Unified Payments Interface: The Recent Indian Financial Innovation Demystified

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Abstract

The Reserve Bank of India, along with the National Payments Corporation of India has launched its most ambitious project, the Unified Payment Interface (UPI) on 25th August 2016. The sole objective of RBI in creating Unified Payment Interface is to reduce the cash transactions in the economy thereby making it a “Less – Cash” economy. Unified Payment Interface is expected to change the way payments are being made to restaurants, retail shops, cabs and even e-commerce companies. The new payment method is further expected to revolutionize the mobile banking which has grown exponentially among retail and corporate customers recently. This paper attempts to elucidate the concept of Unified Payments Interface, its evolution, features, key drivers, architecture, usage process, value propositions and probable concerns. The paper also throws some light on how Unified Payment Interface is different from the existing payment system and its impact on the future of electronic-wallets. This paper is descriptive in nature, and data has been collected from various secondary sources. Thus, after reading this paper, every reader will have clarity about the concept of Unified Payments Interface in detail. The paper concludes that Unified Payment Interface will fundamentally change the way digitized payments are effected, wherein the user’s personal mobile phone or a tablet will become the primary device for all payments. The unique Unified Payments Interface will benefit the Banking Sector, the customers and to the economy as a whole by providing convenience and security, in digitized transactions and reducing the use of currency notes and mobile wallets.

Keywords: Unified Payments Interface, Payment Systems, Reserve Bank of India, Banking, Less-Cash Economy

Introduction

Technological development has reshaped the banking industry in the past ten years. The primary foundation for an economy’s financial system is its financial infrastructure which allows money to flow through the economy by serving as a platform of financial transactions. A strong financial infrastructure is built on various pillars one of which is the payments and settlement system.

According to Gupta & Gupta, (2013), “Payment systems improve financial intelligence, stimulates business growth and consumption”. The success of the banking system thus depends upon the efficiency and quality of clearing system of the industry. Thus, payment and settlement system play an important role in improving overall economic efficiency. It consists of all the diverse arrangements that we use to systematically transfer money in the form of currency, paper instruments such as cheques, and various electronic channels.

The central bank of any economy is usually the driving force in the development of national payment systems. The Reserve Bank of India (RBI) being the apex bank of India has been playing this developmental role and has taken several initiatives towards Safe, Secure, Sound, Efficient, Accessible and Authorised payment systems in the country, (Reserve Bank of India). One of its major initiatives is to make the country a cashless economy. Thus, after granting licenses to eleven payment banks in 2015, in the year 2017, RBI has taken a massive step towards achieving the objective of making a cashless economy with the launch of the Unified Payments Interface (UPI) through the National Payments Corporation of India (NPCI), a principal body governing all retail payment systems in India.

A report on “Digital Banking” by Motilal Oswal Group mentions that at present, mobile payments form a microscopic portion of the overall digital payments industry in India. However, the contribution from phones and tablets is expected to increase to 30% by 2020. Mobile Payments in India is estimated to grow from $86 million in 2011 to $1.15 billion in 2016, with a Compound Annual Growth Rate (CAGR) of 68%.

Mobile banking and online shopping have risen sharply in India’s urban regions. On one hand, payment banks are wooing customers through lucrative cashback offers while the private banks and state owned banks have launched their mobile payment systems like ‘Pockets’ by ICICI Bank, ‘PayZapp’ by HDFC

Raghuram Rajan, former RBI Governor calls the UPI ‘a revolution’. In his words, “The country has the most sophisticated public payment infrastructure in the world, which can be accessible to anyone who enters the system”. Unified Payments Interface is all set to make the digitized transactions easier and allow customers to transfer funds instantly across banks. The unified payments interface will enable the user to transfer money with just the UPI ID (like a virtual address or email) of the receiver. This would eliminate the need to provide sensitive information like a person’s bank account number, Indian Financial System Code (IFSC, is an alphanumeric code that facilitates electronic funds transfer in India.), debit/credit card details and Card Verification Value (CVV) numbers. Also, unlike a mobile wallet, one does not need to set aside funds upfront in an account. Thus, the Unified Payments Interface is expected to prove as an audacious innovation for payments in India.

**Objectives of the Study**
The paper solely aims to provide a detailed understanding to its readers about the
1. Concept and Evolution of Unified Payments Interface (UPI)
2. Need, usage, features, architecture and security of Unified Payments Interface (UPI) application
3. Advantages, uniqueness and future prospects of Unified Payments Interface (UPI) in India as compared to the e-wallets
4. Implementation and spread of Unified Payments Interface (UPI) in the national framework.

**Research Methodology**
Unified Payments Interface has been launched recently. Therefore, this research has been conducted on the basis of the information collected from research reports published by government agencies and private firms, and also from newspaper articles. Thus, the paper is conceptual and descriptive.

**Unified Payments Interface – The Brainchild of RBI**
Unified Payments Interface (UPI) is a system that empowers multiple bank accounts into a single mobile application (of any participating bank), merging several banking features, merchant payments & seamless fund routing into one hood. It also accommodates the “Peer to Peer” collection request which can be scheduled and paid as per requirement and convenience. It is a financial architecture and a set of standard Application Programming Interface (API’s) by RBI to facilitate the next generation online immediate payments leveraging trends such as increasing smartphone adoption and app downloads, Indian language interfaces, and universal access to Internet and data (National Payments Corporation of India, 2016).

Figure 1 depicts the conceptual framework highlighting the various aspects of Unified Payments Interface that have been explained and discussed in this paper.

**Figure 1:** Conceptual Structure of Unified Payments Interface

![Conceptual Structure of Unified Payments Interface](image)

**Source:** Author’s own depiction based on exploratory study
According to Vishwanathan, (2016) the UPI can be used for:

- Merchant transactions at physical stores or e-commerce websites
- Paying cash on deliveries
- Paying utility bills, insurance premiums
- Transferring money from one account to another
- Making Immediate Payment Service (IMPS) alike payments without the need of knowing Bank account number or IFSC (Indian Financial System Code)
- Merchants cash settlements in real-time

According to the document titled Unified Payment Interface Common URL Specifications for Deep Linking and Proximity Integration released by the National Payments Corporation of India, 2016, the Unified Payment Interface allows payments to be initiated by the payer, or by the payee. In the basic payee initiated flows, the payment request is routed by the initiating application through the NPCI switch to the payer for approval. However, in certain instances, where it is possible to connect with the payer immediately, it is preferred that the payee sends a payment request to the payer, who can then initiate the payment request with his credentials.

This leads to a significantly smoother payment experience. Some examples of these include in-app payments – where the merchant application, may send the request to the PSP app on the same device, instead of a collect request via the PSP network. Another example may be for proximity payments, where the payer and payee are using different devices, but are close enough for the information to be transmitted locally.

**Unified Payments Interface: The Evolution**

The National Payments Corporation of India (NPCI), 2016, document titled Unified Payment Interface Common URL Specifications for Deep Linking and Proximity Integration, states that the number of non-cash transactions per person stands at just 6 per year. Only a fraction of the 10 million-plus retailers in India have card payment acceptance infrastructure. Presently this number stands at 0.6 million, or 6%. What these numbers reflect is the potential that exists as penetration of smart phones is projected to increase from the current level of 150 million to 500 million over the next few years.

Given this background, the National Payments Corporation of India (NPCI), which was set up in April 2009 with the core objective of consolidating and integrating the multiple systems with varying service levels, into a nation-wide, uniform and standard business process for all retail payment systems, undertook the task of implementing a UPI to simplify and provide a single interface across all systems. As published in a recent article “How UPI Works, 2016, April 13” the Reserve Bank of India (RBI) in its Payment System Vision Document (2012-2015) had mentioned the use of UPI for achieving its goal of a “less-cash” society and financial inclusion using the latest technology.

NPCI conducted a pilot launch with 21 member banks on 11th April 2016 by Dr. Raghuram G Rajan, the then Governor, RBI, at Mumbai. The National Payments Corporation of India (NPCI) had set July 31st, 2016 as the deadline for the rollout. However, the same was deferred on account of the time consumed in the last lap of testing the application with twenty-three banks. NPCI had kept an internal criterion that only lenders with a thousand pilot customers, five thousand transactions and 90 per cent success rate would be allowed to go operational by July 31. Twenty-nine banks had initially tied up with NPCI for the launch of this service that was set to happen on July 31st, 2016.

Banks had officially started to upload their UPI enabled apps on Google Play store from August 25th, 2016 onwards. Raghuram Rajan, the then RBI Governor with NPCI Chairman, Balachandran M and Advisor, Nandan Nilekani officially launched the UPI application. The payment gateway became operational after it received the Reserve Bank of India’s clearance that allowed banks’ UPI applications to go live on Google Play Store. Initially, the UPI will be available only on the Android mobile operating system. UPI shall be available on Apple’s iOS platform by October 2016. A day after going live, the download of the UPI app by bank customers from the Google Play Store crossed the 10,000 mark, (Lele, 2016).
In the first phase, UPI has gone live with twenty-one banks (Table 1). However, the country’s largest lender, State Bank of India and Bank of Baroda are expected to join the UPI platform only in the next round, probably in September or October, 2016.

The users just need to download the UPI app of the respective bank and generate a mobile PIN to confirm a payment. Built on the country’s existing IMPS (immediate payment system) where funds can be transferred from one account to another 24x7, Unified Payments Interface will make one’s bank account operate like a mobile wallet.

Sharma, (2016) writes that according to NPCI’s chief operating officer, Dilip Asbe, the corporation has already taken the first step for filing of a patent in India, and now all they have to do is wait and see if such a platform is the first of its kind all around the globe. According to him, it is a long-drawn process and would take some time. He also explained that one of the major reasons behind filing the patent is that the NPCI wanted to ensure that no one is able to replicate its wonder product.

Apparently, the NPCI is also mulling about filling patents abroad as well. If this does happen, then this would be the second Indian homegrown technology platform that would be exported to other parts of the world after Aadhaar, (Press Trust of India, 2016, September 7).

Table 1: List of Banks with the UPI application as a Payment System Players (PSP) and/or as an Issuer Bank

<table>
<thead>
<tr>
<th>Name of the Bank</th>
<th>Status</th>
<th>Name of the Bank</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Bank</td>
<td>PSP and Issuer</td>
<td>Axis Bank</td>
<td>PSP and Issuer</td>
</tr>
<tr>
<td>Bank of Maharashtra</td>
<td>PSP and Issuer</td>
<td>ICICI Bank</td>
<td>PSP and Issuer</td>
</tr>
<tr>
<td>The Janta Sahakari Bank</td>
<td>PSP and Issuer</td>
<td>Yes Bank</td>
<td>PSP and Issuer</td>
</tr>
<tr>
<td>Oriental Bank of Commerce</td>
<td>PSP and Issuer</td>
<td>Uco Bank</td>
<td>PSP and Issuer</td>
</tr>
<tr>
<td>Catholic Syran Bank</td>
<td>PSP and Issuer</td>
<td>Canara Bank</td>
<td>PSP and Issuer</td>
</tr>
<tr>
<td>Karnataka Bank</td>
<td>PSP and Issuer</td>
<td>Bhartiya Mahila Bank</td>
<td>PSP and Issuer</td>
</tr>
<tr>
<td>Development Credit Bank</td>
<td>PSP and Issuer</td>
<td>South Indian Bank</td>
<td>PSP and Issuer</td>
</tr>
<tr>
<td>Andhra Bank</td>
<td>PSP and Issuer</td>
<td>RBL Bank</td>
<td>Issuer Only</td>
</tr>
<tr>
<td>Union Bank</td>
<td>PSP and Issuer</td>
<td>IDBI Bank</td>
<td>Issuer Only</td>
</tr>
<tr>
<td>Vijaya Bank</td>
<td>PSP and Issuer</td>
<td>IDFC Bank</td>
<td>Issuer Only</td>
</tr>
<tr>
<td>United Bank</td>
<td>PSP and Issuer</td>
<td>Bank of Baroda</td>
<td>Issuer Only</td>
</tr>
<tr>
<td>Punjab National Bank</td>
<td>PSP and Issuer</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Compiled by the author from https://upipayments.co.in/upi-enabled-banks/

Unified Payments Interface – The Key Drivers

Mobile Payment Forum of India, 2015, explains that NPCI has taken up this new initiative of implementing “Unified Payment Interface” to simplify and provide a single interface across all systems. The key drivers are:

- Simplicity - Making and receiving payments should be as easy as swiping a phone book entry and making a call on mobile phone. Everyone who has an account should be able to send and receive money from their smart phone with just an identifier without having any other bank/account details. All they need to do is to “pay to” or “collect from” a “payment address” (such as aadhaar number, mobile number, RuPay card, virtual payment address, etc.) with a single click.

- Innovation – NPCI, by launching UPI has come up with a solution so that innovations on both payee and payer side can evolve without having to change the whole interface. This Unified Payments Interface should allow application providers to take advantage of enhancements in mobile devices, provide integrated payments on new consumer devices provide innovative user interface features, take advantage of newer authentication services, etc.

- Adoption - Given the size of the potential users, the key was to have a solution which should not crash and on the other hand the same should be scalable to a billion users thereby enabling
large scale adoption. It should allow gradual adoption across smartphone and feature phone users and provide full interoperability across all payment players, phones, and use cases. People using smartphone should be able to send money to others who are not yet using any mobile application and vice versa. Similarly, it should allow full interoperability between multiple identifiers such as Aadhaar number, mobile number, and new virtual payment addresses.

- **Security** – A major concern amongst the users of online services is the security. Solution should provide end to end strong security and data protection. Considering self-service mobile applications, data capture must be strongly encrypted at capture. Similarly, solution should allow a mechanism to pay and collect using true virtual addresses without having to reveal any bank/account details. While providing convenience, solution should offer 1-click 2-factor authentication, protection from phishing, risk scoring, etc.

- **Cost** - Considering the fact that about 150 million smartphone users exist today and that number is expected to grow to 500 million in the next 5 years, solution should offer a mechanism to take full advantage of that. Use of mobile phone as the authentication (credential capture) device, use of virtual payment addresses, and use of third party portable authentication schemes such as aadhaar should allow both acquiring side and issuing side cost to be driven down. This allows banks and other payment players to focus on core business and allow half a billion phones to be the primary payment device in conjunction with other third party authentication.

**Unified Payments Interface – Features**

NPCI’s Unified Payment Interface is expected to provide the following core features via a single payment API (Application Program Interface) and a set of supporting APIs.

1. Ability to use personal mobile phone or a tablet as the primary device for all payments including person to person, person to entity, and entity to person.

2. Ability to use personal mobile phone or a tablet to “pay” someone (push) as well as “collect” from someone (pull).

3. Ability to use aadhaar number, mobile number, card number, and account number in a unified way. In addition, ability to pay and collect using “virtual payment addresses” that are “aliases” to accounts that may be payee/amount/time limited providing further security features.

4. Make payments only by providing an address with others without having ever provided account details or credentials on 3rd party applications or websites.

5. Ability for sending collect requests to others (person to person or entity to person) with “pay by” date to allow payment requests to be “snoozed” and paid later before expiry date without having to block the money in the account until customer is ready to pay.

6. Ability to pre-authorize multiple recurring payments similar to ECS (utilities, school fees, subscriptions, etc.) with a one-time secure authentication and rule based access.

7. Ability for all payment system players to use a standard set of APIs for any-to-any push and pull payments.

8. Ability to have PSP provided mobile applications that allow paying from any account using any number of virtual addresses using credentials such as passwords, PINs, or biometrics (on phone)

9. Ability to use a fully interoperable system across all payment system players without having silos and closed systems

10. Ability to make payments using 1-click 2-factor authentication all using just a personal phone without having any acquiring devices or having any physical tokens.

**Unified Payments Interface – Who can use it and how?**

The benefits of Unified Payments Interface for receiving and making payments can be retrieved by anyone who accesses a smart phone or a tablet (with data connection) and a bank account, (“How to use UPI to
transfer money”, 2016).

Figure 2 depicts the complete mechanism which an individual intending to use the UPI application should follow. To get started, a user needs to download dedicated UPI app released by a bank.

**First Step**

Once the Bank’s UPI app is downloaded from the Google Play Store, the user opens the app and enters mobile number along with an application login id of his/her choice.

**Second Step**

A VPA (Virtual Payment Address) is to be created by the user as prompted by the bank’s UPI application. VPA is like an email address, and is to be created with care. For example, if an individual is using the service of ICICI Bank, their VPA domain is “pockets”. Therefore, if the user is an ICICI customer, the VPA address can be “firstname@pockets” or “computerxyz@pockets” or “9999006655@pockets”. The user can set whatever VPA is available.

**Third Step**

Once the VPA is created, the user can link his/her Bank account with the VPA address. Finally, the bank’s app will prompt to set a four digit PIN of user’s choice. Once the four digits Mobile Pin is set, the user can start transacting (Pull & Push transactions) with the UPI application. As and when the user wants to transfer money with UPI app the PIN is required, so one should remember the PIN created at this step.

A user can send and receive payments worth minimum Rs 50 upto Rs 1, 00,000 per day. NCPI has indicated that they will charge Rs. 0.50 per transaction. On a user’s bank statement, it will appear as IMPS transaction (Katre, 2016).

**Unified Payments Interface – Security**

One of the key areas of concern among users is its security. Re-emphasizing the fact that the app provides end-to-end strong security and data protection since users need not enter bank account information or net banking user id/password, Nandan Nilekani, Advisor to NPCI acknowledges that the security is fool-proof as the transaction will happen in a highly-encrypted format. Already NPCI’s IMPS network handles more than Rs. 8,000 crore worth of transactions a day, which will exponentially increase with the use of mobile phones.

The 1-Click 2-Factor authentication – similar to OTP will be there as it is mandated by the RBI. In this
Unified Payments Interface – The Architecture

The Unified Payment Interface (UPI) envisages a payments architecture that is directly linked to achieving the goals of universal electronic payments, a less-cash society, and financial inclusion, using the latest technology trends, laid down in the Reserve Bank of India (RBI) Payment System Vision Document (2012-15), (Mobile Payment Forum of India, 2015).

Figure 3: Unified Payments Interface Architecture

Source: National Payments Corporation of India, 2016

Figure 3 shows the overall architecture of the unified interface allowing Unstructured Supplementary Service Data (USSD), smartphone, Internet banking, and other channel integration onto a common layer at NPCI. This common layer uses existing systems such as Immediate Payment Service (IMPS), etc. to arrange these transactions and ensure settlement across accounts. Using the existing systems ensure reliability of payment transactions across various channels and also takes full advantage of all the investments so far. This unified layer offers next generation peer-to-peer immediate payment just by using personal phone.

As illustrated in figure 3, third party API integration (merchant sites, etc.) can “collect” payment from “an address” avoiding the need to share account details or credentials on third party applications or websites. Within this solution, payment authentication and authorization are always done using personal phone. Since this layer offers a unified interface, any-to-any (Aadhaar number, mobile, account, virtual addresses) payments to be done using standard set of APIs.

Unified Payments Interface – Value Propositions in the National Framework

Unified Payments Interface is expected to provide significant advantage from current systems to take mobile payments to next level. Its value lies in using customer’s smart phone/ tablet as the primary device for authentication and authorization for both “Direct Pay” (push) and “Collect Pay” (pull) transactions. The RBI along with the NPCI has made commendable efforts to spread digital payments culture. Following are the value propositions that UPI is expected to deliver in the national framework, (Mobile Payment Forum of India, 2015):

case,

MPIN instead of OTP will be used.
1. Simplifying Authentication - India is the only country in the world to offer trusted third party biometric authentication as a utility service. With universal coverage of aadhaar expected in 2015, PSPs can take advantage of this utility to provide secure, convenient authentication service to a billion people without having the need to do card/PIN issuance lifecycle. Similarly, NPCI offered centralized MPIN management options via USSD can allow banking customers with registered mobile to easily set and change MPIN without having any explicit issuance mechanisms.

2. Simplifying Issuance Infrastructure - Usage of virtual addresses and payment addresses in conjunction with mobile as the “what you have” factor helps banks to create token-less infrastructure reducing the costs.

3. Simplifying Acquiring Infrastructure - Use of mobile as the primary device for payment authorization can completely transform the issuance infrastructure to be easy, low cost, and universal. Considering the fact that India has nearly a billion phones and 150 million smartphones (expected to be at 500 million in next 4-5 years), massive scale can be achieved if effective use of mobile is made compared to creating costly physical acquiring infrastructure.

4. Flexibility for PSPs - Payment System Players (RBI regulated entities such as banks, payment banks, PPIs, and their technology service providers) can offer superior mobile experience to their customers. In addition, this unified interface still allows a fully on-us scheme if both payer and payee are on their network.

5. Flexibility for Users - Customers get the ability to make payments securely to their friends, relatives, pay to merchants, pay bills, etc. all using their mobile phones without having to share any account details or credentials with others. In addition, innovations such as reminders, using multiple accounts via single mobile applications, using special purpose virtual addresses, etc. allow users to enjoy superior experience.

6. Enabling 1-click 2-FA (Factor) Transactions - This proposal allows all transactions to be at least 2-FA (Factor) using mobile and any other factor (Password, PIN, and biometrics). Since mobile number is bound to the device, explicit SMS based OTP need not be used every time which makes authorization simpler. When biometric sensor integrated mobiles start becoming available, payments can be done with no data entry making electronic payments extremely convenient, but still providing full 2-FA security.

7. Stimulating Innovation - This interface provides a very simple API that is minimalistic, fully functional, and allowing innovations in various aspects such as user interface, convenience features, authentication schemes, and mobile devices to be brought in without having to change the core API structure.

8. Embracing Mobile Adoption - This interface truly embraces mobile and low cost smartphone adoption in India allowing phones to be the primary device for all payments and integrating mobile numbers by allowing paying to/from a mobile number.

9. Embracing Aadhaar Adoption - Universal digital identity is fast becoming a reality with Aadhaar adoption crossing 730 million. With aadhaar e-KYC allowing paperless, anytime anywhere e-KYC services, usage of aadhaar authentication as a trusted third party authentication, large scale electronic payments can be achieved unlike ever before.

10. Creating National Interoperability - With introduction of new payment service players such as payment banks, PPIs, and others, it is necessary that India adopt an interoperable mobile payment strategy to allow customers to send and receive from any other customer within the PSP or across PSPs in a seamless fashion. Proactively creating this unified interoperable interface allows all players to innovate and provide superior customer experience and still provide a secure, standard based, interoperable payment scheme.

Unified Payments Interface – What makes it different?

In the present system, as written by Bhasin, 2016, August 28, in order to make any transaction the account...
holder’s bank IFSC code is needed, which reveals bank account details. Then, he will need to add the other person as a beneficiary. For credit card transfer, you need the card number. However, using UPI, an individual only needs make a unique virtual private address (VPA), simpler than signing up for an e-mail. If you are a bank customer, your VPA can be created like xyz@abank. If an individual wants to make a payment to her maid, she can simply type the VPA and initiate a transfer.

Bankers expect that this simplicity of payments will lead to more people using UPI for all kinds of payments, thereby reducing cash transactions. Today, most people find bank visits cumbersome. With UPI, people will feel the same about visiting an ATM. It is expected that within six months of all banks joining the platform, there will be a meaningful decline in mall cash transactions.

The current payments systems in the country work in silos. For example, if an individual wants to transfer money from one wallet to another, it’s not possible. With UPI, such transactions also will become possible as it expands from banks to other financial intermediaries. It’s even possible with UPI to download an app of one bank without being its customer and make transactions using a different bank. For example, one can download an Axis Bank UPI app without being its customer. If your bank is already part of the UPI, say Union Bank of India, you can start transacting with its account details.

When a person is adding his other bank accounts in the app, he doesn’t even need to know their details. The registered mobile number is mapped to the UPI. Once a user enters the name of the bank he/she wishes to add, it automatically shows the account number of that bank. After authentication, it can be easily added. Thus, the biggest impact of this app will be on third-party payments as the UPI app does away with IFSC code and bank account number and branch detail requirements. UPI transactions are already low cost (less than Rs 0.45 for each). Once all financial institutions are part of the system, the cost of transactions would come down further. Finally, UPI offers a secure system as every transaction is authorised by 2-Factor authentication, (Shetty, 2016). Figure 4 shows a comparison between the existing e-wallets and the new UPI on various parameters.

Figure 4: Comparison between existing E-Wallets and UPI Application

<table>
<thead>
<tr>
<th>TAKE YOUR PICK</th>
<th>e-Wallets</th>
<th>UPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transaction cost</td>
<td>Nil</td>
<td>Below ₹0.45</td>
</tr>
<tr>
<td>Transfer limit</td>
<td>Non-KYC verified users can hold up to ₹10,000; up to ₹1 lakh for verified ones</td>
<td>Between ₹50 and ₹1 lakh a day</td>
</tr>
<tr>
<td>Transfer to individuals/ companies</td>
<td>Possible but depends on whether the wallet is open, semi-closed or closed</td>
<td>Yes</td>
</tr>
<tr>
<td>Payment at physical store</td>
<td>Very few allow this</td>
<td>Yes</td>
</tr>
<tr>
<td>Online payments</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Cash backs/discounts</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Request for payment</td>
<td>Very few have this feature</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Source: Business Standard, 2016 Unified Payments Interface and Possible Areas of Concern

Even though the UPI application is all set to drive the economy to the cashless mode, there may be concerns on its efficacy. The digital literacy in India is still very low. According to the Internet and Mobile Association of India Report (IAMAI), 2015, Approximately 40% population is living below poverty line, illiteracy rate is not more than 25-30% and digital literacy is almost no-existent among more than 90% of India’s population.
Secondly, the service requires internet connection and a smart phone. IAMAI’s annual report of 2015 profiled the expected rise of internet penetration and total economic contribution as well as identified the key challenges to fully unlocking the internet opportunity. According to the report, India’s internet economy will grow to US$200 billion by 2020 and will contribute 5 percent to the GDP of the country. The report also mentioned that the country’s internet user base will cross 500 million by 2018, with rural internet users alone being almost 210 million. India currently has about 300 million internet users and is expected to overtake the US as the second-largest internet base in the world soon. However, there is still a long way ahead.

**Unified Payments Interface and the Future of Mobile Wallets**

The launch of UPI has happened at a time when growth of mobile wallets as a means of paying for digital and physical commerce transactions was gaining significant popularity. The success of mobile wallets even prompted some banks to come out with similar products and RBI Deputy Governor HR Khan last year went on to say that “we are already at the stage when the e-commerce has encroached into the banking territory.”

Banking observers say UPI, which may become a game changer, is likely to take the wind out of mobile wallets’ sails. “It will put pressure on the Indian mobile wallet industry because most of the wallet companies do not have payment bank licenses and will have to partner with the banks on the platform. Of course, wallets might still continue to be used by India’s unbanked poor for transferring funds to remote rural areas, but state-owned banks may eat into this market by pushing their rural penetration,” Majumdar & Partners said in a report.

Taxi hailing companies like Uber and Ola, food ordering services like Zomato and Tiny Owl and online grocery shops like Big Basket will be able to take advantage of the UPI system. Going forward, such companies should be able to register its identifier on the UPI system and receive funds from a customer’s bank account through the UPI. Such tech-based companies are now banking on mobile wallets, (Panchal, 2016). As Khan said, the day is not far off when the banks would be viewed more as technology companies offering banking products and services, (Mathew, 2016).

**Conclusion**

Seeking inputs from the information presented above, it is concluded that UPI will fundamentally change the way digitized payments are effected, wherein the user’s personal mobile phone or a tablet will become the primary device for all payments.

When fully operational across the entire banking sector, with all the banks launching the app, UPI would create a win-win for service providers and the clients. It would be beneficial to the banking sector and the bank customers in terms of making/ receiving payments and transfers. UPI will also reduce the requirement of e-wallets on account of convenience being the primary focus of a user using this service. Users will be able to use multiple e-wallets seamlessly as they are inter-operable with UPI.

The convenience of transacting without bank details i.e. with a Virtual Payment Address and the 1-Click 2-Factor authentication providing superior security will make UPI a game changer in the financial infrastructure of the economy. Above all, UPI will make a major impact on the economy as it would substantially end cash payments. Use of currency notes would come down and the economy would become more transparent, amenable to compilation of authentic data.

**References**


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