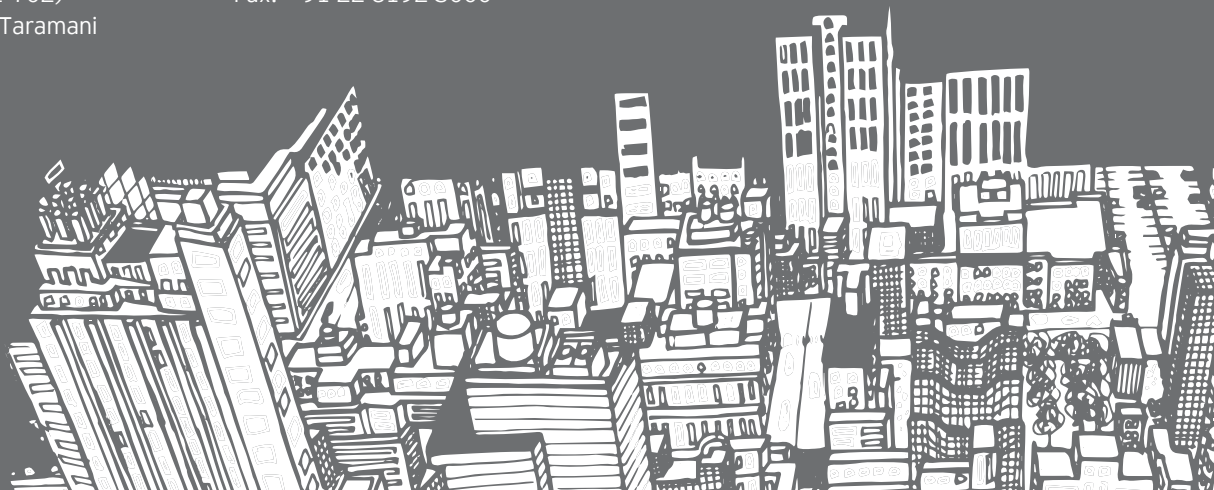

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