RISE OF
UPI

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The demonetization of old 500 and 1000 rupee notes made us realize that sending and receiving money digitally is the new trend we need to adopt. With this, UPI (Unified Payments Interface), the future of digital payments in India, has come under tremendous focus. The National Payments Corporation of India built UPI with the vision towards a 'cashless' and digital society. It is one of the greatest and most successful initiatives headed by the India Stack team towards a Digital India. As we already know, it is a platform that democratizes access to one's money in the banking system. The three tremendous design patterns that UPI has chosen sets it apart as a truly innovative and future provisioned platform.

TECHNOLOGIES BEHIND UPI

BLOCKCHAIN TECHNOLOGIES

Most traditional payment gateways do the authentication of the transacting individual and authoritarian the transaction in the context of the same transaction. For example, a credit card payment involves authentication using the CVV number and the address while the transaction authorization is via the OTP or Password. By facilitating exactly what blockchain was supposed to do—cutting out intermediaries and inducing greater competition—UPI could force a global acceleration of innovation in payment technology. UPI has now separated the verification of identity from the authorization of the transaction itself. It is achieved by forcing a mobile number verification and device fingerprint binding which gets registered on the UPI platform. This registration can be used as the authenticated identity of the verified individual. The registration itself is time-bound and is refreshed regularly. However, as long as it is valid, transactions can be initiated with in-built identification and only require authorization through a PIN/password. This simplifies the transaction execution while continuing to meet the 2FA requirements.

THIRD PARTY TRANSACTION FACILITATION

The UPI platform operates on a broker model where the platform facilitates the transmission of information between entities of the transaction. This role-based brokering allows a flexible four-party transaction model that makes the entire banking system highly interoperable. The UPI broker differentiates the entity sourcing the transaction from the entity remitting the funds. Similarly, it differentiates the entity that accepts the transaction from the entity that receives the funds. The broker component of UPI forwards requests, send responses and relays exceptions to ensure the sync between the parties. And the protocol is designed to be completely asynchronous and non-blocking so the scalability shouldnt be compromised.

FEDERATION OF IDENTITY MANAGEMENT

The separation of authentication and Authorization made it a multi-modal as far as identity is concerned. UPI supports various forms of authentication not only knowledge-based but also biometric identification. It allows the Aadhar-based authentication of the individual using fingerprint/iris scans which are totally driven by a third-party provider trusted by the software and by the bank that will authorize the transaction. This allows for the evolution of the identification process towards a more convenient and secure form. Moreover, the choice of how to identify yourself to your bank has now become more personal and uniform. The individual does not need to have a challenge question on one bank and a user Id/login on the other bank etc. With fingerprint scanners becoming a traditional smartphone feature, UPI would be a only matter of touch.

UPI FRAMEWORK

UPI is a system for both merchant payments and fund transfers. Payer PSP, Payee PSP, Remitter Bank, Beneficiary Bank, NPCI, Bank Account Holders (Payer and Payee/Merchants), and Third Party Application Providers (TPAPs) are among the various participants in UPI. The system integrates these participants to facilitate the settlement of payment transactions.

UPI as a fund transfer system enables the real-time movement of funds. UPI as a merchant payment system also facilitates real-time settlement, as against the T+n settlement cycle for card settlements. However, the settlement among participant banks in UPI is on a deferred net basis. Facilitating this settlement requires the PSO and banks to put in place adequate systems and processes to address the settlement risk. The efficient working of these systems requires a significant cost but UPI being an innovative initiative, on January 1, 2020, the government enforced a framework with zero fees for UPI transactions to include more people in an organised financial arrangement. As a result, neither users nor merchants incur any fees while using UPI.
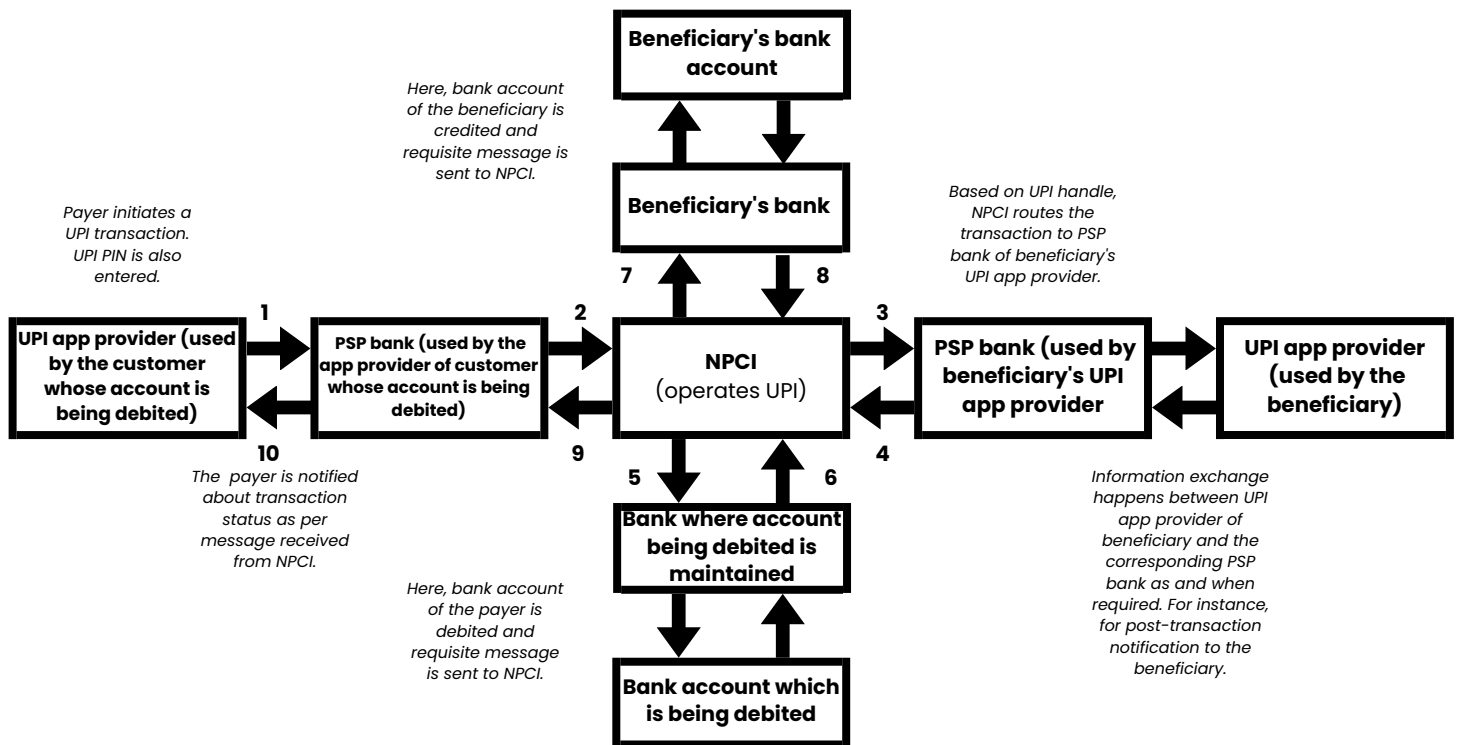
CURRENT OFFERINGS OF UPI

TRANSACTIONS

FINANCIAL   NON-FINANCIAL

FINANCIAL TRANSACTIONS

- **Pay Request:** A pay request is a transaction in which the initiating customer sends money to the beneficiary using an account number/IFS code, a mobile number, an MMID, or a UPI ID, also referred to as a virtual address.
- **Collect Request:** A collect request is a transaction in which the customer uses a UPI ID, also known as a virtual address, to access the money from the sender. The customer will have the option to specify the collect request expiration time in pull transactions (up to 45 days). If the customer hasn't specified an expiration time, 30 minutes should be assumed as the default. If the customer chooses an expiration time, the PSP must give them the option to specify a minimum validity of one minute.

NON-FINANCIAL TRANSACTIONS

- Mobile Banking Registration
- Generate One Time Passwords
- Set/Change UPI Pin
- Check Transaction Status

The Immediate Payment Service (IMPS) makes it easier for UPI transactions to be settled. As a result, the remitter instructs his bank server. The remitter's bank verifies the information before sending it on to the servers of NPCI. Regarding this, an SMS confirmation is sent. The receiver's bank receives transaction confirmation from NPCI servers after that. The receiving bank verifies the transaction, credits the receiving account with funds, and notifies the NPCI server of the status.

CASH WITHDRAWAL VIA UPI

Several banks are considering offering UPI-based cash withdrawals for their customers, i.e., moving toward a cardless mode of Automated Teller Machine ("ATM") cash withdrawals using their respective UPI app, in order to expand UPI infrastructure and its features. In a joint venture with AGS Transact Technologies, which provides a range of services including banking automation and payment solutions, Bank of India has announced its intention to offer such a facility to its customers. Similarly, many other banks are deliberating upon introducing this feature integrated with their UPI ID's.

HOW UPI PLAYED AN IMPORTANT ROLE AFTER DEMONETISATION

The National Democratic Alliance (NDA) government's massive currency reduction exercise three years back has forced India's payments system to rest at an inflexion point, where cash transactions prevail. This move consequently, developed the habit of spending via digital platforms.

"Demonetisation brought about a springboard effect in terms of growth for Fintech in India. In a country which was primarily cash-dependent, the pre-demonetisation period witnessed slow adoption of digital payments," said Sampad Swain, chief executive officer and co-founder of payment gateway firm Instamojo.

The government's move to nullify physical currency encouraged the adoption of digital payments, opening the doors for startups such as Paytm, Mobikwik, among others. Before 2016, debit cards were majorly used to withdraw cash from ATMs but immediately after the demonetisation, there was a surge in debit card payments at merchants. The use of prepaid payment instruments such as wallets and the Unified Payments Interface (UPI) picked up rapidly.

Other platforms such as Bharat Bill Payment System (BBPS), also developed by NPCI, were created to make payments simple, hassle-free and user-friendly. In October, transactions via the three-year-old instant payments system UPI recorded a new high of 1 billion. Besides, the number of transactions via UPI was 1.2 times higher than the number of debit card transactions in 2018-19, according to RBI annual report.

Surprisingly, there has been up to a 50% decline in the average ticket size of UPI transactions, from 3,149 INR in 2016 to 1,717 INR in 2017. This is due to the hike in the number of UPI-led micropayments post demonetisation.

April 2016   **September 2017**

Growth in AEPS transaction volumes: 6 million → 33% ↑ → 8 million

Growth in AEPS transaction values: 8 billion INR → 150% ↑ → 20 billion INR

The average ticket size has increased from 1,333 INR to 2,500 INR, a 87% increase for the above period.

Surprisingly, there has been up to a 50% decline in the average ticket size of UPI transactions, from 3,149 INR in 2016 to 1,717 INR in 2017. This is due to the hike in the number of UPI-led micropayments post demonetisation.

NEFT   **RTGS**

November 2016 — September 2017   November 2016 — September 2017

Growth in transaction volumes:
- NEFT: 123 million → 28% ↑ → 158 million
- RTGS: 7.9 million → 22% ↑ → 9.6 million

Growth in transaction values:
- NEFT: 8,808 billion INR → 61% ↑ → 14,182 billion INR
- RTGS: 7,8479 billion INR → 30% ↑ → 1,02,348 billion INR

NEFT has seen a steady increase both in terms of transaction volumes and value; the government has supported NEFT with added settlement batches.

Around 80% of RTGS transactions are in the corporate space and 20% in retail, with a 7% increase in average transaction size.

One of the talking points of the digital payments story has been the phenomenal growth experienced by new age instruments such as Unified Payments Interface (UPI), prepaid payment instruments (PPIs), Aadhaar Enabled Payment System (AEPS), as well as well-established ones such as National Electronic Fund Transfer (NEFT), Real Time Gross Settlement (RTGS) and cards.

FACTORS THAT HAVE DRIVEN THE RISE IN DIGITAL PAYMENTS OVER THE LAST 12 MONTHS:

EMBEDDING OF OFFLINE SPACE IN THE BUSINESS GROWTH STRATEGY

Offline space is the newest warzone for payment service providers. Acquiring banks have stationed nearly 29 lakh POS terminals throughout the nation, an increase of nearly 95% from the previous year. This space has also allured the curiosity of UPI and PPI players and a lot of them have advanced state-of-the-art solutions to support large merchant outlets, micro-merchants, cash-on-delivery payment facilitators of e-commerce firms, etc., in accepting payments coherently over mobile phones. Customers dealing with issues of cash availability post the note ban started to use these digital payment modes.

BOOST TO INTEROPERABILITY

One of the most notable developments in the payments scenario is the push towards interoperability, with instruments such as UPI allowing transfers between 55 banks, independent of the acquirer payment service provider mobile app. The increasing adoption of the Bharat Bill Payment System (BBPS), Bharat QR and interoperability guidelines for PPI players will factor as a major thrust to a flawless, taut and interoperable payments.

BUILDING OF ECOSYSTEM AROUND DIGITAL PAYMENTS

A considerable number of players came up with numerous solutions associated with digital payments, which consequently boosted their adoption. Some plausible ones are :

- Integration of enterprise resource planning (ERP) of corporates with the UPI solution for real-time management information system (MIS) updates
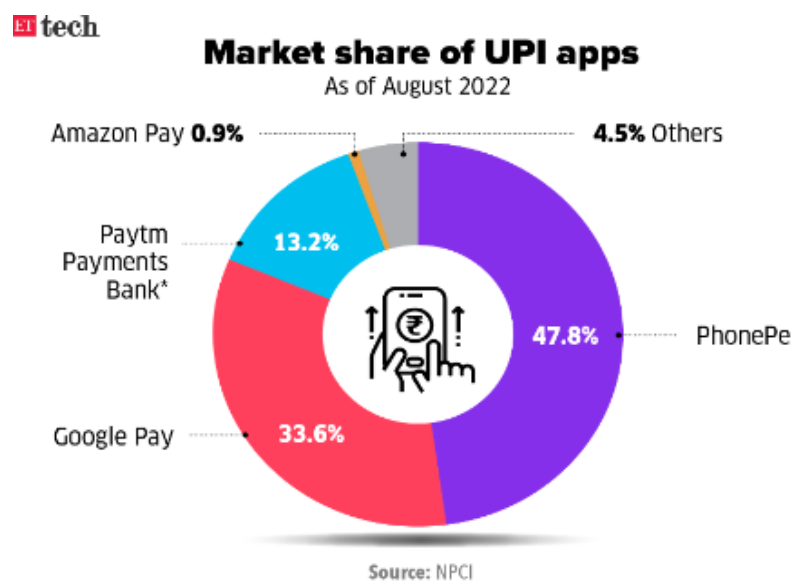- Disbursement of instant loans based on the footprint generated by digital payments

PROMOTIONAL EFFORTS BY PLAYERS

Many payment processing firms and FinTech companies played on demonetisation to penetrate the market. In a view to expand their market share, several of them granted loyalty points, instant cashbacks and referral rewards to customers. While some may have suspicions about the long-term sustainability of such schemes, the promotional efforts undoubtedly gave momentum to users to consider a switch to digital payments.

MAJOR MARKET PLAYERS IN UPI

Phonepe, Google pay and Paytm are the major market players in the UPI industry. Though most of the major banks in India offer UPI services, non-banking apps are taking the lion's share in UPI payments. PhonePe and Google Pay, on average, have a share of about 80% of the digital payments network each month. While PhonePe clocked 3.14 billion UPI transactions in August, giving it a 47.8% market share, Google Pay recorded 2.2 billion transactions for a 33.6% share and Paytm had 13.2% of the total UPI transactions, according to data from NPCI. Other smaller platforms had a combined share of nearly 5.5%

The total number of UPI transactions in August stood at 6.5 billion.

ET tech

Market share of UPI apps
As of August 2022

Amazon Pay **0.9%** — **4.5%** Others

Paytm Payments Bank* — 13.2%

Google Pay — 33.6%

47.8% — PhonePe

Source: NPCI

Some of the new Entrants WhatsApp Pay, and Tata Neu are still trying to find their footing in the market, hence have a very low market share despite launching successive cashback campaigns and discount schemes. Tata group's super app Tata Neu also joined UPI earlier this year but hasn't seen any noticeable traction yet.

REASONS FOR BROAD ADOPTION

SIMPLIFIES ONLINE PAYMENTS

UPI simplifies business payments for users by enabling fast authentication and money transfers. Customers can use this payment method to make purchases directly from their bank accounts without having to enter their card or bank information. Here, payments over the UPI are made using the Virtual Payment Address (VPA). Customers can also make payments using the UPI applications of their choice that enable UPI flow.

To provide clients with a flawless buying and payment experience, firms integrate UPI for digital payments. It also enables them to offer customers who want to pay with any of the UPI-linked accounts via their cell phones a smooth checkout experience.

EASY TO GO CASHLESS

Many business owners who want to accept digital payments find it difficult because of India's overly reliant use of physical cash. This is because they trust cash payments more than online payments. They feel that they don't know where their money is going and that it might be going to an unreliable source. UPI is the way to go in digital payments when looking for a way to transition to cashless payment collection and disbursal.

With UPI, business owners get to accept payments that are deposited straight into their bank account, while clients can pay quickly online using mobile devices. Indian internet market leaders have achieved success by maximizing the potential of UPI as a payment option. By implementing UPI, traditional cash-based payment collection procedures can be pivoted to taking payments online.

SECURITY CONCERNS ALLEVIATED

Because of security worries, many customers steer clear of using their cards for online purchases. This is one of the factors that prevent many companies from accepting online payments. On the other hand, if you look at the adoption rate for digital payments, according to NPCI research, one-third of Indian families currently make digital payments in some way.

Because UPI guarantees the security of payment transfers, business owners now rely on it for digital payments. For transactions, this mobile payment method makes use of VPA or UPI ID. Additionally, end-to-end encryption and two-factor authentication make online payments secure for both users and enterprises.

ACCOMMODATES A LARGE NUMBER OF BUSINESS USE CASES

UPI payment system has instant payment notifications, easy authentication, real-time tracking, high-volume retail purchases, and no fees. These qualities are necessary for all businesses, regardless of size, whether they operate online or offline, which makes UPI a very well-liked payment option for companies. It contains all the capabilities a growing company needs to offer customers a more straightforward payment experience

Additionally, using this innovative payment technique does not involve any additional payment setup. Your payment systems can easily incorporate UPI solutions

WHAT GAVE A BIG PUSH TO UPI

▶ COVID 19

According to the research, Covid-19 required consumers to transact using digital methods; as a result, UPI's demographic appeal grew to include more people who had been wary of using it in the past.

▶ Much More Accessible

Several banking and finance apps are using UPI extensively, therefore, making UPI and IMPS much more integrated into the Indian financial and banking ecosystem.

▶ Newer Use Cases

According to the research, several newer use cases of UPI were made possible by technology advancements made possible by market participants. Payments utilising QR codes, card-free cash withdrawals using UPI, e-RUPI, and the launch of UPI service in Singapore and the United Arab Emirates are a few examples of such advancements.

MAJOR INTERNATIONAL COMPETITORS

There have been numerous popular rapid payment platforms that proved their mettle in their respective countries and regions but they all have one thing in common, their systems don't provide the same level of security and ease of transacting as UPI.

Some examples of these would be the 2018-launched InstaPay in the Philippines which continues to rely on account and bank routing numbers, requiring recipients to give sometimes-sensitive and difficult-to-remember information. Plans between mobile network operators in nations like Tanzania (introduced in 2015) and Kenya (released in 2018) make use of phone numbers but frequently demand a distinct menu for off-network transactions, necessitating the knowledge of the recipient's account provider by senders.

Brazil's New Instant Payment System, PIX, can also become a potential competitor to UPI. Brazil's system was launched with many of the addressing features seen in UPI. The system allows users to select a phone number, e-mail address, or another alphanumeric as their alias. User data is maintained in a centralized directory at the central bank of Brazil, as compared to the decentralized model of UPI's domain-based addressing, in which data linking a person's alias to their account is stored in their provider's database. There are trade-offs with either option. Centralized models mean that more data is shared with the payment system for address resolution and routing. Decentralized models require some way for the sender to identify both the receiver's account and financial institution, potentially limiting the options available to identify a customer.

CHALLENGES WITH UPI

With the benefits of UPI, disadvantages of UPI also come along. Some of the disadvantages of UPI are:-

▶ TECHNICAL PROBLEMS

Online payments are subject to technical/server failures just like any other software that is dependent on technology. Technical or internet failures can take place at any time and correcting these failures takes time because of this, transactions cannot take place and consumers/producers face a lot of problems. When the bank server is down or under maintenance it takes more than 48hrs to settle the transaction, the amount either goes to the beneficiary or comes back into the account of the account holder.

▶ FALSE IDENTITY

Unlike physical transactions, it is nearly impossible to verify whether the person making the online payment or is on the receiver's end is the one he/she is claiming to be. Since there are no ways to prove the identity of the person, most of the payments are done anonymously, leading to frauds and identity threats.

▶ TECHNOLOGICAL ILLITERACY

One of the main disadvantages of online UPI is technological illiteracy among people. Since they don't have the prerequisite knowledge required to make online payments, they refrain from using this technology. For people belonging to the working class or younger generation, it is easier for them to understand and make payments but for the older generation, this system is way too complex because of which they prefer traditional methods of payment over online methods. This is a roadblock in a developing country like India.

PASSWORD THREAT

To make payments through UPI you need to set up a pin or password to protect yourself from frauds, and if you regularly use such an interface for making payments then there is a high chance that the website may have access to your personal details or bank account details. If by any chance your password gets stolen then you are in big trouble.

LIMITATION ON AMOUNT AND TIME

Some banks have put limitations on the number of times you can make transactions and also on the limit of the amount. Currently, the maximum limit of UPI is Rs. 1 Lakh and if you want to make a payment that exceeds this amount you need to pay multiple times. Rs. 1 Lakh in regards to business is a petty amount and the businessman will have to pay multiple times to make the payment which will create a lot of problems so the NPCI should increase the limit.

SECURITY CONCERNS

As more and more people are shifting towards online payment platforms and are preferring these over traditional methods so are fraudsters. Many cybercriminals have taken this as an opportunity to commit frauds and steal money. They use methods such as ID theft, phishing, data extraction etc. To securely make payments one should take proper security measures so as to stay away from frauds.

OTHER INTERESTED COUNTRIES

NPCI International Payments Limited (NIPL) was incorporated on April 3, 2020, as a wholly-owned subsidiary of the National Payments Corporation of India (NPCI). As the international arm of NPCI, NIPL is devoted to the deployment of NPCI's indigenous, successful Real-Time Payment System – Unified Payments Interface (UPI) and Card Scheme – RuPay, outside of India.

In September 2021, Liquid Group, a provider of international digital payment services, signed a contract with NIPL to begin operations in 2022 in Singapore, Malaysia, Thailand, the Philippines, Vietnam, Cambodia, Hong Kong, Taiwan, South Korea, and Japan with a QR code payment system based on UPI.

On March 8, 2022, NIPL and the Arab Monetary Fund (AMF) signed a contract to link UPI to the Buna Payment Platform, which is connected to central banks and financial institutions of the Arab world. UPI forayed into another neighbourhood country Nepal in a move aimed at bolstering real-time digital transactions. NPCI International Payments Ltd (NIPL), the international arm of NPCI, partnered with Gateway Payments Service (GPS) and Manam Infotech to deploy UPI services in Nepal. NIPL partnered with Singapore to accept UPI-based payments. You can download Bhim Upi and can transfer money easily.

The Monetary Authority of Singapore (MAS) and the Reserve Bank of India are also trying to link Singapore's PayNow and India's Unified Payments Interface real-time payment systems. In July 2021, Bhutan became the first country to adopt Unified Payment Interface standards for NPCI's QR deployment, and the only country to accept RuPay cards. NIPL joined hands with NeoPay, a payments service subsidiary of UAE -based Mashreq Bank, in April 2022.

Malaysia, to offer real-time remittances to India, Merchantrade Asia, a provider of money transfers, digital payments, and mobile communications, has partnered with NPCI International Payments Ltd (NIPL), a fully owned subsidiary of the National Payments Corporation of India (NPCI).

The United Kingdom market also started with QR code-based transactions. NIPL has forged a partnership with payments solutions provider PayXpert to internationalise the acceptance of its payment solutions in the U.K.

WHY COUNTRIES ARE SHOWING INTEREST?

Cross-border remittances are transactions between individuals, companies or banks in at least two different countries. Currently, the cross-border payment settlement works through a bank with offices in both countries, converting money to the local exchange value, where users have to pay up to 10% commission for cross-border transfers.

The process is expensive as well as time-consuming. The interlinking of UPI with various International fund transfer systems will further anchor trade, travel and remittance flows between the two countries and lowers the cost of cross-border remittances. It would also serve as an example of interlinking of respective fast payment systems to achieve instant remittances in a cost-effective manner.

- UPI empowers users to link numerous banking accounts with a single UPI-based app and allows users to choose one account as a default account for making payments. This is the main advantage of UPI, as it eliminates the need for installing individual apps for different banks.

- UPI only requires the knowledge of the other party's UPI ID (in the form of their mobile number or a QR code that can be scanned on the spot) contrary to the long procedure involved in transferring by signing into their bank account through the bank portal and then provide details of the receiver's bank account used by the other countries banking system.

- UPI famously has no transaction fees and a Zero MDR (merchant discount rate) policy in India. This helps cut down transaction costs. On the other hand, foreign countries' banks collect more transaction fees. This implies a larger profit margin for banks, at the cost of consumers. UPI's removal of transaction fees is an indicator of its consumer-centric approach.

The adoption of UPI will bring competing players (like banks, wallets, etc) onto the same platform with the promise of creating a larger market for more economies. These advantages of UPI are getting the attention of other countries.

FUTURE MARKET

UPI has turned out to be one of the best fintech innovations in India, making the country one of the fastest-growing digital economies in the world. The recent announcements of linking credit cards on the UPI platform and the MoU signed for the UPI, RuPay launch in France are significant achievements adding to the might of the UPI in taking India well ahead of the rest of the globe. Increasing global acceptance of UPI will help in reinforcing the digital payment alliance between India and the partner countries.

While India has already started taking UPI to the world, in the next five years we will see UPI expanding its global footprint further, making its way to becoming an undisputed payment champion across key international geographies.

Australia: India proposed early integration of UPI with the Australian New Payment Platform during a bilateral virtual summit on March 21, 2022, in order to increase access to higher education and tourism potential.

Russia: Both India and Russia expressed a desire to continue talking about integrating the UPI and the Faster Payments System (FPS) of the Russian Central Bank into their individual national payment systems.

NPCI is also in talks to extend the UPI services to North American, European, and West Asian countries and is negotiating collaborations with government fintech companies and ancillary service providers to reduce transaction costs in their transfer system.

CHALLENGES IN FURTHER SCALING UP

HIGH CUSTOMER ACQUISITION COST

The customer acquisition cost (CAC) is prohibitively high. However, the bigger players can't afford to blink; if they slack, the competitor will eat into their market share. On the other hand, the higher acquisition cost also means a bigger barrier to entry for smaller players.
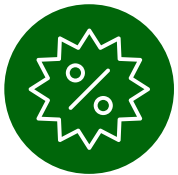
ZERO MERCHANT DISCOUNT RATE (MDR)

The merchant discount rate (MDR) is the cut merchants have to give the platforms for each transaction. Currently, the MDR for UPI payments is zero. So the question arises of who will bear this cost. In 2020, the Indian government scrapped MDR for UPI to promote digital payments; closing the door on profitability for the payment firms. Banks will not show any interest in making the digital payment infrastructure more effective and innovative if it has no scope for profit

NO INTERNET CONNECTION IN RURAL AREAS

It is still very difficult to conduct UPI transactions in rural areas because there is still a significant percentage of the population without access to the internet or smartphones. Even in some areas if the internet is there, the speed is much less for the transaction success.

CASH TRANSACTIONS

Even though cash transactions have become less common since the introduction of UPI, they are still important as a large part of the population doesn't know the use of UPI as people lack digital literacy. Due to the tax terrorism threat and cash's greater acceptance as a payment method, people still favour using it.

MORE INVESTMENT

UPI transactions should be backed with more advanced security. The investment in payment infrastructure will make it safer and more reliable as today also the transaction failure rate is quite high. Banks are not investing because this segment has no profitability. There should be MDR taken by the banks for infrastructure maintenance from the transaction above a fixed limit and zero MDR should be charged for a small transaction amount.

SCAMS IN UPI

FRAUDS

UPI frauds account for most of the cyber fraud incidents with a surge in UPI transactions over the past few years. Despite the strong security measures, these transactions are vulnerable to scams and fraud. UPI has made transactions easier on the other hand it has also opened gates for scammers. UPI frauds have become so common these days.

SOME OF THE MOST COMMON TYPES OF UPI FRAUDS ARE :

▶ PHISHING

It is the fraudulent practice of sending emails purporting to be from reputable companies in order to induce individuals to reveal personal information, such as passwords and credit card numbers. Fraudsters send you unauthorized payment links via SMS and Emails. These fake bank URLs look similar to the original URL. If one clicks on these URLs and gives permission then your account gets automatically debited or through these links, a virus/malware may be installed in your computer/phone that steals your personal and banking data.

▶ UNVERIFIED LINKS

Many users are unaware that receiving money via the UPI app does not require scanning a QR code or entering your UPI pin. Hackers frequently send fake links with the option to request money. Once you click on this link, it will ask for your UPI pin or to scan a code. This exposes your financial information to hackers.

SIM CLONING

SIM cloning is a relatively new innovation that has exploded in popularity since banks made OTP essential. A scammer can even modify the UPI PIN if he/she clones your SIM. To reset the PIN, the fraudster obtains the victim's bank account information and ID proof.

MALWARE

Malware is one of the most common types of cybercrime, and it can be downloaded by accident via a phishing email attachment or an unprotected website. Malware is created with the intention of extracting and copying data from the infected device.

REMOTE SCREEN MONITORING

Downloading an unverified app from the app store can sometimes result in a privacy breach and data leak. These third-party apps can collect personal information from your phone and access UPI app information, which can lead to UPI fraud.

5 WAYS TO PROTECT YOURSELF FROM SCAMS

▶ DON'T ENGAGE WITH FRAUDSTERS

If you are unfamiliar with a number or not certain about the identity of the caller or the source of information shared, please don't engage any further. Be wary of phone numbers shared on open web sources, especially of food or beverage outlets, as they might not be authentic

▶ REMEMBER THE GOLDEN RULE OF RECEIVING MONEY

Receiving money requires no PIN. Fraudsters try to misuse the 'request money' feature on payment apps. They'll feign interest in wanting to buy a product you might have listed online to sell. Always remember that if money has to be credited to your bank account, you will NEVER be asked for a PIN.

▶ BE MINDFUL OF PAYMENT REQUESTS AND SPAM WARNINGS

If you receive a request from an unknown account, you are likely to get a spam warning from the UPI app. Be mindful of the option you are selecting, i.e. either 'Pay' or 'Decline'. Please decline a request if you suspect fraud. Don't be misled into thinking that you will receive funds if you click on the 'Pay' option. Instead, once you punch in the UPI PIN, money is transferred to the fraudster's account.

BEWARE OF COUNTERFEIT APPS

Many malicious or fake apps come in disguised forms and try to cheat you. The app will look similar to the original bank app and will be easily available for download. If you accidentally download and install the fake app, it will share your sensitive data with fraudsters. Beware of counterfeit apps such as Modi Bhim, BHIM Payment-UPI Guide, Bhim Modi App, BHIM Banking Guide, etc. that have been reported as fraud apps for stealing the personal data of customers in the name of providing some valuable banking service.

FOLLOW SAFE PRACTICES

Follow some basic Dos and Don'ts to help keep your account safe –
- Never reveal your PIN to strangers.
- Keep anti-virus and biometric recognition software installed.
- Never open emails or links from unknown sources.
- Keep your details updated with your bank.
- Only use secure WiFi connections that you trust and not open ones.
- Keep track of your financial transactions and bank account statements, and an eye out for suspicious behaviour on your account.
- Alert your bank immediately if you find something unusual.

LINKING CREDIT CARD WITH UPI

RBI Governor Mr Shaktikanta Das during the Monetary Committee Meet (MCM) on 8th July announced that it was proposing to allow the linking of Credit Cards with UPI. "Basic objective of linking credit cards to UPI is to provide customers with a wider choice of payments. Currently, this facility is available only on RuPay cards but soon it'll also be available on Visa and Mastercard. This move is expected to test the Merchant Discount Rate benefit available to the existing UPI users. This MDR is one of the major reasons for the growth of UPI and its preference among users.
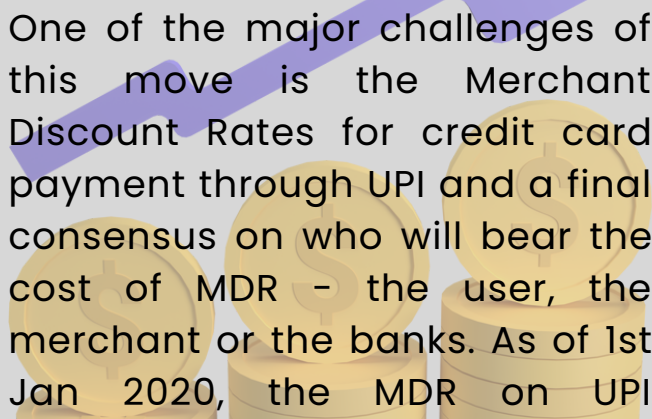
SIGNIFICANCE OF THIS MOVE

▶ It is a welcome step in the payment gateway system as it will make payment through credit cards more accessible through QR codes without the need for POS.

▶ It will lead to more acceptability as many merchants can't afford or don't have POS terminals in semi-urban and rural areas, but most of them have QR codes in their shops. With the linking of credit cards with UPI, customers will have the option to pay through credit cards and avail of the benefits and rewards associated with payment through credit cards.

▶ This move will increase the overall spending of the customers via credit cards. Currently, the spending through the use of credit cards is more than double the average spending via debit cards. Since credit cards have a lot of offers and discounts on them, people like to use credit cards to make payments, and linking them with UPI will widen their reach and people will spend more. More spending will lead to more money circulation in the economy.

It'll lead to an increase in the average ticket size of financial transactions. Currently, the average size per transaction is Rs 1600, while it is Rs 4000 for credit cards. With this new development UPI transaction ticket size is likely to go up to around Rs 3000 - Rs 4000.
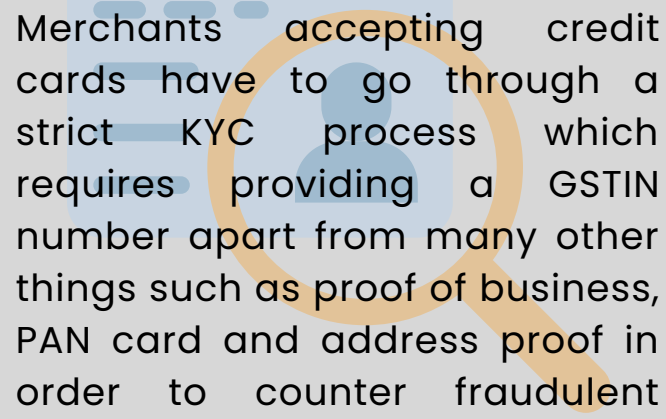
CHALLENGES OF THIS MOVE

MDR CHALLENGE

One of the major challenges of this move is the Merchant Discount Rates for credit card payment through UPI and a final consensus on who will bear the cost of MDR - the user, the merchant or the banks. As of 1st Jan 2020, the MDR on UPI transactions was changed to 0% (Nil). However, MDR is charged by merchants for payments that are processed through debit and credit cards. The main challenge here is How will they cover the cost of capital?

KYC CHALLENGE

Merchants accepting credit cards have to go through a strict KYC process which requires providing a GSTIN number apart from many other things such as proof of business, PAN card and address proof in order to counter fraudulent payments. As a result, 3rd party UPI apps will have to undertake a re-KYC process for the merchants and update their technology.

UPI LITE

"UPI Lite", the offline wallet has been recently introduced by the National Payments Corporation of India (NPCI) to enable users of smartphones to conduct low-value transactions using the local wallet. UPI currently controls 96% of all digital payments, according to reports. Users can utilise UPI Lite to make digital payments of up to 200 rupees. Users can use the feature to make payments offline using QR codes.

WHAT IS UPI LITE?

UPI Lite was released by The Reserve Bank of India (RBI) on 20th September 2022. It enables the users to make small value payments with the 'on-device wallet' feature without using a UPI PIN. The users have to load money into the wallet on the app directly from the bank account and then they can use the funds to make payments from the wallet through UPI Lite. Currently, the Lite feature of UPI has been enabled on the BHIM app and can be used via 8 major banks namely HDFC Bank, Kotak Mahindra Bank, State Bank of India, Union Bank of India, Canara Bank, Punjab National Bank, Utkarsh Small Finance Bank and Indian Bank.

One feature that clearly distinguishes UPI Lite from UPI is that UPI Lite can only be used for low-value transactions and an upper limit has been set for it. Currently, the upper limit is Rs 200 for a single transaction. Transactions with a higher value than Rs 200 can only be made using the UPI PIN. The Wallet in itself also has a Rs 2000 cap and as per the NPCI website.

Moreover, the provision for offline debit payments has been rolled out in phase one of UPI Lite features introduced in UPI. Credit transactions however will need to be done online as per the current rule. Except for top-ups, UPI Lite transactions won't appear on your bank account statement or passbook. According to NPCI, customers would receive an SMS each day from the bank giving a history of all UPI Lite transactions made that day.

EFFECTS OF UPI ON FINANCIAL INCLUSION

Although UPI has been available in the nation for more than a decade, it was not until 2016 that digital payments saw a significant increase. When the country was being demonetised, it was new-age technology that provided people with more payment choices.

India was formerly known as a cash economy and digital payment technologies have propelled the country to become one of the world's fastest-growing financial economies.

One of the market analyses that became popular put forward how Indian consumers got attracted to cashbacks, rewards and offers. These became the central driving factor to charmed increased smartphone consumers with easily available cheaper internet.

IMPACTS ON E-WALLETS

In comparison to UPI, e-wallets have restricted cash-transfer capabilities. According to RBI standards, an e-wallet can accept payments for merchant transactions up to Rs 10,000 for non-KYC-compliant users and Rs 1 lakh for KYC-compliant users.

UPI allows all users to make transactions ranging from Rs 50 to Rs 1 lakh each day. Depending on whether the wallet system is open, closed, or semi-closed, e-wallets allow for direct money transmission to an individual or a firm. The most significant feature of UPI is its interoperability with multiple financial platforms.

Current e-wallets do not enable you to move money from one e-wallet to another but UPI allows you to effortlessly transfer money to any networked bank.

However, e-wallets can continue to come up with attractive marketing schemes such as cash backs, discounts and offers, which the UPI does not offer. E-wallets have merchant tie-ups due to which these offers are possible.

PREFERRED PAYMENT GATEWAY

The UPI would undoubtedly have an influence on existing online payment systems like IMPS and NEFT. The UPI is more efficient and convenient than conventional payment systems, which may need information such as IFSC, MICR, payee names, and so on for beginning fund transfers.

Due to its two-factor verification, UPI requires only the payee's registered mobile ID and so provides more ease at no expense to fund security. The cost of transferring funds is very inexpensive, at 50 paise for each transaction. These elements together would make UPI the most widely used digital payment system.

EFFECTS OF UPI ON ECONOMIC DEVELOPMENT

According to the Internet And Mobile Association of India, about 281 million active users have been identified in the country, out of which only 98 million are regular users in the rural parts of the nation. The overall usage of digital platforms has been observed to be on the rise due to a substantial fall in prices. The total number of internet users has increased from 236 million in the year 2014 to about 560 million in the year 2018. Similarly, the number of cashless transactions per person has risen from 2.2 in 2014 to 18 in 2018 (McKinsey; 2019), thereby indicating an upward trend.

An examination of the country's numerous digital payment systems, such as UPI or the unified payments interface led the way, accounting for two out of every three transactions in areas other than the six major cities. Indian cities According to the Hindu, the data was collected from over 3 lakh villages across the country. Google Pay and PhonePe accounted for 90% of all transactions, with Google Pay topping the way.

UPI payments in India totalled over 1000 transactions worth around 17.29 lakh crore rupees, with approximately 80% of the transactions recorded in the third year of study. Online transactions using UPI totalled around 22,425 crores in 2016-17. This figure climbed dramatically from 2.95 lakh crore rupees in 2017-18 to 14.11 lakh rupees in 2018-19.

The significant association between financial literacy to financial inclusion is partially mediated by financial stability and the significant association between financial inclusion to economic development is also partially mediated by trust. The main implication of the study is that UPI is helping people in more than one way. It is not only supporting financial literacy but also contributes to financial inclusion and economic development of the poor, indirectly.

CONCLUSION

Advancement in technology has changed the system of payments in India. Demonetization has played an important role in the growth of digital payments in India. UPI allows a person to pay directly from his bank account, both online and offline, to different merchants with just one click without the hassle of typing passwords or card details. It simplifies the process and provides one single interface to make money transfers quick and hassle-free. These features motivate the users to adopt the facility extensively.

Reports have revealed that people have a positive attitude towards the adoption of UPI for ushering in a cashless society in India. UPI has witnessed exponential growth in the past years, taking a large share of the market from players such as PhonePe, Paytm, and Google Pay. The surge in UPI transactions has increased consumer interest in paying bills, recharging mobile phones, and buying goods on e-commerce platforms. UPI Payments' impact on the Indian market is enormous and has made a difference in payment methods and shopping sites used by consumers.

By 2023, 60 billion UPI platform transactions are projected to account for more than 50 per cent of India's total digital payments.

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