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All you should know about Unified Payments Interface (UPI)



Introduction:

India moved a step closer towards becoming a cashless economy with the launch of Unified Payment Interface (UPI). With this new payment method, your smartphones will soon double up as virtual debit cards and you'll be able to send or receive money instantly. Along with Bharat QR code, it can help you get rid of your wallet all together.

UPI or Unified Payments Interface is an immediate real-time payment system that helps in instantly transferring the funds between the two bank accounts through a mobile platform. Hence, UPI is a concept that allows multiple bank accounts to get into a single mobile application. This idea was developed by the National Payments Corporation of India and is controlled by the RBI and IBA (Indian Bank Association).

Definition:

Unified Payments Interface (UPI) is an instant real-time payment system developed by National Payments Corporation of India facilitating inter-bank transactions. The interface is regulated by the Reserve Bank of India and works by instantly transferring funds between two bank accounts on a mobile platform

Services:

Unified Payments Interface is a real time interbank payment system with send or request money. Any UPI client app may be used and multiple bank account may be linked to single app. Money can be sent or requested with following methods

- Virtual Payment Address (VPA): Send or request money from/to bank account mapped using VPA.
- Mobile number: Send or request money from/to bank account mapped using mobile number.
- Account number & IFSC: Send money to bank account.
- Aadhaar: Send money to bank account mapped using Aadhaar number.
- QR code: Send money by QR code which has enclosed VPA, Account number and IFSC or Mobile number.

Key Features of UPI:

some of the features of UPI are listed below:

- * Instant transfer of fund through Immediate Payment Service (IMPS) which is faster than NEFT.
- * Since it is completely digital, one can use UPI 24 hours and on all public holidays.
- * Single mobile application for accessing various bank accounts.
- * Uses Virtual Payment Address which is a unique ID as given by the bank
- * Uses Account Number with IFS Code and Mobile Number with MMID or Mobile Money Identifier.
- * MPIN or Mobile Banking Personal Identification number is required to confirm each payment.
- * Also available on USSD service where users can use the service just by dialing *99# and choose the services like fund transfer, send money, request money, non-financial services, balance Enquiry, change MPIN etc. (Service charge of 0.50 is applicable)
- * Every bank provides its own UPI for different platforms of Android, Windows, and IOS. The banks may or may not charge for the UPI service.
- * Bill Sharing facility.
- * Best for doing merchant payment, utility bill payments, in-app payments, OTC payments, Barcode based payments.
- * One can file a complaint from Mobile App directly.

Cashless economy at full speed

UPI shows consistent growth



UPI allows banking customers to transfer money instantly between bank accounts through their smartphone. The service, though run by NPCI, can be availed of through bank applications as well as through other third-party applications.

There has been staggering growth in UPI payments, since its debut in 2016, on the other hand only a small growth is being witnessed in physical cards. This stunning growth in UPI payments has been attributed to various cashback deals that UPI services offer. The reason of the low growth in the physical cards (in comparison with UPI) is not only because banks failed to offer attractive cashbacks, but also the 2 % charges on card transaction have also worked against their usage.

The rise of digital payment in the form of UPI payment system will be the foundation stone in making India a cashless economy and will be music to PM Narendra Modi's ears. As making India a cashless economy is a serious agenda for the Prime Minister Narendra Modi's government. Demonetization was one of the few ways for making India a cashless country. After the demonetization, the government of India has boosted their digital transactions with apps like BHIM, Bharat BillPay and Bharat QR. Recently, the Twitter handle of BHIM (Bharat Interface for Money) which is managed by NCPI, tweeted that there have been seen a growth of 30% in UPI transaction for the month ended in June 2018 compared to the previous month.

UPI transaction has been performing strongly, and in the latest June 2018 month it has seen growth of 30% in their transactions compared to previous month. This month's transaction is also highest in entire first quarter of FY19.

In April month, UPI transactions stood at 190.08 million in volumes worth Rs 27,021.85 crore. In July 2017, UPI transactions were at just 11.4 million, they further increased to 105.10 million in November 2017 and further to 145.50 million in December 2017. Start of 2018 has also been good with 151.83 million transactions in January 2018, followed by 151.83 million and 178.05 million in February and March month. In the month of June, the NCPI announced that they hit 10 million UPI transactions in a single day.

The latest data of NCPI revealed that, a total 246.37 million UPI transactions were made in June 2018 which was up by 30.02% compared to transactions made in May 2018 where it stood at 189.48 million. In value terms, UPI transactions stood at Rs 40,834.03 crore in June month, rising by 22.66% from Rs 32,288.51 crore in May month.

In September, UPI transactions increased to 405 million from 312 million in the preceding month, show data from the National Payments Corporation of India.

In terms of value, UPI transferred Rs 59,835 crore in September against Rs 54,212 crore in August, a 10.3% jump.

In September last year, UPI handled 30 million transactions worth a total Rs 5,293 crore.

UPI's consistent growth is driven mainly by the rapid adoption of popular payment apps such as Paytm, Flipkart-owned PhonePe and Google Pay.

Paytm the country's largest digital payments company recorded 137 million UPI transactions in September. The company said 5 million out of its 9.5 million offline merchants have accepted UPI as a mode of payment.

Only in a few months, UPI has become the most preferred form of digital payment in India. The interface of the UPI payment system is compatible with most of the banks and many e-wallets, and mobile payment apps are embracing UPI. Some of the mobile apps include PhonePe, Paytm, Google Tez, Airtel Payments Bank and the like. Apart from this are many third-party apps including banking apps that are coupled with the UPI system and also the social media platforms are trying to associate with the UPI system. UPI payment system makes the process of fund transfer simple, quick and hassle-free.

Today's world runs on mobile as mobile is the future, though its security standards have been scrutinized. Rise of UPI payments heavily depends upon the growth of mobile infrastructure and ease of use.

According to a report in The Economic Times, bankers said that the jump in transactions was driven by wider adoption and users repeatedly choosing to use UPI for their payments activities.

Google is also utilizing UPI's increased traction and has been using the framework for all its payments in India. Along with Google, Flipkart-owned PhonePe and Paytm are also leveraging UPI and offering cashbacks to bring in more customers.

Uniqueness shows the reasons of UPI's rapid growth:

- Immediate money transfer through mobile device round the clock 24*7 and 365 days.
- Single mobile application for accessing different bank accounts.
- Single Click 2 Factor Authentication – Aligned with the Regulatory guidelines, yet provides for a very strong feature of seamless single click payment.
- Virtual address of the customer for Pull & Push provides for incremental security with the customer not required to enter the details such as Card no, Account number; IFSC etc.
- Bill Sharing with friends.
- Best answer to Cash on Delivery hassle, running to an ATM or rendering exact amount.
- Merchant Payment with Single Application or In-App Payments.
- Utility Bill Payments, Over the Counter Payments, Barcode (Scan and Pay) based payments.
- Donations, Collections, Disbursements Scalable.
- Raising Complaint from Mobile App directly.

How does UPI work?

Currently, if you want to make a bank payment online, you have to enter their account number, account type, Bank name and IFSC code. Even if you have all these details, typing it all in, particularly on a phone, is a painful process. Most banks take up to 12 hours to add a new payee and only then you can make the transfer.

The idea behind the UPI is to do away with all of this. The interface will allow account holders across banks to send and receive money from their smartphones using just their Aadhaar unique identity number, mobile phone number or virtual payments address without entering bank account details.

According to NPCI, so far only 29 banks have agreed to start this service. If your bank is UPI-enabled, you can ask it to connect you to the system. To initiate a transaction, you can use two types of address—global or local. Global address includes your mobile, Aadhaar and bank account numbers. A local address can be a virtual address. Let's say your bank gives you a virtual ID similar to your email ID (for instance, name@companyname). This virtual address will allow you to send and receive money from multiple banks and prepaid payment issuers.

So, you will no longer need to use a particular app to send and receive money. For example, if you use a taxi service, at the end of the journey you just have to give your virtual address and the driver will request money from it. You will get a message on your mobile phone asking for authentication. Once you authenticate the transaction by entering your password, it will be complete. This process doesn't require either the driver or you to share bank details. Since UPI runs on IMPS, the service will be available real time and 24X7.



UPI application:

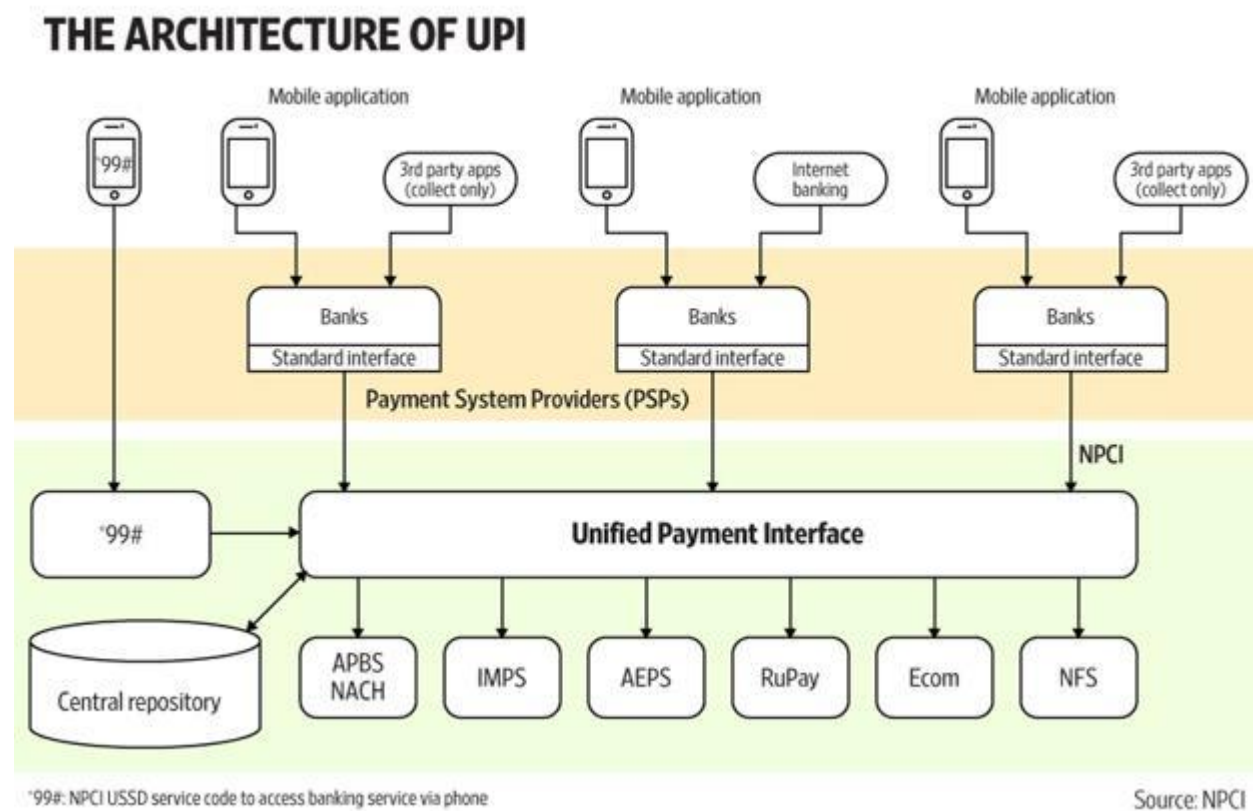
Now, the question arises that how can YOU use this amazing payments system in your phone? It is simple if you have a smartphone, just download the online banking application from Google Play Store/Apple Store and follow the following steps:

- Register your mobile number with the respective bank account along with your account number
- Install any UPI application, a preferred platform is BHIM which supports both the mobile platforms
- Select your preferred language
- Allow app permissions
- Make sure that your device is protected by Google PIN/Lock pattern or fingerprint lock
- Select the correct mobile number which is registered with the bank
- Select preferred bank in which you have your account.
- Update last 6 digits and expiry details of your ATM Debit Card

- Create your UPI PIN (6 digits). You will have to remember this code each time a transaction has been initiated and the PIN will be needed for transaction authentication
- Create app PIN (4 digits) and you are all set

Technology of UPI (How UPI system works):

Unified Payment Interface is expected to play a major role in achieving goals of universal electronic payments, a less-cash society, and financial inclusion



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).

The RBI document reveals that the number of non-cash transactions per person currently stands at just six per year; only a fraction of the 10 million plus retailers in India accept card payments; banking services were available in less than 100,000 villages as of March 2011; and nearly 145 million households are excluded from banking.

Given this background, the National Payments Corp. 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.

Considering the fact that about 150 million smartphone users exist in India today, and that the number is expected to rise to 500 million over the next five years, the solution leverages the growing presence of mobile phones as acquiring devices and uses virtual addresses instead of physical cards, thus reducing cost of both acquiring and issuing infrastructure.

Value of UPI

UPI is a cheap, secure, reliable, mobile-first, interoperable, open-source, instantaneous settlement and both pull and push platform, according to a note by Bengaluru-based technology product start-ups thinktank iSpirt.

Moreover, while pre-paid wallets can't do more than Rs.10, 000 worth of transactions without KYC (know your customer) norms in a given month, a UPI-enabled platform bank account can transfer up to Rs.1 lakh instantaneously.

Besides, the cost of each transaction is going to be less than Rs.0.45, and one can also factor in all the savings from, and to, bank accounts. (<http://bit.ly/1SYOShJ>).

Virtual address

Now, one can use virtual/disposable accounts to do transactions generated right from the bank app. Through this, the merchant or the payee will not know your details and even if his system is hacked, you needn't worry about losing money.

Pull and Push amount can be requested from a certain account or paid into some other account.

Mobile first

It's one of the few systems in the world designed for the new mobile age, helping with easy integration across various platforms.

Interoperable OTP (one-time password) generated on one bank app can be used across another for transaction authentication. Also, multiple level of identifiers can be used (bank account, Aadhaar number, virtual identifier, mobile number, etc) to send or receive money. Biometric

integration gives a second factor authentication, securing your account like none other in market.

Recurring payments

Payment Support Providers (PSPs) can provide an add-on for easy-to-do recurring payments on top of UPI.

Application Programming Interfaces (APIs) are going to be a game changer—they will ensure a level-playing field that will allow even a small start-up to do what big companies can.

What the UPI ecosystem involves:

levels	description
Level 0	People who build the UPI switch. A switch handles authentication and communication between the issuing and acquiring banks. ‘Generation Two’ switches were card machines on the merchants’ premises; authentication was handled by the machine and the bank customers’ private PIN was keyed into the merchant’s machine, and needed an expensive leased line to operate. ‘Generation Three’ switches are UPI ones—they enable customers to key in PIN/OTP (one-time password) on his/her smartphone, while authentication happens centrally. One big worry is how to get banks to agree to connect to the switch.
Level 1	Those who connect to the switch. In UPI’s case, they are called PSPs. (Old players were called Payment Gateways but these are now passed.) There will be many PSP builders—some inside banks, many outside as start-ups and merchants. Technology worry: How to build a good PSP? What should I be focusing on? Business worry: How to get a bank to “adopt” my PSP as the primary PSP? Banks and customers are free to engage with multiple PSPs. The bank may have costs associated each time, while customers will only need to note down different addresses that will be associated with their identities on different PSPs.
Level 2	They connect to the UPI PSP, Visa/Master Card networks, and RuPay or International payment gateways. They have to manage the user experience from the card to transaction completion. Technology worry: How to reduce failure in the underlying system? How to handle refunds? How to handle COD (cash on delivery)?

Level 3	<p>They are called on-boarders. They have to sign up new UPI, or new wallet, customers. On-boarding has high failure rates and lots of clever hacks go into making that less painful.</p> <p>Technology worry: How to outwit others?</p> <p>Business worry: How to find touch points before the consumer gets to the cart to make on-boarding happen?</p>
Level 4	<p>They are the application guys. They bring new cash-out (e.g. recharge players like PayTM), cash-in (e.g. Eko) and social payments (e.g. MyPoolin). In the future, this is where the action will be. They have to be a destination site or integrate into existing payment experiences.</p> <p>Technology worry: How to integrate with others?</p> <p>Business worry: Are they “allowed” (as they are initially in the grey area from RBI perspective)?</p> <p>Enablers. Innovative authentication collectors, E-sign, and digital consent are third-party systems that are needed by Level 1-4 people.</p>

FAQS:

India moved a step closer towards becoming a cashless economy with the launch of Unified Payment Interface (UPI). Since it is launched in Jan 2016, we regularly get questions like what is UPI, How does UPI work, How would it change the way I handle payments in business, etc. In these FAQs, I will try to explain this new payment method in detail by answering top asked questions.

What Is UPI?

The Unified Payment Interface (UPI) can be thought of like an email ID for your money. It will be a unique identifier that your bank uses to transfer money and make payments using the IMPS (Immediate Payments Service). IMPS are faster than NEFT and let you transfer money immediately and unlike NEFT, it works 24x7. This means that the online payments will become much easier without requiring a digital wallet or credit or debit card.

Who is behind UPI?

Unified Payment Interface is an initiative by National Payments Corporation of India's (NPCI), set up with the support of the Reserve Bank of India and Indian Banks Association (IBA). The NPCI operates the Rupay payments infrastructure that – like Visa and MasterCard – allows different banks to interconnect and transfer funds.

IMPS (Immediate Payments Service) are also an initiative of NCPI. UPI is the advanced version of IMPS.

How Does UPI Work?

Currently, if you want to make a bank payment online, you have to enter their account number, account type, Bank name and IFSC code. Even if you have all these details, typing it all in, particularly on a phone, is a painful process. Most banks take up to 12 hours to add a new payee and only then you can make the transfer.

The idea behind the UPI is to do away with all of this. The interface will allow account holders across banks to send and receive money from their smartphones using just their Aadhaar unique identity number, mobile phone number or virtual payments address without entering bank account details.

If your bank is UPI-enabled, you can ask it to connect you to the system. To initiate a transaction, you can use two types of address—global or local. Global address includes your mobile, Aadhaar and bank account numbers. A local address can be a virtual address. Let's say your bank gives you a virtual ID similar to your email ID (for instance, name@companyname). This virtual address will allow you to send and receive money from multiple banks and prepaid payment issuers.

So, you will no longer need to use a particular app to send and receive money. For example, if you use a taxi service, at the end of the journey you just have to give your virtual address and the driver will request money from it. You will get a message on your mobile phone asking for authentication. Once you authenticate the transaction by entering your password, it will be complete. This process doesn't require either the driver or you to share bank details. Since UPI runs on IMPS, the service will be available real time and 24X7.

What I can do with UPI?

UPI will simplify your online payments. Now, we have to use NEFT, IMPS or a digital wallet such as MobiKwik or Paytm to make a quick payment to the service providers. With the UPI, you simply need to enter your details, and get a billing request on your phone – which you can accept or reject right away.

Taxi aggregators like Uber and Ola, food ordering services like Zomato and Food Panda, 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. Most of the similar tech companies are now banking on mobile wallets.

Apart from this, you can send money to your family and friends instantly.



What are the charges for using UPI?

NCPI has indicated that they will charge Rs. 0.50 per transaction. On your bank statement, it will appear as IMPS transaction.

Currently, PhonePe is not charging anything for using their app.

What are the benefits for end customers?

Benefits for end Customers:

- Round-the-clock availability
- Access to multiple bank accounts through single app
- Transact with Virtual ID – No need of sharing credentials repeatedly
- Single click authentication
- Raise complaints from mobile app directly

Is UPI beneficial for Merchants as well?

Yes, UPI payments benefit merchants too, as there is an opportunity to minimize operational expenses.

Competitive price offering makes it economical & cost effective

Transaction Amount	MDR
Up to Rs. 2,000	0.25%
Above Rs. 2,000	0.65%

**RBI has capped the Merchant discount rate (MDR) for UPI*

Near real-time settlement: Instant realization of funds provided for liquidity and working capital

Solution to ease last mile delivery hassle: Minimize the effort of cash handling and optimize the cost of cash management Provides for payment essentials like complaint management, reconciliation and dispute management through your acquiring partners.

The simplicity of solution and ease of enablement makes it a popular payment tool. No additional infrastructure or development is required.

What will happen to mobile wallets?

This is a burning question asked by most of the industry watchers ever since UPI was launched. Mobile wallet companies were worried and there is a reason for that.

The RBI has allowed only banks to become Payment Service Providers of UPI service, keeping mobile wallets out of the service. So, UPI has come as a boon for banks which were losing ground to mobile wallets like PayTM, Freecharge, Mobikwik, Oxigen and Citrus Pay. Though mobile wallets have been urging the banking regulator to include them as service providers, it has not relented so far.

I think popular mobile wallets like PayTM that have good customer base can still keep using it for quick recharges and movie tickets. Cashback offers can keep them hooked to the platform little longer.

What about Payment Gateways?

So, we have CCAvenue, EBS, Instamojo and various other payment gateways in India. Question is, what will happen to these payment gateways once UPI is in full force.

Job of these payment gateways is to aggregate various payment methods like Credit cards, debit cards, mobile wallets and netbanking. So, the UPI might become the new net-banking, by replacing it as a payment mode. I

These payment gateways also offer detailed information on received payment (who paid & for what), apart from providing transaction management, reconciliation, insights etc. They also

offer customization at every level (payment options, payment page, etc.) which is beyond a simple push-n-pull movement of money via UPI.

Most importantly, Payment Gateways act like a trust custodian — one who provides protection against any dispute between merchant & consumer. This is completely missing in UPI today but it will be there as the platform matures.

What makes UPI a secure platform?

This interface is based on the 2 Factor Authentications with a seamless single click payment. This feature of UPI is aligned with the regulatory guidelines that make it the safest. 2 Factor Authentication is quite similar to OTP. Here, MPIN will be used instead of OTP.

Nandan Nilekani, NPCI advisor, assures that the security is fool-proof with UPI as the transaction will happen in a highly encrypted format. NPCI's IMPS network already manages more than Rs.8k Cr. transactions per day, which will now increase with the use of more mobile phones.

Is UPI available now for me to use?

It was announced in Jan 2016 and made available to banks starting 11 April 2016.

Banks have gone live with UPI that had concurred to provide UPI service to their customers. Our focus is in line with the RBI's vision of migrating towards a 'less-cash' and more digital society," said AP Hota, MD & CEO of NPCI.

Most of the banks have come up with their own UPI app now. Here is a list..

Links to Download UPI Apps

1. SBI Pay: Android
2. HDFC Bank MobileBanking: Android, iOS
3. ICICI Pockets: Android, iOS
4. Axis Pay UPI App: Android
5. Union Bank UPI App: Android
6. PNB UPI: Android

7. PhonePe: Android
8. Canara Bank UPI – eMpower: Android
9. United UPI: Android
10. Andhra Bank ONE – UPI App: Android
11. UCO UPI: Android
12. Bank of Maharashtra – Maha UPI: Android
13. Vijaya UPI: Android
14. South Indian Bank – SIB M-Pay (UPI Pay): Android
15. KBL SMARTz (UPI): Android
16. OBC UPI PSP: Android
17. UPI Bank Transfer with Friends: Android
18. DCB Bank UPI App: Android
19. Lotza – UPI: Android
20. TranZapp – UPI: Android
21. CSB UPI: Android

Can UPI completely replace Cash or Cards?

According to RBI's estimates, the cash floating in the system is about 18% of the country's gross domestic product, making India as one of the most printed currency-dependent country in the world.

UPI's success depends on few factors. For example, consider these numbers:

There are 760 million Aadhaar cards, and with 26 million of Aadhaar numbers getting added every month, soon the total Aadhaar card issuance will touch a billion by next year. Out of India's 900 million mobile phones, 120 million are smartphones.

So, even though the use of smartphones is increasing, its nowhere near the levels of Aadhaar registration. In India, its estimated that there are over 25 million merchants and only 1.2 million have card readers. Still a major chunk of risk-averse customers hesitate to use cards.

All out efforts therefore must be made to increase smartphone penetration if UPI is to succeed, eventually rendering cards redundant for online payments.

What are the Security Features of UPI?

UPI Solution provides strong end to end security and data protection. The key security features of the UPI are

- Device fingerprinting during the registration process
- Credential Capture through NPCI Common Library
- Credential encrypted by using RSA 2048 Asymmetric Encryption
- The decryption/encryption at NPCI will be performed through HSM
- Message communication between PSPs and UPI over HTTPS
- All messages are digital signed using SHA2 with RSA

How UPI is different from other payments processing systems?

You might be thinking how it is a unique payments method when there are lots of payments processing system and web wallets available these days? Here's how:

- UPI enables us to initiate immediate money transfers through mobile device 24x7x365
- Allows transacting with multiple banks using a single mobile application
- Allows two-factor authentication on a single click – aligned with the regulatory guidelines, which is an effective feature of seamless single click payment
- Virtual address of the customer for Pull & Push transaction provides additional layer of security while transacting because there's no need to provide your credentials like IFS code, bank account number, etc. repeatedly
- Allows easy bill sharing with friends
- Is the best solution for COD (Cash on Delivery) goods as you don't have to visit an ATM and withdraw an extra amount since you can pay the exact amount through UPI
- Allows merchant payment with single application or in-app payments.
- Allows utility Bill Payments, over the counter payments and Barcode (scan and pay) based payments
- Allows donations, collections, scalable disbursements
- You can raise complaints directly from the mobile app

Final Thoughts

UPI is a great step in right direction and it is set to become an efficient alternative to mobile wallets and make cashless payments faster, easier and smoother for millions of people in India.

Glossary:

Titles	Abbreviations	Definitions
Reserve Bank of India	RBI	The Reserve Bank of India (RBI) is India's central banking institution, which controls the monetary policy of the Indian rupee. The RBI plays an important part in the Development Strategy of the Government of India. It is a member bank of the Asian Clearing Union
National Payments Corporation of India	NPCI	National Payments Corporation of India (NPCI, Hindi: भारतीय राष्ट्रीय भुगतान निगम) is an umbrella organization for operating retail payments and settlement systems in India.
Immediate Payment Service	IMPS	It is an instant payment inter-bank electronic funds transfer system in India. IMPS offer an inter-bank electronic fund transfer service through mobile phones. Unlike NEFT and RTGS, the service is available 24/7 throughout the year including bank holidays
National Electronic Funds Transfer	NEFT	It is a nation-wide payment system. Under this Scheme, individuals can electronically transfer funds from any bank branch to any individual having an account with any other bank branch in the country participating in the Scheme. NEFT transactions are settled in batches.
Unified Payments Interface	UPI	It is an instant payment system developed by the National Payments Corporation of India (NPCI), an RBI regulated entity. UPI is built over the IMPS infrastructure and allows you to instantly transfer money between any two parties' bank accounts.
Aadhaar Enabled Payment System	AEPS	An NPCI product, the Aadhaar Enabled Payment System (AEPS) offers instant, 24X7, interbank

		electronic fund transfer service through mobile phone. It allows Aadhaar biometric authentication-based transactions from a bank account that is linked with the Aadhaar number.
Aadhaar Payments Bridge System	APBS	The Aadhaar Payments Bridge System (APBS) is a system allowing remittances to be made to an Aadhaar number without providing any other bank or account details. It uses the NPCI central mapper as a part of National Automated Clearing House (NACH) to enable government user departments to electronically transfer subsidies and direct benefit transfers to individuals on the basis of their Aadhaar number. Currently, the NPCI central mapper has about 160 million Aadhaar to bank mappings in its database. As part of large scale adoption of Direct Benefits Transfer (DBT) across all subsidy systems, it is expected that mapping database will have about 200-250 million Aadhaar mappings within next 12-18 months.
Payment Support Providers	PSPs	Payment Support Providers (PSPs), as defined by RBI, collectively cover all RBI-regulated entities under the Payments and Settlement Act of 2007. These include banks, payments banks, PPIs, and other regulated entities. In addition to the Aadhaar and the mobile number as global identifiers (mapped by NPCI), PSPs can offer any number of virtual addresses to customers so that they can use the virtual address for making and receiving payments.
Unique Identification Authority of India	UIDAI	The Unique Identification Authority of India (UIDAI) which issues digital identity (called Aadhaar number) to residents of India and offers online authentication service.
Indian Bank Association	IBA	Indian Banks' Association (IBA), formed on 26 September 1946 as a representative body of management of banking in India operating in India - an association of Indian banks and financial institutions based in Mumbai Indian Banks' Association is managed by a

		managing committee, and the current managing committee consists of one chairman, 3 deputy chairmen, 1 honorary secretary and 26 members.
Virtual Payment Address	VPA	UPI enables bank account holders (of banks participating in UPI) to send and receive money using a Virtual Payment Address (VPA) without entering additional bank information. To start using UPI as a payment option, all you need is a VPA. A VPA is an ID, which a user creates by linking their accounts to a bank's mobile application.
Indian Financial System Code	IFSC	The Indian Financial System Code (or IFSC) is an 11-digit alpha-numeric code assigned by the Reserve Bank of India to identify every bank branch participating in the payment system uniquely. This code is used by electronic payment system applications such as <u>RTGS</u> , and <u>NEFT</u> . It is mandatory for fund transfers from one bank account to another. Every bank branch will have a unique code and no two branches (even of the same bank) will ever be the same.
Quick Response Code	QR Code	QR code (abbreviated from Quick Response Code) is the trademark for a type of matrix barcode (or two-dimensional barcode) first designed in 1994 for the automotive industry in Japan The Quick Response (QR code) system became popular outside the automotive industry due to its fast readability and greater storage capacity compared to standard UPC barcodes. Applications include product tracking, item identification, time tracking, document management, and general marketing
Mobile Money Identifier	MMID	MMID is a seven digit number that allows you to use immediate payment service (IMPS) through SMS or mobile number.
Unstructured Supplementary Service Data	USSD	USSD (Unstructured Supplementary Service Data) is a Global System for Mobile (<u>GSM</u>) communication technology that is used to send text between a mobile phone and an application program in the network. Applications may include prepaid roaming or mobile chatting. USSD is similar to Short Messaging Service (SMS),

		but, unlike SMS, USSD transactions occur during the session only. With SMS, message can be sent to a mobile phone and stored for several days if the phone is not activated or within range.
Marketing Partner ID Number	MPIN	The Marketing Partner ID Number (MPIN) is mandatory for SAM registrants and contains nine characters: at least one letter (upper or lower case) and one number. Do not use spaces or special characters.
Bharat Interface for Money	BHIM	<p>BHIM is a mobile app developed by National Payments Corporation of India (NPCI), based on the Unified Payment Interface (UPI). It was launched by Prime Minister Narendra Modi, at Digi Dhan mela at Talkatora Stadium in New Delhi on 30 December 2016. It was named after B. R. Ambedkar and is intended to facilitate e-payments directly through banks as part of the 2016 Indian banknote demonetization and drive towards cashless transactions.^[4]</p> <p>The app supports all Indian banks which use that platform, which is built over the Immediate Payment Service infrastructure and allows the user to instantly transfer money between bank accounts of any two parties.^[5] It can be used on all mobile devices.</p>
Cash on Delivery	COD	Cash on delivery (COD), sometimes called collect on delivery, is the sale of goods by mail order where payment is made on delivery rather than in advance. If the goods are not paid for, they are returned to the retailer. Originally, the term applied only to payment by cash but as other forms of payment have become more common, the word "cash" has sometimes been replaced with the word "collect" to include transactions by checks, credit cards or debit cards.
encryption		In cryptography, encryption is the process of encoding a message or information in such a way that only authorized parties can access it and those who are not authorized cannot. Encryption does not itself prevent interference, but denies

		<p>the intelligible content to a would-be interceptor. In an encryption scheme, the intended information or message, referred to as plaintext, is encrypted using an encryption algorithm – a cipher – generating ciphertext that can be read only if decrypted. For technical reasons, an encryption scheme usually uses a pseudo-random encryption key generated by an algorithm. It is in principle possible to decrypt the message without possessing the key, but, for a well-designed encryption scheme, considerable computational resources and skills are required. An authorized recipient can easily decrypt the message with the key provided by the originator to recipients but not to unauthorized users.</p>
decryption		<p>Decryption is the process of taking encoded or encrypted text or other data and converting it back into text that you or the computer can read and understand. This term could be used to describe a method of un-encrypting the data manually or with un-encrypting the data using the proper codes or keys.</p>
hardware security module	HSM	<p>A (HSM) is a physical computing device that safeguards and manages digital keys for strong authentication and provides crypto processing. These modules traditionally come in the form of a plug-in card or an external device that attaches directly to a computer or network server.</p>

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