

E-Payment: A Case Study of Unified Payment Interface

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Abstract: *Demonetization and the Digital India initiatives, the Indian banking industry has been working hard to make digital payments more widely accepted. In order to achieve paperless and cashless economy, the Unified Payment Interface (UPI) presents a potentially groundbreaking method for transferring money through a virtual payment address created by the National Payment Corporation of India (NPCI). Therefore, it is essential to evaluate its capacity to aid in the attainment of a digital economy. The use of mobile payment facilities by smartphone users, financial institutions, and especially banks has been facilitated by the proliferation of smartphones, technological advancements, and efficient internet communications. This paper aims to analyze the growth and development of the Unified Payment System (UPI) in retail digital payments over time. The research was conducted by examining various secondary data sources. Research has shown that the expansion of digital payments has risen notably, particularly within the retail payment industry utilizing the UPI platform.*

Keywords: *Digital India, Retail Payment, UPI, NPCI and Retail digital payments*

1. INTRODUCTION

India's banking sector is currently undergoing significant structural changes, coupled with an increased reliance on Information and Communication Technology (ICT). This shift has greatly transformed the banking landscape from a paper-based system to a digital one, enabling quick and secure fund transfers between bank accounts. Furthermore, ICT has allowed for various electronic payment options, commonly referred to as digital payment services, among which UPI (Unified Payments Interface) has emerged as a favorite. This e-payment system permits users to conduct a myriad of financial transactions via a smartphone. By using a virtual payment address (VPA), users can send or receive money on the UPI platform without disclosing their bank account information. However,

to carry out UPI payment transactions, individuals must possess a bank account and register on a UPI application. For businesses, a current account is necessary, similar to how a point of sale (PoS) system operates. Examples of UPI applications include SBI Pay, Union Bank UPI App, Phonepe, G-Pay, BHIM Axispay, and WhatsApp Pay. At present, banks and fintech companies are providing Unified Payment Interface services through their individual mobile applications and also Other Financial service providers Application. The Unified Payments Interface (UPI) is a platform that integrates multiple bank accounts into a single mobile application from any participating bank, consolidating various banking functions, facilitating smooth fund transfers, and enabling merchant payments all in one place. It also provides the "Peer to Peer" collect request option, which can be arranged and settled according to individual needs and convenience.

Considering this background, NPCI initiated a pilot launch involving 21 member banks. This pilot was officially launched on April 11, 2016, by Dr. Raghuram G Rajan, the Governor of RBI, in Mumbai. From August 25, 2016, onwards, banks began to release their UPI-enabled apps on the Google Play store.

2. OBJECTIVES OF THE STUDY

1. To examine the expansion of the Unified Payment Interface (UPI) system.
2. To evaluate UPI's role within the digital payment landscape.
3. To understand the development of UPI in retail digital transactions.

3. RESEARCH METHODOLOGY

This study employs an exploratory research approach to investigate the necessary data obtained from secondary sources, including published research articles, RBI reports, government documents, and more.

4. DIGITAL PAYMENTS

Payments made with digital instruments, such as mobile wallets, mobile payment applications, bitcoin or virtual currency coins, and other electronic payment systems" are referred to as digital payments. Digital banking is the process of using technology to conduct smooth financial transactions. The RBI defines a "digital transaction" as one that is completed through a smooth system and that does not require currency in either or both of the two legs (payer, receiver, or both). This covers financial transactions that are conducted by digital or electronic means in which money is sent or received by both the sender and the recipient. Customers' priorities have changed from using paper-based payment methods for financial transactions to using electronic ones as a result of the widespread use of digital payments. In the retail industry, electronic payment methods have played a major role in advancing financial inclusion more broadly. Businesses are using digital payment systems to perform their business transactions in order to take advantage of the new opportunities presented by the digital economy. Nonetheless, there are issues that must be resolved immediately that prevent the widespread use of digital payments. India's relationship with cash has changed as a result of the growing use of digital payments in retail commercial transactions. The quick growth of retail digital payments with the introduction of digital payment mechanisms like card payments, IMPS, UPI, etc., is evidence of this. Although cash is still the most popular method of payment, it is increasingly being seen as an economic asset that may be used to store wealth. The future of payments will be defined by competitiveness, speed, and ease of use. The average person always views currency as the king, but since the introduction of the UPI payment system, digital has come to be revered as a deity. Two rapid payment systems that have increased retail digital payments in India are Immediate Payment Systems (IMPS) and Unified Payments Interface (UPI). and since demonetization, the e-payment ecosystem has expanded quickly. The development of the digital

payment ecosystem has been helped and expedited by continuous developments in new technology, creative payment solutions, the appearance of industry players that act as barriers, and government initiatives.

5. UNIFIED PAYMENTS INTERFACE (UPI)

In accordance with "The Payments and Settlements System Act, 2007" clauses To run retail payments and settlements systems inside India's payment ecosystem, the Reserve Bank of India (RBI) and the Indian Banks Association (IBA) formed the National Payments Corporation of India (NPCI), an umbrella organization. NPCI has created a cutting-edge payment tool known as the "Unified Payment Interface (UPI)" to enable digital payments. It is a digital payment framework that can be used with any member bank's mobile application to carry out a variety of banking tasks and retail business payments. "Peer to Peer (P2P)" collection requests can be organized and billed based on convenience and necessity. UPI was first launched as a prototype program with 21 participating institutions. Dr. Raghuram G. Rajan, the RBI governor at the time, officially opened it in Mumbai on April 11, 2016. Participating banks have been posting their UPI-capable apps to the Google Play market from August 25, 2016. As of March 2019, 142 banks were using UPI, and 799.54 million transactions of Rs. 133,460.72 crore were made each month. The single transaction limit was raised from one lakh to two lakh rupees in 2018 when the UPI platform was upgraded to UPI 2.0. A tech-enabled payment system called the Unified Payment Interface (UPI) makes it possible to quickly and easily move money between bank accounts with just a few clicks. Any UPI client app can be used, and one app can link to several bank accounts. Money can be sent or requested using a variety of payment methods, including IFSC, account number, mobile number, and virtual payment address. SIASC—Simplicity, Innovation, Adoption, Security, and Cost—are the main forces behind UPI.

6. RETAIL PAYMENT

Transactions with low denomination values and a large volume are referred to as retail transactions. The features that retail payment systems display are diverse. Specifically, they handle a large number of low-value individual payments. Large-value transactions are not the same as retail payments. First of all, a sort of payment processing system that

manages a sizable volume of low-value payments for the purchase and sale of products and services is referred to as a retail payment. They are utilized in more situations than just interbank transactions, such as online and in-person payments made with point-of-sale (POS) systems. Next, compared to high-value transactions, retail payments employ a variety of payment instruments, such as digital and paper-based techniques. Third, retail payments are usually managed by a range of payment service providers, including banks, post offices, and FinTech firms, in contrast to large-value payments, which mostly depend on central bank-operated NEFT and RTGS systems.

The payer (initiator), receiver (accepter), acquirers (receiver's bank), and issuers (payer's bank) make up the digital payment ecosystem. A system that links all of these parties via a paperless method of payment or money transfers is known as a digital payment ecosystem. According to the RBI database, the digital payment ecosystem in India consists of a number of digital payment tools, including M-Wallets, Prepaid Payment Instruments (PPIs), Unstructured Supplementary Service Data (USSD), AADHAR-enabled payment systems (AePS), Internet banking (NEFT, IMPS, and RTGS), and banking cards (Debit/Credit Cards). UPI is responsible for 1.53 billion transactions, or 58.47 percent of all digital payments. More than half of all transactions in the digital payment ecosystem are currently completed through UPI, which was created to support payment systems in retail digital payment transactions.

7. POSITION OF UPI IN INDIA'S DIGITAL PAYMENT ECOSYSTEM

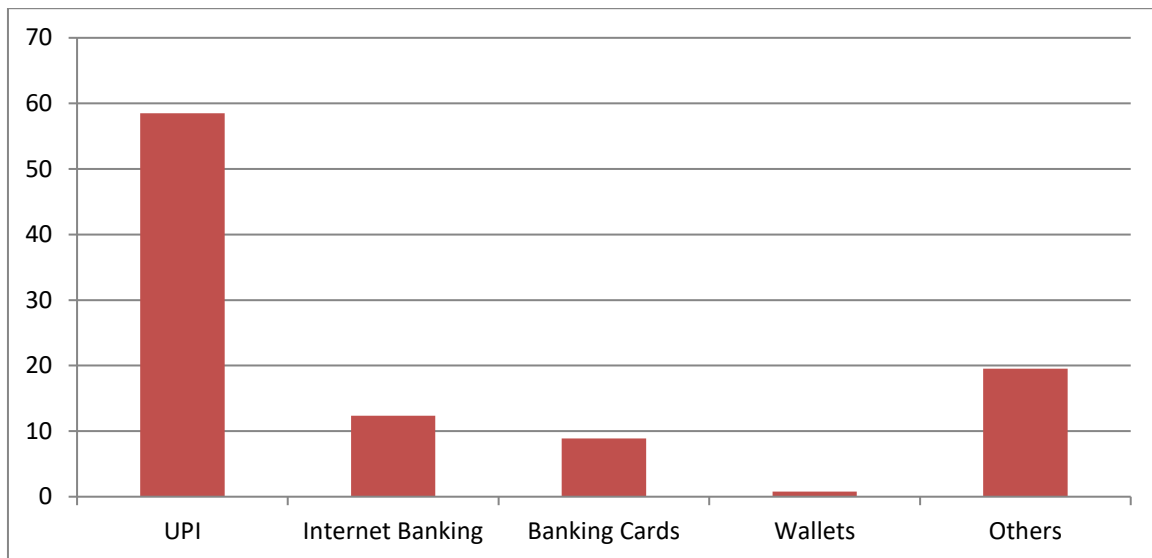


Fig. 1: Digital Payment and Settlement System data of March, 2019. (in terms of volume of transactions)

8. UPI STATISTICS AT GLANCE (2016 TO 2019)

21 banks participated in the NPCI's 2016 launch of the UPI service. UPI only contributed roughly 63 lakh transactions to digital payment services during the fiscal year 2016-17. The UPI railroad recorded 0.799 billion transactions in March 2019, the biggest in a single month since it started operations in August 2016, according to NPCI data. Even though the amount and volume of cash payments were

significantly lower due to the slowdown in economic activity prior to the outbreak, the RBI claimed that contactless payments were preferred over cash payments because of the need for social isolation during the corona pandemic. The quantity, volume, and size of retail digital payment transactions have increased dramatically, as has the number of transactions on the UPI platform. Table 1 shows the rise of UPI payments.

Table 1: Growth of UPI from 2016 – 2019

Month & Year	No. of Member Banks	Transaction	
		Volume (in mn)	Value (in Cr.)
Mar 2019	142	799.54	133,460.72

Mar 2018	91	178.05	24,172.6
Mar 2017	44	6.37	2,425.14
Mar 2016	21	0.00	0.00
<i>Source: https://www.npci.org.in/what-we-do/upi/product-statistics</i>			

9. PROGRESSION OF UPI IN RETAIL DIGITAL PAYMENT

Compared to other digital payment systems or online banking, UPI is thought to be safer and easier to use. Consequently, UPI can be used to transmit and

receive money instantaneously. People are using UPI payments, which is pushing companies to embrace digital payments. Table 2 below displays the UPI platform's utilization data for retail payments over the previous 3 years.

Table 2: Statistics of UPI on NPCI platform (2016 – 17 to 2018 - 21)

Year	Total Financial Txn	UPI transaction	% of UPI toTotal	Total Financial Txn	UPI transaction	% of UPI toTotal
	Volume(in Mn)	Volume (inMn)		Value (in Bn)	Value (in Bn)	
2016 – 17	7,138.40	17.86	0.25%	96,626.07	69.47	0.07%
2017 – 18	9,857.60	915.23	9.28%	1,13,552.76	1,098.32	0.97%
2018 – 19	16,806.25	5,353.40	31.85%	1,36,719.23	8,769.70	6.41%
<i>Source: https://www.npci.org.in/statistics</i>						

CONCLUSION

Digital payment and transfer methods include credit cards, debit cards, Internet banking (NEFT/IMPS/RTGS), mobile banking, e-wallets, Aadhar enables Payment Service (AePS), and the Unified Payments Interface (UPI). Through features like rapid payment by QR code, fee payments, financial transfers between wallets and bank accounts, contributions, insurance purchase and renewal, utility bill payment via Bharath BillPay, and more, UPI provides exceptional benefits. Users may now integrate their overdraft accounts and one-time payment mandates with improved security features thanks to UPI 2.0 from NPCI. "No need to add a beneficiary" is its special benefit. By using a Virtual Payment Address (VPA), customers may conduct transactions without disclosing technical information like their name, account number, or IFS code. Despite technological difficulties and cyber threats, UPI's main advantages provide it many chances in the modern digital environment. SIASC stands for Cost-effectiveness, Adoption, Innovation, Simplicity, and Security. It is becoming more and more popular, particularly in the retail payment sector, because smartphones make it easier to access than other

digital payment methods. UPI may be used by regulators to maximize financial inclusion in the nation. If authorities decide to impose a service tax on UPI in the future, they should exercise caution and concentrate on modernizing the current banking infrastructure to facilitate the provision of payment services by FinTech companies. PSPs must have efficient grievance redressal mechanisms in order to address customer complaints. The primary drawback of UPI is that only those with bank accounts are able to utilize it. The rural population that does not have access to banking is utterly mute. Future research might examine users' perceptions of UPI and other e-payment options, and the findings could be examined via the use of systematic behavior models.

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