

NPCI: Driving digital payment revolution

We met Mr. Dilip Asbe, Chief Operating Officer (COO) at National Payments Corporation of India (NPCI), and delved deeper into NPCI's role in emerging digital payment industry in India. NPCI represents the umbrella organization for all retail payments system in India. It is creating infrastructure which rests on the principle of large scale and high volumes, resulting in payment services at a fraction of the present cost structure. NPCI operates on an asset-light model and has just ~800 employees.

NPCI has launched multiple products; success has been impressive: In past 6 years, NPCI has grown by ~10x from handling 2 mn transactions/ day to >22 mn transactions/day through various products. The objective is to reach 100 mn transactions/ day. RuPay (operational) and just-launched Unified Payments Interface (UPI) are its flagship products.

- ♦ **RuPay** had 38% market share in May 2016 (267 mn debit cards) within four years of operations. RuPay based e-commerce transactions have grown ~20% in volumes / ~22% in value MoM, driven by its cost effectiveness. RuPay's proliferation is also facilitated by benefits under the Pradhan Mantri Jan-Dhan Yojana (Jan-Dhan Yojana), which envisages universal access to banking facilities. The beneficiaries would get RuPay Debit card with inbuilt accident insurance cover of Rs 100,000. Going forward, the launch of credit card in December 2016, brand awareness through marketing in urban areas and partnership with 8 payment banks and 10 small finance banks would push RuPay's market share up.

Exhibit 1: RuPay's usage across ATMs, PoS and online

Month	RuPay Cards in force (mn)	Txns POS (mn)	Txns ECOM (mn)	Txns ATM (mn)	Amount POS (Rs mn)	Amount ECOM (Rs mn)	Amount ATM (Rs mn)
Mar-15	153	0.89	0.2	30.7	1,709	134	65,470
Mar-16	263	3.49	2.32	74.7	4,918	1,128	160,480
% change YoY	72%	292%	1060%	143%	188%	742%	145%

Source: NPCI

- ♦ **UPI, to be launched by the end of July, is a next-generation payment system and is unique in many aspects:** (1) It allows full interoperability between multiple identifiers such as Aadhaar number, mobile number, and new virtual payment addresses, (2) payments can be initiated both by the sender (payer) and receiver (payee), (3) follows a one-click 2-factor authentication, (4) ability to integrate accounts/wallets with different banks and Prepaid Payment Instruments (PPIs) in a single mobile app and (5) built on IMPS infrastructure and transactions would be processed instantly 24x7. UPI leverages smartphone adoption to perform instant push and pull transactions seamlessly.

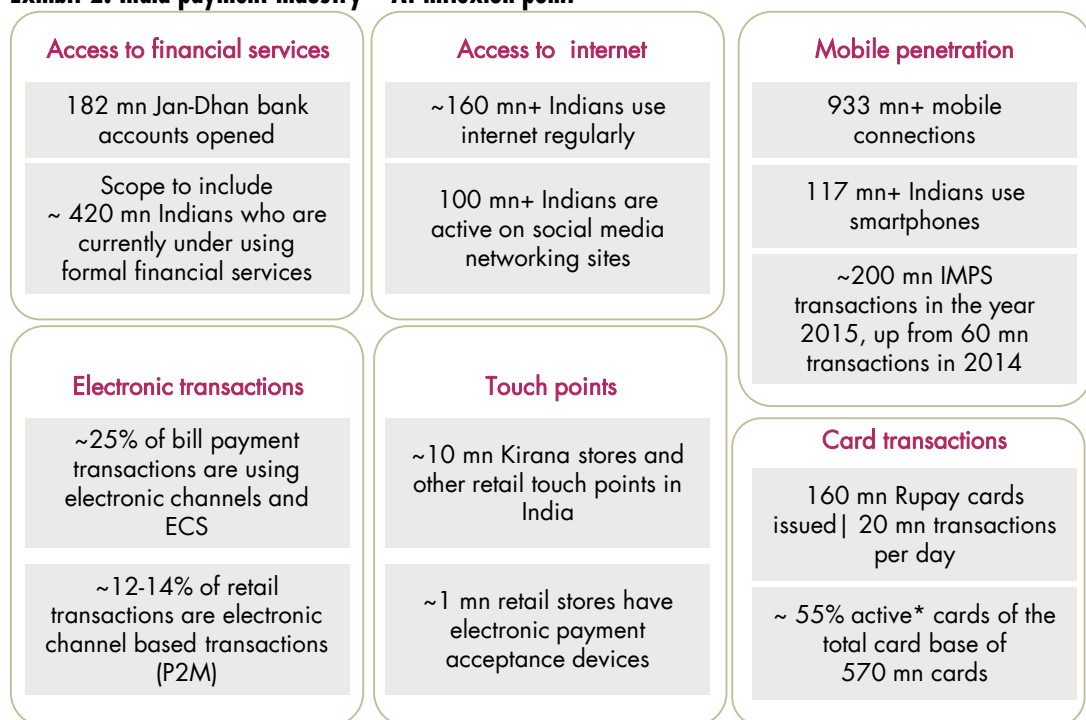
Mr. Asbe shared few challenges on cash digitization: (1) tax incidence (3% vs. nil for cash usage) and (2) lower Point of Sale (PoS) at ~1.3 mn out of 35 mn SME base/ 14 mn merchants.

NPCI: Key player in payment industry

NPCI represents the umbrella organization for all retail payments system in India. It was set up with the guidance and support of the Reserve Bank of India (RBI) and Indian Banks' Association. NPCI received the Certificate of Commencement of Business in April 2009. NPCI has 10 promoter banks namely, State Bank of India, Punjab National Bank, Canara Bank, Bank of Baroda, Union Bank of India, Bank of India, ICICI Bank, HDFC Bank, Citibank and HSBC.

NPCI aims to create infrastructure which rests on the principle of large scale and high volumes resulting in payment services at a fraction of the present cost structure. NPCI operates on an asset-light business strategy in the payment industry in India. The industry is at an inflexion point led by fast-changing consumer behavior, government/regulatory initiatives, ever-increasing entrepreneurial activity and strong investor appetite. This synergy is unleashing tremendous innovation and would transform the financial services/ payment sector in India.

Exhibit 2: India payment industry – At inflexion point



India moving towards digital payments

By 2020:

- ◆ ~40% of merchants expected to have electronic payment acceptance devices like PoS, NFC reader
- ◆ ~50% of total internet population expected to be constituted by rural residents
- ◆ ~70 –80% Indians will use their mobiles to access internet-enabled services
- ◆ ~50% of the bill payment transactions will be using electronic channels

Source: PwC Analysis; * 1 transaction per month

India payment industry: Huge market size, multiple enablers ...

- ♦ **India is a cash dependent economy:** Amount of cash in circulation in India is very high, estimated at ~18% of the country's GDP (www.pwc.in), making India one of the most cash-dependent countries in the world. It is estimated that the RBI and commercial banks in India spend a total of Rs 2,100 bn in currency operation costs annually (source: Industry). Also, the externalities brought about by cash dominance pose significant concerns, such as the presence of large unorganized sectors, black money, persistent exclusion of millions from formal financial services, loss of revenue on account of evasion of taxes and poor transmission of monetary policy measures taken by the RBI.

Further, the Indian retail market is still largely (92%) unorganized, as millions of small and fragmented retailers lack technology and are plagued with supply chain efficiencies.

Currency manufacturing costs ~Rs 40 bn per annum to the RBI.

- ♦ **Structural growth drivers** – Smartphone penetration, increasing awareness about digital payments, preference for hassle-free transactions and secured payment solutions are driving growth for digital payments.
- ♦ **Steady growth in debit/ credit cards but penetration is still low** – The card payment industry has been growing steadily over the past few years. Card transactions, both by debit and credit cards, are on an upward trajectory. Debit card transactions volumes have grown at 16% CAGR over the past 2 years while credit card payments have grown at a CAGR of 25%.

Exhibit 3: Debit and credit card transactions

	Debit Card (mn)	Credit Card (mn)
FY 2012-13 (Sep-Mar)	3,575	243
FY 2013-14	6,904	503
FY 2014-15	7,804	619
FY 2015-16	9,263	790

Source: NPCI

- ♦ Issuance of debit cards has been growing consistently for the past 5 years. Over FY11-15, debit cards posted 20.7% CAGR. Last year saw a huge surge in opening of new bank accounts and issuance of debit cards due to push by the central government under Jan-Dhan Yojana, which grew debit card base by more than 40% in 2014-15.
- ♦ Credit card industry in India also saw greater acceptance among consumers. According to Worldline India Card Payment Report 2014-15, credit card base grew at 9.8% last year.
- ♦ Public sector banks now account for 83% of debit cards in circulation, while private banks account for 57% of credit cards.

Exhibit 4: Growth in card issuance

Category of bank	No. of debit cards (in mn) as on			No. of credit cards (in mn) as on		
	Oct'13 (% of total)	Oct'14 (% of total)	Oct'15 (% of total)	Oct'13 (% of total)	Oct'14 (% of total)	Oct'15 (% of total)
Public sector banks	299.31 (79.99)	356.94 (80.83)	513.26 (83.41)	3.68 (19.83)	3.95 (19.80)	4.74 (20.71)
Private sector banks	71.50 (19.11)	81.49 (18.45)	99.02 (16.09)	10.05 (54.08)	11.31 (56.67)	13.42 (58.64)
Foreign banks	3.37 (0.90)	3.17 (0.72)	3.07 (0.50)	4.84 (26.09)	4.69 (23.53)	4.73 (20.65)
Total	374.18	441.6	615.35	18.57	19.95	22.88

Source: Concept Paper on Card Acceptance , RBI

Note: figures in brackets indicate percentage share in total cards issued

Exhibit 5: Growth in card acceptance infrastructure

Category of bank	No. of ATMs as on			No. of PoS machine as on		
	Oct'13 (% of total)	Oct'14 (% of total)	Oct'15 (% of total)	Oct'13 (% of Total)	Oct'14 (% of total)	Oct'15 (% of total)
Public sector banks	85,748 (64.32)	1,22,324 (70.42)	1,36,682 (71.61)	1,76,349 (18.30)	2,55,649 (23.00)	4,06,373 (32.85)
Private sector banks	46,334 (34.76)	50,229 (28.92)	53,108 (27.83)	7,32,443 (76.02)	8,02,236 (72.17)	7,81,763 (63.20)
Foreign banks	1,231 (0.92)	1,144 (0.66)	1,069 (0.56)	54,699 (5.62)	53,691 (4.83)	48,797 (3.94)
Total	133,313	173,697	190,859	963,491	1,111,576	1,236,933

Source: Concept Paper on Card Acceptance , RBI

Note: figures in brackets indicate percentage share in total cards issued

Exhibit 6: Debit card usage

Debit card usage	2012-13 (April - March)		2013-14 (April - March)		2014-15 (April - March)	
	Volume (mn)	Value (bn)	Volume (mn)	Value (bn)	Volume (mn)	Value (bn)
Debit card usage at ATMs	5530.16	16650.08	6088.02	19634.54	6996.08	22278.64
Debit card usage at ATMs (as % of total debit card usage)	92.18	95.73	90.77	95.37	89.65	94.83
Debit card usage at PoS	469.05	743.36	619.08	954.09	808.06	1213.42
Debit card usage at PoS (as % of total debit card usage)	7.82	4.27	9.23	4.63	10.35	5.17

Source: Concept Paper on Card Acceptance , RBI

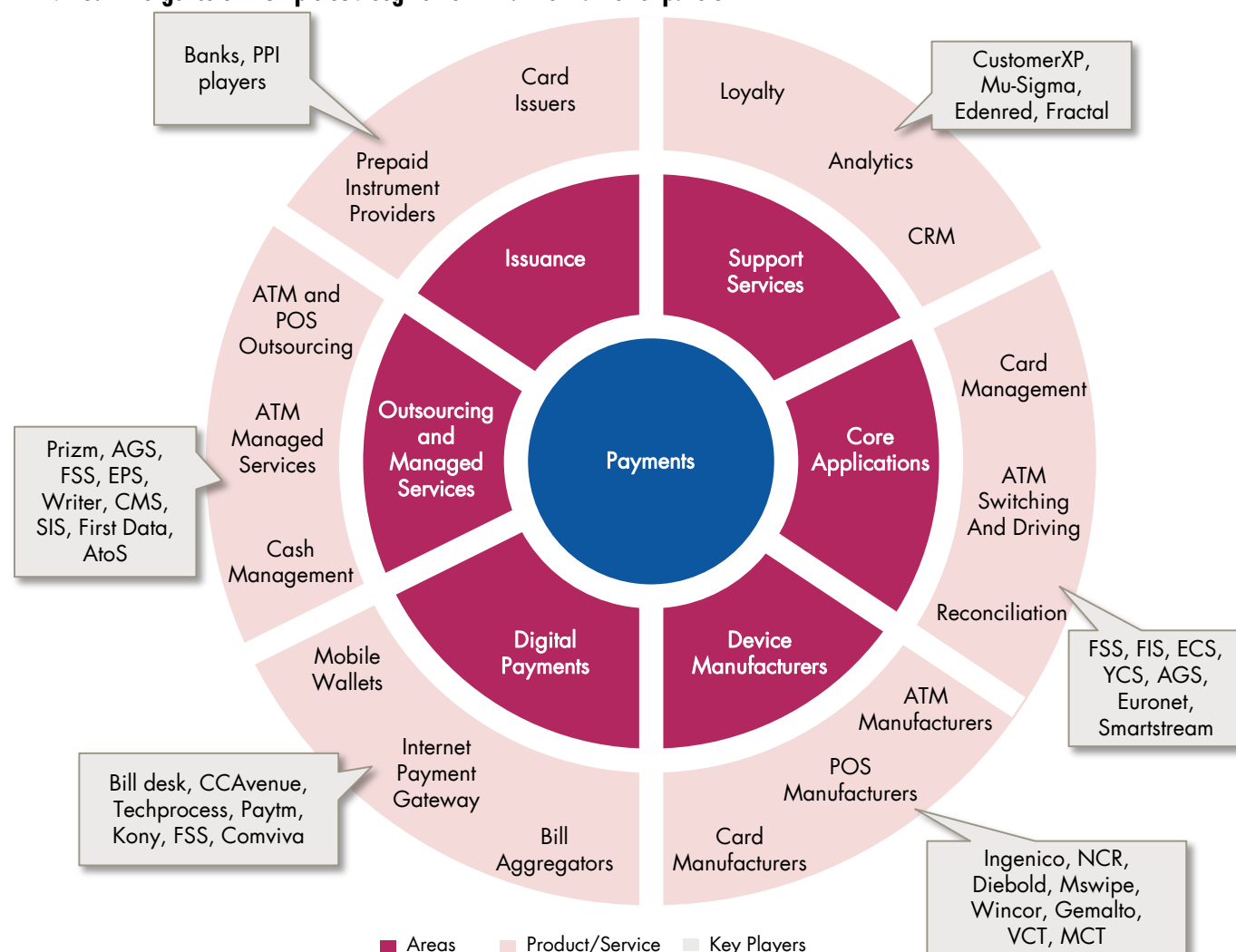
Exhibit 7: Credit card usage

Credit card usage	2012-13		2013-14		2014-15	
	Volume (mn)	Value (bn)	Volume (mn)	Value (bn)	Volume (mn)	Value (bn)
Credit card usage at ATMs	2.52	14.42	2.96	16.87	4.3	23.47
Credit card usage at ATMs (as % to total credit card usage)	0.63	1.16	0.58	1.08	0.69	1.22
Credit card usage at PoS	396.61	1229.51	509.08	1539.85	615.13	1899.15
Credit card usage at PoS (as % to total credit card usage)	99.37	98.84	99.42	98.92	99.31	98.78

Source: Concept Paper on Card Acceptance , RBI

- ♦ **Emergence of multiple sub-segments will drive market expansion:** As per Ken Research, India's payment market is expected to reach ~Rs 8.173 bn by 2019. The payment industry is composed of various segments – mobile wallet, mobile banking, mobile point of sale (MPOS), bill payments and online payment gateway – with each segment comprising a number of players. Each of these segments is being dominated by different players; i.e. mobile banking is dominated by banking institutions, mobile wallets by partnerships between financial institutes and mobile operators and MPOS by new players such as Ezetap, Mswipe and iKaaz.

Exhibit 8: Emergence of multiple sub-segments will drive market expansion



Source: PwC Analysis

- ♦ **Telecom operators' reach and distribution make them a formidable segment:** As per a CRISIL research report "Payments Bank Tailor-Made for Telcos", the Rs 800-900 bn domestic remittance market is expected to grow at 11-13% CAGR in the next few years based on an assessment of remittances to low-income migrant population (Source: Media). Moreover, telecom operators have a larger reach and distribution to the bottom of the pyramid. This presents a good opportunity for telecom players and payment system operators.

... and spate of enabling regulatory and financial inclusion initiatives

The 'JAM Trinity', which comprises Jan Dhan, Aadhaar and Mobile, holds the key to one of the biggest reforms aimed at transforming India. It starts from opening of a bank account under Jan-Dhan followed by its integration with an Aadhaar number, which in turn is connected to a mobile number.

To accelerate financial inclusion in India, the JAM Trinity works across different sectors and will be the backbone for this government initiative. It will provide a boost both to traditional banks and telecoms as well as new entrants like payments banks and Fintech startups.

Large-scale enrolment under the Jan-Dhan Yojana and Pradhan Mantri Suraksha Bima Yojana (PMSBY) has been an enabler. The Jan-Dhan Yojana plans to ensure there are at least two bank accounts for every household.

The sparse banking network cannot be expected to accommodate the ever-growing demand and with the passage of the Payment and Settlement Systems (PSS Act) in 2007, a new class of regulated entities got created to target this niche but growing opportunity. By licensing telecom companies, NBFCs, Business Correspondents (BCs), PPIs and microfinance companies to become banks, India has joined the short list of countries that have tried to put in place a proactive framework to encourage innovation in payments and banking.

There has been in-principle grant of licenses to 11 payment banks (8 after withdrawal by 3 applicants) and 10 small finance banks in August–September 2015. As the new licensees roll out plans to go to the market (expected by December 16), there are equally interesting developments in the wider payments, transactions and small finance ecosystem. Payments banks will provide banking access to the bottom of the pyramid enabling them to perform domestic remittance to the remotest part of the country. It will drive cashless transaction in geographically inaccessible and sparsely populated parts of the country.

In 2012, the RBI in an attempt to encourage all categories and types of merchants to deploy the card acceptance infrastructure decided to cap the Merchant Discount Rate (MDR) on debit card transaction to 0.75% and 1% for transaction up to and over Rs 2,000, respectively. Following this, the RBI has further proposed to rationalize MDR in the recent budget and policy announcements. Merchants have often refrained from adopting digital acceptance infrastructure as the cost of transacting in most cases has outweighed the benefits. However, the rationalization of MDR is aimed at making the acceptance of digital payments more appealing for merchants, as it would enable them to retain a higher percentage of profits from said transactions.

NPCI, multiple products; RuPay and UPI being flagship offerings

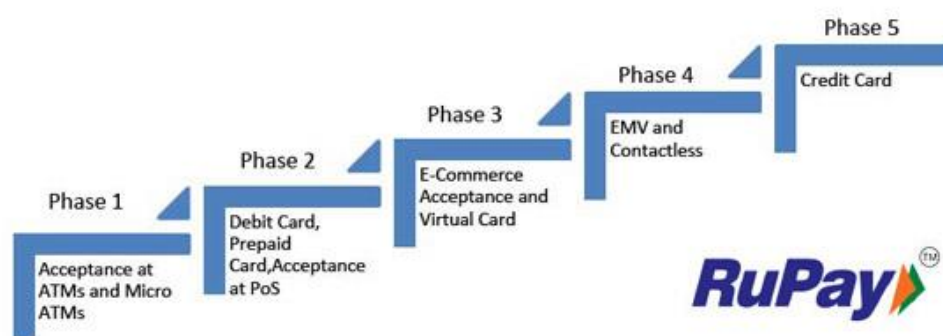
NPCI is playing a pivotal role in evolving digital payment industry in India through multiple products, including the flagship products – RuPay and UPI.

RuPay

RuPay is NPCI's card payment network which is accepted at ATMs, PoS machines and e-commerce sites. RuPay offers lower charges than its global competitors like Visa and MasterCard.

Key benefits of RuPay include lower cost and affordability, and penetration in the untapped/unexplored consumer segment. RuPay card is uniquely positioned to offer complete inter-operability between various payments channels and products. NPCI currently offers varied solutions across platforms including ATMs, mobile technology, cheques *et al* and is extremely well placed in nurturing RuPay cards across these platforms.

Exhibit 9: Ramping up presence across use categories



Source: NPCI

Expanding global footprint via tie-ups

NPCI has formed a global alliance with Discover Financial Services (DFS) in March 2012. This marks RuPay's foray into the premium Indian payment card scheme with RuPay Global Card. This alliance provides RuPay access to Discover's global acceptance footprint. It also enables acceptance of Discover & Diners cards at over 200,000 ATMs and over 500,000 merchants in India.

In FY17, NPCI plans to further expand its network through tie-ups with Japan-based JCB International and China Union Pay.

Riding the Jan-Dhan Yojana wave

The Jan-Dhan Yojana is a national mission on financial inclusion encompassing an integrated approach to bring about comprehensive financial inclusion of all the households in the country. The plan envisages universal access to banking facilities with at least one basic banking account for every household, financial literacy, access to credit, insurance and pension facility. In addition, **the beneficiaries would get RuPay Debit card having inbuilt accident insurance cover of Rs100,000.**

Exhibit 10: Riding the Jan-Dhan Yojana wave

	Total accounts opened (mn)	No. of RuPay cards (mn)	Balance in accounts (Rs bn)
Public sector banks	173.70	146.0	306.3
Regional Rural Banks	39.30	27.8	67.2
Private banks	8.20	7.7	14.3
Total	221.20	181.50	387.79

Source: Jan-Dhan Yojana (data as on 15 June 2016)

NPCI is expected to launch RuPay Credit Card in December 2016.

Unified Payments Interface /UPI

UPI is a simple payment tool created by NPCI that is based on IMPS system. UPI can operate on a smart phone and can be thought of like an email ID for money. It lets you transfer money immediately and works 24x7.

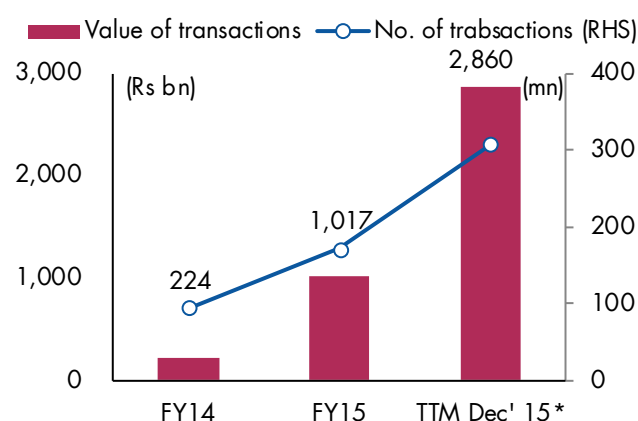
UPI is a unique payment solution as the recipient is now empowered to initiate the payment request from a smartphone. It facilitates virtual address as a payment identifier for sending and collecting money and works on single click 2 factor authentications. It also provides an option for scheduling push and pull transactions for various purposes like sharing bills among peers. One can use UPI app instead of paying cash on delivery on receipt of product from online shopping websites and can perform miscellaneous expenses like paying utility bills, over the counter payments, barcode (scan and pay) based payments, donations, school fees and other such unique and innovative use cases. The interface is the advanced version of NPCI's IMPS, which is a 24*7*365 funds transfer service. UPI will offer a facility to identify a bank customer with an email-like virtual address. It will allow a customer to have multiple virtual addresses for multiple accounts in various banks. To ensure privacy of customer's data, there is no account number mapper anywhere other than the customer's own bank. This allows the customer to freely share the financial address with others. A customer can also decide to use the mobile number as the name instead of the short name for the virtual address.

Exhibit 11: How is UPI different? It is a superior payment solution as it allows:

Interoperability	<ul style="list-style-type: none"> ♦ Interoperability across payment channels, devices, and institutions for inclusive participation ♦ Allows full interoperability between multiple identifiers such as Aadhaar number, mobile number, and new virtual payment addresses ♦ Would allow money to be transferred instantly across bank accounts / wallets in entire system
Push & pull payments	<p>Payments can be both sender (payer) and receiver (payee) initiated</p> <ul style="list-style-type: none"> ♦ Pay request: A pay request is a transaction where the initiating customer is pushing funds to the intended beneficiary ♦ Collect request: A collect request is a transaction where the customer is pulling funds from the intended remitter by using virtual address
1 Click 2FA	<p>UPI will follow a one click 2 factor authentication</p> <ul style="list-style-type: none"> ♦ When a transfer is initiated using a smart phone, the device fingerprint (IMEI number for the device or any technical details which are unique to the device) will in itself be the first factor for authentication ♦ Second factor will be a PIN number which will have to be keyed in
Single identifier	<ul style="list-style-type: none"> ♦ Ability to integrate accounts/wallets with different banks and Prepaid Payment Instruments (PPIs) in a single mobile app ♦ Enables the user to carry out all his payment transactions across multiple accounts and thus provides a single interface for all payments
Easy instant payments	<p>UPI is built on IMPS infrastructure and transactions would be processed instantly 24x7</p>

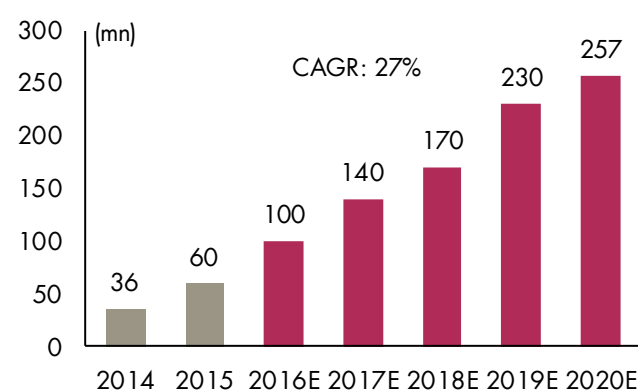
India's evolving smartphone and data consumption trends would support the adoption of mobile banking and mobile payment technologies like UPI

Exhibit 12: Growth in mobile-based transactions



Source: RBI

Exhibit 13: Mobile banking users to rise 27% CAGR FY16-20



Source: KPMG

UPI will not end mobile wallets, net banking, payment banks ... not yet!

- ♦ UPI will enable efficient payment transfers, but only that in its current form
- ♦ Wallets and payment banks will survive because of value-added distribution services, cash-backs and other customer-retention schemes
- ♦ Investment aggregator services provided by payment banks could also be unique to them

National Financial Switch (NFS)

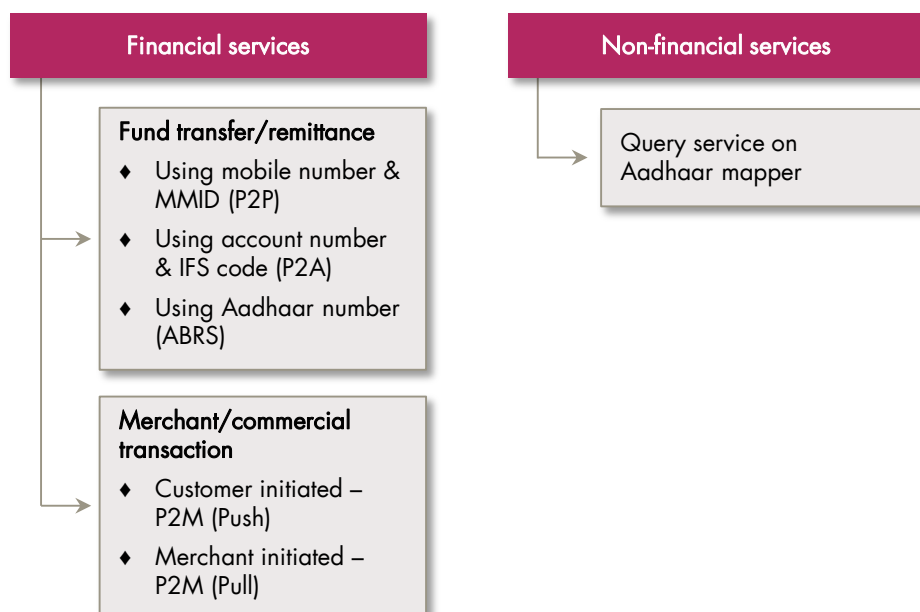
NFS is the country's largest network of shared ATMs, which connects about 224,000 ATMs across 646 members including banks and White Label ATM Operators (WALOs) across the country. NFS provides the foundation for NPCI's innovations in payments.

IMPS

IMPS offers instant 24X7 interbank electronic fund transfer service through mobile phones. It allows transfer of money instantly within banks across India through mobile, internet and ATMs. This provides added convenience vis-à-vis NEFT, which is not immediate (transactions are processed in batches) and is available only during RTGS hours. It enables person-to-person (P2P) money transfer with minimal details required – mobile number and Mobile Money Identifier (MMID) of the recipient.

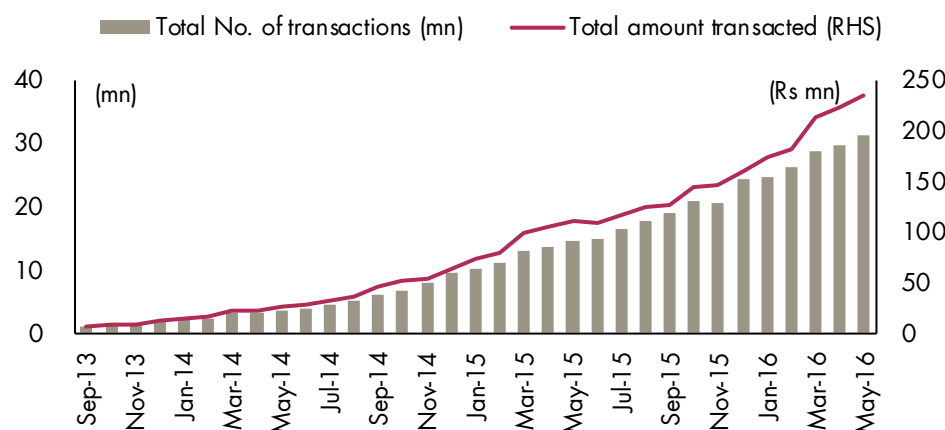
This facility is provided by NPCI through its existing NFS switch. There are currently 169 members (banks and prepaid payment instrument issuers) on the platform.

Exhibit 14: IMPS offerings



Source: NPCI

Exhibit 15: Growth in IMPS



Source: NPCI, Axis Capital

*99# service for mobile banking without internet

One of the innovative payment service launched by NPCI includes *99# service, which was launched to leverage mobile banking and the need for immediate low value remittances which will help in expanding financial inclusion.

Banking customers can avail this service by dialing *99# (a common number across all Telecom Service Providers [TSPs]) on their mobile phone and transact through an interactive menu displayed on the mobile screen. Key services offered under *99# service include, interbank account to account fund transfer, balance enquiry, mini statement besides host of other services. *99# service is currently offered by 51 banks and all GSM service providers and can be accessed in 12 different languages including Hindi and English. It is a common technology platform developed by NPCI which allows the banks and TSPs to seamlessly integrate with each other to provide banking services to the customers at large over the mobile phones.

Key features

- ♦ Works without internet – uses voice connectivity
- ♦ Round-the-clock availability (works even on holidays)
- ♦ Accessible through a common code *99# across all TSPs
- ♦ Works across all GSM service providers and mobile handsets
- ♦ Additional channel for banking and key catalyst for financial inclusion
- ♦ Service also offered through BC Micro ATMs to serve the rural populace

National Automated Clearing House (NACH)

NPCI has implemented NACH for banks, financial institutions, corporates and government. It is a web-based solution to facilitate interbank, high volume, electronic transactions which are repetitive and periodic. NACH system can be used for making bulk transactions towards distribution of subsidies, dividends, interest, salary, pension etc. as well as for bulk transactions towards collection of payments pertaining to telephone, electricity, water, loans, investments in mutual funds, insurance premium etc.

No. of MMIDs issued has grown from 53 mn in Sep 2013 to ~134 mn in 2016

The service is currently live with 51 banks in 12 languages (English + 11 Indian languages) on 11 telecom operators

With the implementation of NACH system, NPCI intends to provide a single set of rules (operating and business), open standards and best industry practices for electronic transactions which are common across all the participants, service providers and users etc.

NACH's Aadhaar Payment Bridge (APB) system has been helping the government in making the Direct Benefit Transfer scheme a success. APB system has been successfully channelizing government subsidies and benefits to intended beneficiaries using Aadhaar numbers. The APB System links the government departments and their sponsor banks on one side and beneficiary banks and beneficiary on the other side.

Cheque Truncation System (CTS)

Cheque truncation is the process in which the physical movement of cheque is curtailed or eliminated, where one party in the chain truncates the cheque and converts it to an image at the presenting bank level. Prior to CTS clearing, instruments used to get settled in MICR clearing where settlement period would range between T+2 and T+10. CTS has cut this down to T+1 settlement.

Exhibit 16: Benefits of CTS

Customer service	Operational benefit	Commercial benefit
<ul style="list-style-type: none"> Extended cut off time for acceptance of customer cheques by banks Easy retrieval of information Reduced timelines for clearing 	<ul style="list-style-type: none"> MICR amount encoding not required Reconciliation difference eliminated – MICR and image data travel together No cheques being lost/tampered/pilfered No risk of any manipulation of data and image during transit CTS 2010 standards leading to enhanced security and automation 	<ul style="list-style-type: none"> Cost involved in paper movement eliminated Grid implementation allowing better liquidity management for banks

Source: NPCI

Aadhaar Enabled Payment System (AEPS)

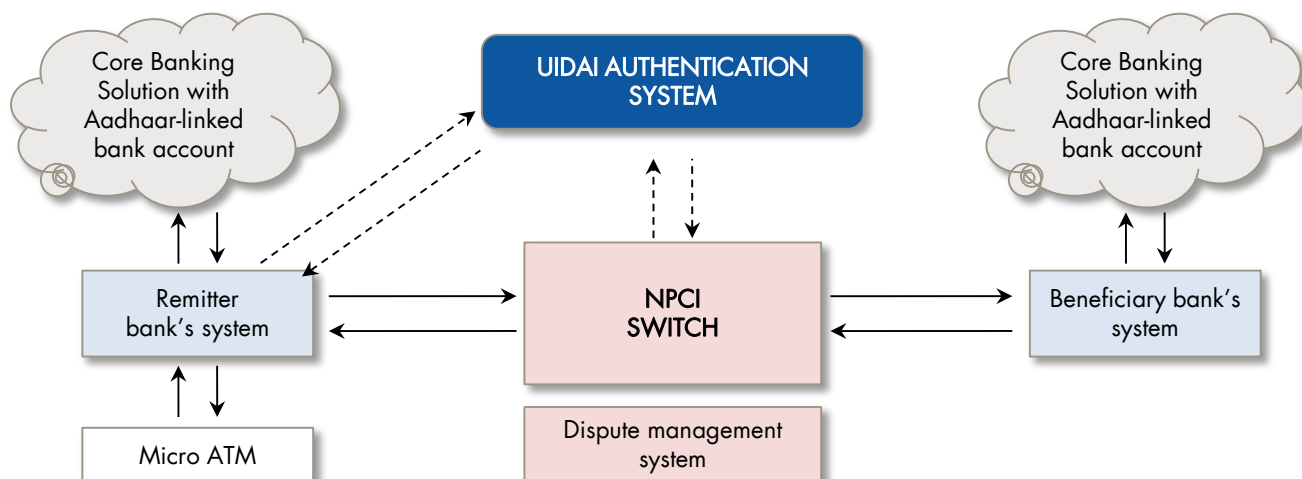
AEPS is a bank led model which allows online interoperable financial inclusion transaction at PoS (Micro ATM) through the Business Correspondent (BC) of any bank using the Aadhaar authentication. Services offered on AEPS include:

- Balance enquiry
- Cash withdrawal
- Cash deposit
- Aadhaar to Aadhaar fund transfer
- Gateway authentication services

To transact on the AEPS system, the customer requires:

- IIN (Identifying the Bank to which the customer is associated)
- Aadhaar number
- Fingerprint captured during enrollment

Exhibit 17: AEPS architecture



Source: NPCI

Aadhaar Payment Bridge System (APBS)

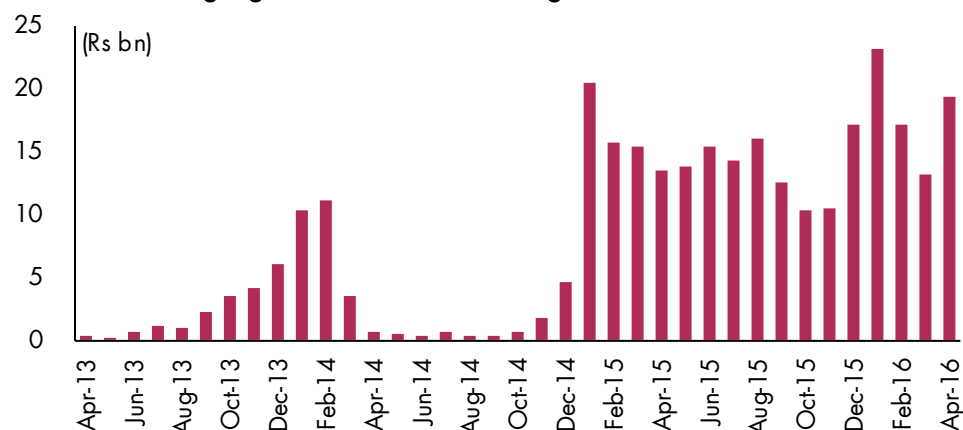
The Aadhaar Payment Bridge System is a unique payment system which uses Aadhaar number as a central key for electronically channelizing the government subsidies and benefits in the Aadhaar Enabled Bank Accounts (AEBA) of the intended beneficiaries.

It is used by government departments and agencies for the transfer of benefits/subsidies under Direct Benefit Transfer scheme. The implementation of APBS has also led to the digitization of a large number of retail payment transactions which were predominantly either in cash or cheque.

Salient features of APBS

- ♦ Eliminates inordinate delays, multiple channels and paper-work involved in the existing system
- ♦ Transfers benefits and subsidies in a seamless and timely manner and directly into the Aadhaar Enabled Bank Account
- ♦ In case of change in bank account, customer is not required to convey the bank account details or change in bank details to the government department or agency
- ♦ Customer not required to open multiple bank accounts for receiving benefits and subsidies of various social welfare schemes – customer just needs to open one account and seed his/her Aadhaar number in the bank account to start receiving benefits and subsidies directly into his/her Aadhaar Enabled Bank Account

ABPS witnessing significant traction in usage



Source: NPCI

Bharat Bill Payment System (BBPS)

- ♦ The Bharat Bill Payment System (BBPS) is a RBI mandated system which seeks to facilitate a less cash society through migration of bill payments from cash to electronic channel
- ♦ It will offer integrated and interoperable bill payment services to customers across geographies with certainty, reliability and safety of transactions
- ♦ It offers bill payment services to customers through network of agents or online, allowing multiple payment modes and provides instant confirmation

Right from its launch, it will be able to process various forms of utility bill payments like electricity, water, gas, telephone & DTH bills, and will aim to target institutional payments (like school fees, college fees, subscription fees etc) and financial products (insurance premium payments, mutual fund SIPs, credit card payments, loan EMLs). Government subsidy/tax payments, charitable donations and other forms of payments too may be incorporated later.

Salient features of BBPS

Interoperable	Integrated platform connecting bill aggregators (bank/non-bank), merchant billers, payment service providers and retail bill outlets
Guarantee of settlement	Guaranteed settlements between different parties, standardized turn-around times
Standardization	Standardization of processes for the entire BBPS ecosystem including banks, non-banks, agents, customers etc.
Accessible	Seamless payment of bills through any channel including agent-assisted model at any agent/BC outlet/bank branch/ online channels

Source: NPCI

Appendix

Structural growth drivers – smartphones, changing consumer behavior:

Smartphone penetration, increasing awareness about digital payments, preference for hassle-free transactions and secured payment solutions is driving growth for digital payments.

The payment industry in India is expected to witness multifold growth in the next few years led by:

- ♦ Entry of payments banks and small finance banks
- ♦ Multiple access modes (internet, mobile, tablets etc) and several payment modes (mobile wallets, prepaid cash cards etc)
- ♦ Changing customer behavior from traditional transaction channels like branches etc. to digital
- ♦ Emerging technology landscape that is driving innovations in the payment space such as mobile money, e-wallets and payment aggregators. Digital platforms provide a unique opportunity to interact with customers on a regular basis in a more personalized manner
- ♦ Huge opportunity for digital payments. i.e. Indian consumption is still dominated by cash, with cards contributing only 5% of the personal consumption expenditure. In developed countries, 30-50% of spends happen through cards
- ♦ Proliferation of the e-commerce industry that has made it convenient for even perishables and small value items to be purchased online. With the growing adoption of online shopping, e-transaction volumes are set to increase. Also, payments have grown to include loyalty cards and prepaid instruments which further widen the scope of payments and their role today

Key trends in payment sector

- ♦ **Biometrics usage:** Biometrics is considered to change the future of payments and how consumers interact with their service providers. PayTango enables customers to pay through fingerprint scan
- ♦ **Technology innovations:** Various policy changes have clearly spelt out the government's focus of using technology as a medium to reach out to the masses. There have been numerous measures aimed at propelling the shift of transactions from cash to digital payments with the underlying objective of transforming India into a less-cash society. Apple Pay combines digitized cards with mobile contactless capabilities, and has the power to transform how consumers make payments in-store as well as for in-app purchases from mobile devices
- ♦ **Sachet modes like Prepaid Payment Instruments (PPIs):** PPIs have made in-roads into customer wallet by providing convenient and secure options for small payments and transfers and setting up assisted touch points for cash loading and cash out. In a span of less than 18 months, PPIs contributed to more than 40% of all IMPS transactions between banks and non-banks connected to IMPS switch.

Exhibit 18: PPI transaction volumes and value

	Volume (mn)	Value (Rs mn)
Mar'15	5.36	14,247
Mar'16	9.65	26,119

Source:: NPCI

- ♦ **Customer segmentation and uberisation of user experience:** The payments ecosystem will have to address an emerging class of customers with specific needs and gaps in delivery by the existing system. There is a need to revisit customer strategies i.e. to look at customers not as units to be acquired but as a set of needs which can be catered by multiple niche service providers (wallet share). The data expected to be generated in the new payments ecosystem relating to an individual or an entrepreneur's transactions, habits, relationships and cash flows will help profile previously untouched customer segments, increasing manifold the system's ability to deliver to them small credit, insurance and investment products. With the increasing uberisation of user experience and integration of both online and offline spaces, some of next-gen service providers have become the instrument of choice for small payments. For example, payment banks are expected to ensure availability of electronic payments point at 15 minute walking distance
- ♦ **Need for unification of fragmented payment landscape,** the ability to perform digital transactions independent of the underlying payment method, where the value is held, or currency or channel used, is key
- ♦ **Collaboration on the cards:** Intense competition and strategic collaboration among existing and new market participants like the payment and small banks and wallets will help scale up acceptance and foster creativity, innovation and consumer choice

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