Unified Payment Interface (UPI): A Catalyst Tool Supporting Digitalization – Utility, Prospects & Issues

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Abstract: The Unified Payment Interface (UPI) launched by the national payment corporation of India (NCPI) is one of the most brilliant, modernized and cost effective innovation that is capable of making a remarkable mark upon Indian economy which has already taken its strides in the marathon towards digitilaization. This new interface is designed to enable bank account holders to send and receive money from their Smartphone with a single identifier i.e either a Aadhar number, mobile number, virtual payment address or a QR code without entering any bank account information or details. UPI allows the customer to make transactions both big and small instantly and that too free of cost. Though UPI is loaded with clear vision and superior objectives from the government and the NCPI it is still far from adoption as there are technical, psychological and fundamental factors responsible The current paper explores and discusses various dimension of UPI ranging from its concept, formation, utility, challenges, factors responsible for its adoption and its impact upon the stakeholders of its ecosystem. The study concludes that UPI is a tool with compatible features that can make monetary transactions easy and affordable to the customers though it is difficult to sideline the challenges. A strong Aadhar platform (UID) combined with statistics for the country pertaining to increased financial inclusion, Smartphone adoption and telecom subscription indicate positive prospects for UPI whereas competition from mobile wallets and possible cases of failure from banks to overcome technical errors especially relating to the front-end platform designed by them may negatively impact the scope of this innovative payment tool.

I. INTRODUCTION

The electronic device called Smartphone has brilliantly become the part and parcel of people personal, professional and financial life. There has been no other device like the Smartphone that has been able to create an impact so deep and influence human activity to such an extent. And therefore it can be easily inferred that the Smartphone is capable of bringing in desirable changes in a person's routine activities if used as an effective tool. The Government of India was not late in realizing this and therefore tried to optimize this trend of digitalization towards its revolution against black money and financial inclusion. Thus out of the several schemes and innovation that the Government brought forward to attain its objective one significant product was the "UPI" (Unified Payment Interface).

UPI is a system that powers multiple bank accounts into a single mobile application (of any participating bank), merging several banking features, seamless fund routing and merchant payments into one hood. National Payments Corporation of India (NPCI), the umbrella organization for all retail payment systems in India has taken up a new initiative of implementing "Unified Payment Interface" to simplify and provide a single interface across all systems. The new interface is designed to enable all account holders to send and receive money from their Smartphone with a single identifier which can be either the Aadhaar number, mobile number or the virtual payments address –without entering any bank account information. UPI is a mobile interface and will thus work only on mobile phones. It will allow customers to instaneously transfer funds across different banks with the use of virtual address such as cutomersname@sbi.com, customersname@axis.com. The customer will be able to create the virtual address on an UPI enabled bank app and this will eliminate the need to exchange sensitive information such as bank account number during a financial transaction. The National Payment Corporation of

India conducted the pilot launch of UPI with 21 member banks on 25th August 2016 by Dr. Raghuram G Rajan, Governer –RBI at Mumbai. Since its launch banks have started to upload their UPI enabled Apps on Google Play Store.

II. RESEARCH METHODOLOGY

The current study uses explorative approach to understand, discuss and bring out the issue relevant to the title. It depends upon statistics from government, financial regulators, press-release and articles from RBI, NCPI, TRAI, IBA and regulatory bodies. Information has been drawn from e-journals, articles from renowned analyst and newspapers.

ADOPTION AND UTILITY

Unified interface provides significant advantage from current systems to take mobile payments to next level. Its value lies in using customer's mobile phone as the primary device for all authentications and authorization for both "Direct Pay" (push) and "Collect Pay" (pull) transactions. In order to use the UPI application the customer has to download the UPI application from the google play store or the banks website. The customer then has to go for a one time entry of his personal details, password and link his desired bank accounts which he wants to use via UPI. After this the customer creates his virtual ID (e.g customersname@sbi.com) which is his identity on the UPI and can be shared with the opposite party to receive payment. The customer then receives an OTP after which he generates his six digit M-PIN. After successful registration the customer can log into his account and with the help of MPIN carry out variety of transaction even for a very small amount of one rupee to a maximum of one lakh. In order to request for money the customer can select the option of "pull" or collect money and enter the virtual address of the payer/opposite party. The payer gets a notification on his mobile. Payer then decides to click on accept or decline. In case of "accept payment" the payer enters his MPIN to authorize the transaction and thus the customer gets his amount.

In case the customer wants to pay an amount he undertakes the option of "pull" i.e sending money and enters the virtual address of the payee/opposite party and makes the payment after authorizing it with his MPIN. There is also an option of making payment via UPI through the "QR Code".

One of the most beneficial features of UPI app is that you do not need multiple apps for various banks accounts and is transactions are free of cost. A single UPI would serve for many bank accounts. Moreover it is not mandatory to use the app promoted by your bank. Your bank account may be with axis bank but you can use the UPI app of ICICI bank.

One of the other significant and unique features of "UPI" is that it has the pull option for requesting money from the debtor. It saves the customer who is the requestor or creditor from making calls, sending sms or letters to the debtor for requesting money. This adds a professional touch to the whole transaction and it would not be so easy for the debtor/opposite party to give excuses for not making payment once he receives

the payment request/notification on his phone which he has to either accept or decline. In case if he presses "accept" the payment is automatically credited to the payee.

It is not surprising that mobile wallets have flooded the market. Popular wallets like Paytm, Mobikwik, FreeCharge, SBI Buddy, HDFCPayZapp, ICICI pockets, LIME, OlaMoney, Airtel Money etc offer attractive offers, discounts and cash back to customers. Majority of the business enterprises resorting to e-commerce want the customer to use their own launched mobile app. Thus each time the customer faces the dilemma upon selecting a particular app. UPI is a one stop solution to this as it offers a very easy mode of payment. There is no transaction cost and there is no upheld task of loading money into the wallets. The money remains with the bank earning interest and the customer can transfer it at any time as required directly from the bank.

The UPI ecosystem functions with the following three key set of players:
- ✓ Payment service providers (PSPs) who will provide the interface to the payer and the payee. The interoperability will ensure that, unlike wallets, the payer and the payee can use two different PSPs.
- ✓ Banks, which will provide the underlying accounts for the payer and payee. In some cases, the bank and the payment service providers may be the same.
- ✓ NPCI , which will act as the central switch to determine the virtual payment address, effecting credit and debit transactions through the immediate payment service platform (IMPS) and settlement of funds across banks.

III. LITERATURE REVIEW

India has over a billion connections with around 240 million smartphone users and is expected to grow to 520 billion by 2020 (BCG estimates, 2016). The National Optical Fibre Network initiative will connect 2500000 Gram Panchayats across rural India and increase adoption of data services. The Pradhan Mantri Jan Dhan Yojana through 226 million accounts and 183 million cards (as on 27th July 2016) has provided the infrastructure for universal access to banking. The issuing infrastructure is largely in place and the launch of UPI will provide a significant fillip in the proliferation of low-cost acquisition infrastructure by allowing smart phones to substitute costlier point of sale (PoS) devices.(Rajiv Anand, 2016).

Excitement over the growth of mobile payments perpetuated the phenomenon of disconnected Islands and disjoints experiences. With UPI there is no need of any other payment app at all. On the other hand if one wants to keep a particular mobile wallet UPI could enable the interoperability of wallets allowing users to transfer funds from one wallet to another. Since RBI has allowed banks to become PSPs (Payment Service Providers) mobile wallets are cut of the picture at the moment. So if mobile wallets represent any threat to proprietary solutions (banks), UPI comes as a boon for them.(Kate, 2016).

Another landmark achieved through UPI is the usage of open source technology to build enterprise class architecture of high throughput and high volume. UPI is expected to

handle 10-15 thousand transactions per second [TPS] at its peak with daily volume of at least 10 million transactions. So, the backend architecture needs to be really robust, scalable and fast. The key point is that it did not use the expensive, commercially available app servers, message queues etc. The architecture is primarily build on open source software which is rarely used in a system of this scale. (Chakraborti,P,2016)

Using UPI, merchants can now remind customers to pay. Merchants can also create part payments asking the customer to pay a minimum say 10 percent up front and remaining on delivery of product or service. They can even set up specific dates for the customer to pay by, simplifying the collection process that takes multiple phone calls and reminders today. Customers need not worry about their payment information being stored at the merchants' side. This would definitely help the small businesses for whom customer's trust level is low and the existing payment gateway costs are too expensive. Another point to ponder is why India has such less tax payer base in a population of over 1.2 billion people. Is 98% of our population earning below 2.5 lakh per year? This is one of the issues that needs to be addressed and hopefully with many more transactions moving electronic and records of the same being available many more people should fall under the tax net be it small merchants, professionals etc. Will this segment of society adapt to electronic modes of payment so that the nation can benefit from higher tax is a question. (Navroze Dastur, 2016).

IV. CHALLENGES

Every innovation brings with it several challenges and threats some of which are gradually treated over by time and some linger on forcing the user to make the adjustment and UPI is not an exception. Small but significant UPI has its own challenges which are as follows:-

- ✓ A foremost challenge a user of UPI has to f ace is the dilemma whether the party to whom he wishes to make payment is registered on UPI or not and if he/she is registered then what is the VPA (Virtual payment address) or registered mobile number of that person.
- ✓ The four party model of UPI where the customer of one bank is at the liberty to use the application of another bank creates a gap and a quandary incases of failure of transaction and makes grievance redressal difficult as the customer may remain confused as to whom should the problem be addressed to. Many a times the customer takes his issue to the bank which holds his account but at the same time the transaction may not have been visible to his bank as it was performed with the UPI application of some other bank.
- ✓ Another challenge the UPI faces is that in framing its enface the NCPI creates and offers only the backend solution and lets its partner bank create the front end application and because of this many banks have tried to adjust the UPI into their existing apps thus giving rise to a range of issues.
- ✓ Dissimilarities in the screenplay and options for UPI app for various banks adds to the confusion of the customer

and also makes training and demonstrations a bit difficult to the new user.
- ✓ One obvious challenge which wills detriment the use of UPI is that it currently works only on android. Thus Smartphone with other inbuilt software would not be able to work with UPI. And it is less likely that a customer having a Smartphone using software other than android will immediately switch his device to an android one just to adopt UPI.
- ✓ Although India can boost of having position of second largest Smartphone user base in the world out beating even the US (Indian Express,2016), the penetration of Smartphone within the country especially the rural penetration is still comparatively less.
- ✓ Banks aren't completely computerized which adds to the list of challenges for UPI. Implementing UPI will mean training merchants, staff, retailers, improving point of sale systems and upgrading existing technology among others all of which translates to significant investments. Anyhow these will be required to ensure wide scale adoption of UPI.
- ✓ Despite the propagation and promotion of UPI and other digitalized payment modes by the government and even after the strong move on demonetization people have shown a huge dependence on cash which is mainly due to lack of financial literacy, education, awareness and most importantly strongly inbuilt attitudes and habits which will take a considerable time to reform.

V. CONCLUSIONS

Whether UPI will be able to create the revolution towards which it is targeted is depended upon various factors. However there are both positive and negative indicators speaking about the prospects UPI for the days to come.
- ✓ Financial inclusion or access to banking services is a pre-requirement for adoption of UPI services and fortunately this prerequisite is gaining momentum since the launch of Pradhan Mantri Jan Dhan Yojana on 28th August 2016. Within months of launch of this scheme 19.72 crore bank accounts were opened with deposits worth Rs. 28699.65 crores. A record of 125,697 bank correspondents were also deployed (Narendra Modi, 2016).These developments prove to create a fertile platform for the growth and proliferation of UPI among masses.
- ✓ The TRAI telecom subscription report as on March 2016 saw 7 million new mobile subscribers added on various telecom networks. The total number of wireless internet subscribers as on 30th Sept 2016 stands at 346.22 million. India is the second largest market for Smartphone device after China. India holds enormous growth potential particularly in the field of mobile internet due to high population and increasing penetration of internet into rural population. These statistics again indicate a huge potential for adoption of UPI by the Indian customers.
- ✓ Until now the government has entrusted the responsibility of executing the UPI services to only banks thus keeping the wallet players out of the game. This has acted as a huge opportunity for banks to leverage upon consumer

transactions mainly because of the accountability and trustworthiness that have long been a part of culture and tradition of banks as a result of which people have always entrusted the banks to look after their hard earned money. It is obvious that people have more faith in banks compared to the private companies offering mobile wallet services. Banks should therefore optimize this trust and effectively support and promote the UPI platform to make payment ecosystem smooth and secure for customers.

✓ In case of UPI the front-end platform is to be designed by the banks. If banks fail to work effectively on this then consumer adoption of UPI will be difficult more likely because private mobile firms have sincerely invested in creating merchant network to ensure smooth and failure free payment process. Moreover they have also included cashbacks and discounts to attract customers atleast but for a trial usage. Already the mobile wallet companies of India have a larger customer base compared to existing bank supported apps combined. If UPI fails to deliver its promise in creating a one stop solution for financial payments then banks will loose their revenue to private fintech companies.

The UPI allows consumers to transact directly through their bank account with a unique UPI identity which syncs to Aadhar's verification and connects to the merchant for the settlement and lets the issuing bank to close the transaction. In a single swipe the transaction is complete without any middlemen (like Visa and Master Card swich) to facilitate the transaction. This also has been possible because India is the only country which has been able t register more than one billion of its population (DNA, 2016) on the identification database called Aadhar. Thus a robust Aadhar platform is one of India's superior achievements which will aid the country to digitalize its payment services through UPI.

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