

**The Indian Unified Payment  
Interface –  
UPI: Trends, Growth, Future  
and Challenges**

**Agpaytech**

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Agpaytech's Research  
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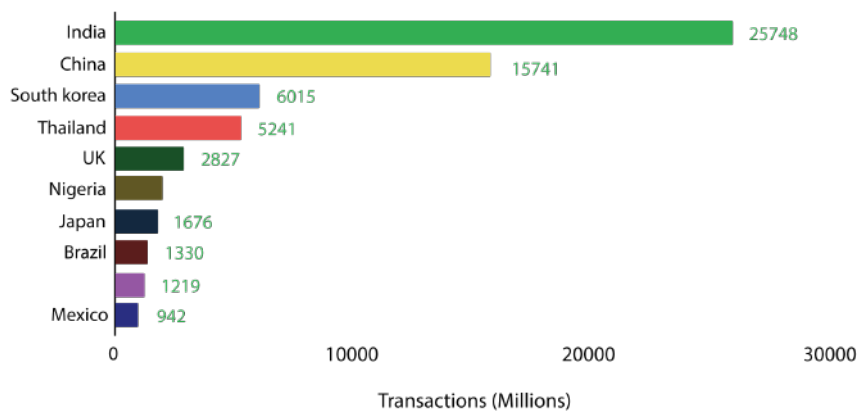
## The Indian Unified Payment Interface - UPI: Trends, Growth, Future and Challenges

Real-time payments (Real-Time Payments) are gaining acceptance in significant economies worldwide and are becoming immensely popular amongst citizens

In 2020, RTP payment methods were widely used across Asia-Pacific, with the most considerable volume of transactions observed in India, China, South Korea and Thailand. The chart hereunder demonstrates the number of real-time payment transactions in 2020. (Source: eMarketer, ACI Worldwide, Prime Time for Real-Time in collaboration with GlobalData, March 2021).

Figure 1 Top countries by Real-Time Payments transaction

### Top 10 Countries by Real-Time Payment Transactions 2020



Data Source: Koanadvisory

## Growth Projections of RTP payments volume, 2020 - 2025

According to IDC financial insights, RTP payments volume is poised to grow significantly over the years. The image hereunder depicts the growth estimation for RTP payments in South East Asia and India from 2020 to 2025. As is evident from the data, the UPI system payments volume is expected to grow up to Fifteen times by 2025 compared to the volume achieved in 2020.

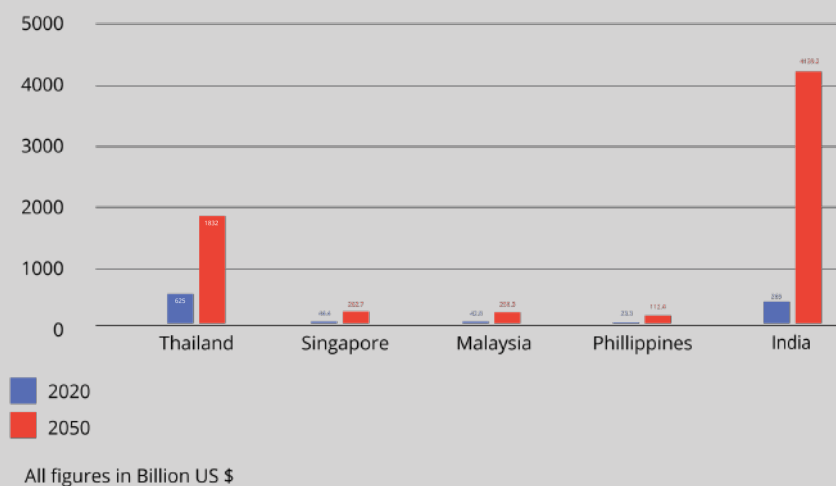
UPI's phenomenal growth potential has drawn global policy-makers' attention. It is now regarded as an essential institutional and public policy innovation.

\*Indian data essayed is only for the UPI volumes

Figure 2. Transaction value of real-time payments (RTP) in southeast Asia and India in 2020 with a forecast for 2025.

### Transaction value of real-time payments (RTP) in southeast Asia and India in 2020 with a forecast for 2025.

\*India only UPI payment mode has been taken into account



Data Source: Asia; IDC; Various sources (Central bank data); 2020

## Components of the Indian Payments System

India has long been known for its robust payments ecosystem. It has multiple modes of digital payments available to process domestic money transfers. Some of the most preferred methods are as follows:

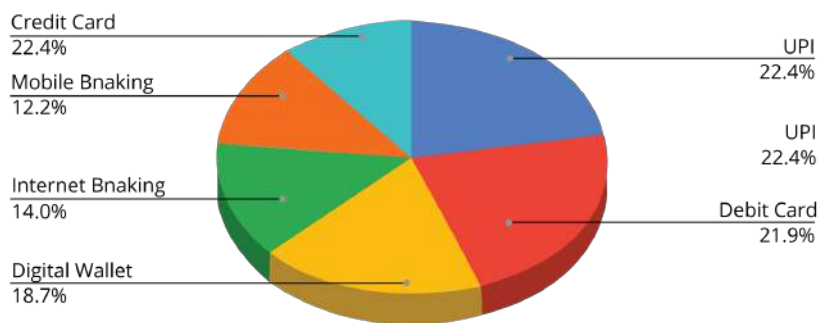
1. Internet Banking
2. Mobile Banking
3. Debit Card
4. Credit Card
5. Digital Wallet
6. UPI

According to research conducted by Koanadvisory in 2020, UPI turned out to be the most preferred mode of digital payments across the country, followed by debit cards and digital wallets. The chart below visualises the six modes according to their usage market share.

Figure 3. Preferred Modes of digital payments across India in 2020

### Preferred Modes of digital payments across India in 2020

April 23 to July 31, 2020; 13,087 respondents; 18 years and older; Online survey



Data Source: Koanadvisory

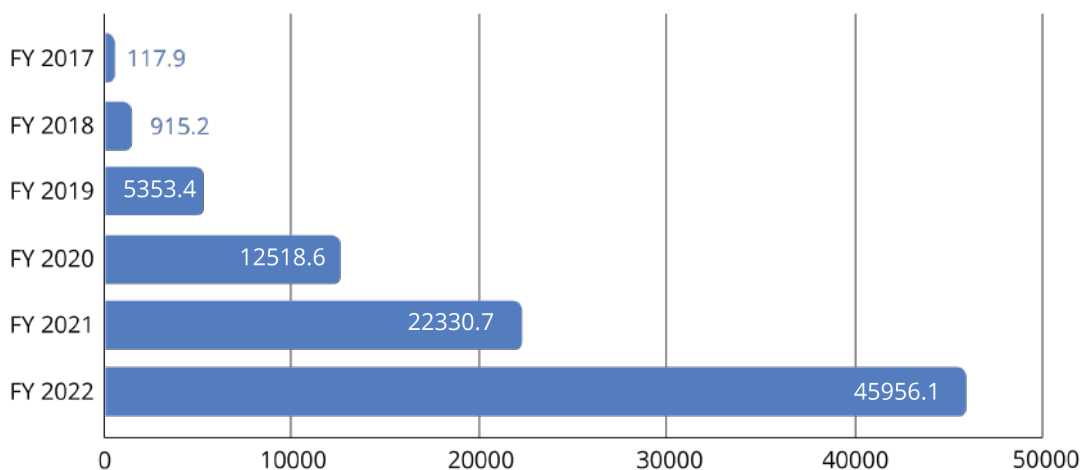
## UPI Payment Transaction Volumes

The volume of digital payments in India was over 45 billion in the Financial year 2022. The UPI system is demonstrating phenomenal growth thanks to increased penetration of innovative service applications and digital technologies; the chart hereunder portrays the Y-o-Y growth of the UPI-based digital payments volume across India from FY 2017 to FY 2022.

Figure 4. Volume of UPI-based digital payments across India from financial year 2017 to 2022

### Volume of UPI-based digital payment across India from financial year 2017 to 2022

(In millions)



Data Source: RBI Annual Report FY 2021-22

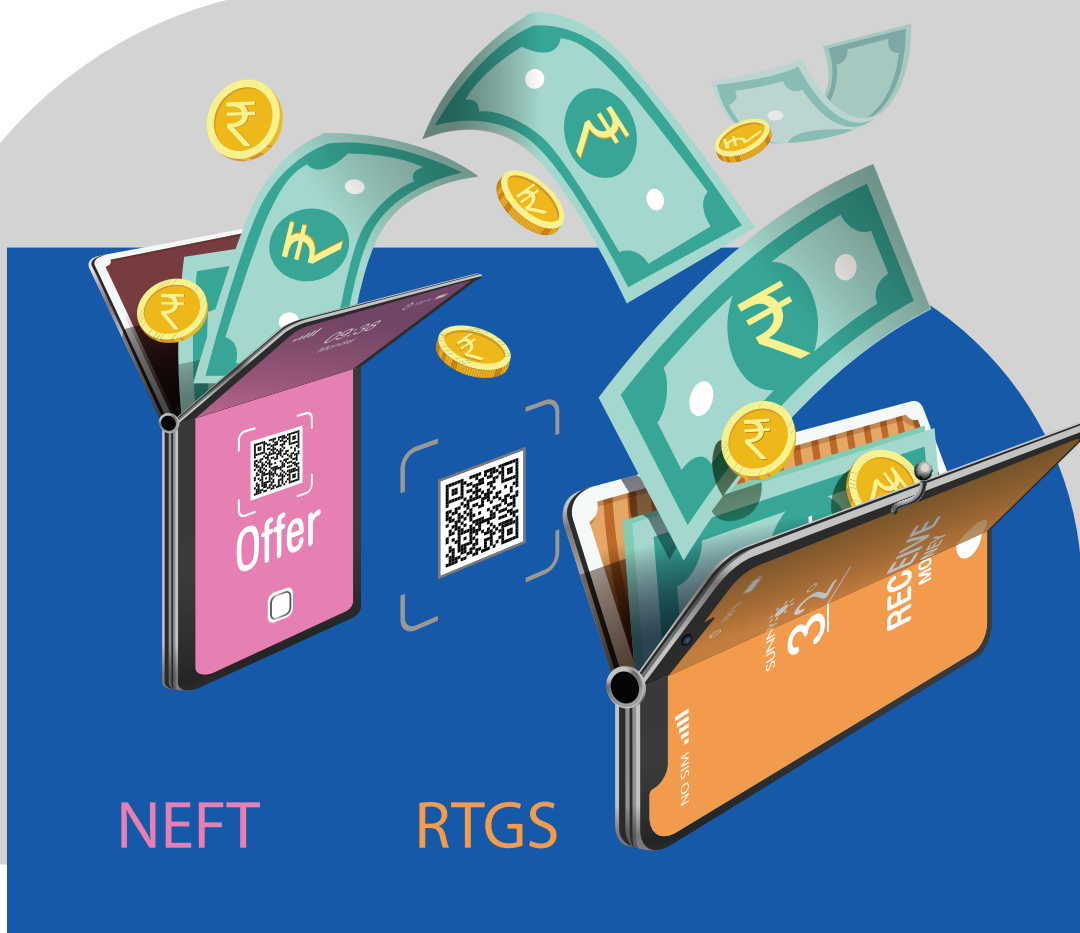
## Why is UPI so popular?

The UPI innovation has catapulted India far ahead in the payment platforms league globally. Now Indian citizens can transfer money by scanning a QR scan code or using the recipient's phone number, wherein many countries still use traditional methods such as card and cheque payments. This path-breaking technology has given rise to fintech companies that can access over 270 banks in India using a simple API and provide service to a new set of customers, enhancing financial inclusion in the country. Moreover, this service doesn't attract additional costs for the consumer, and this attribute serves significantly well in user acquisition and habit adoption.



## Who Owns the UPI

In India, the RTGS and NEFT payment systems are owned and operated by its Central Bank – Reserve Bank of India. Systems like IMPS, RuPay and UPI, are owned and operated by National Payments Corporation of India (NPCI), which is a not-for-profit entity promoted by banks.





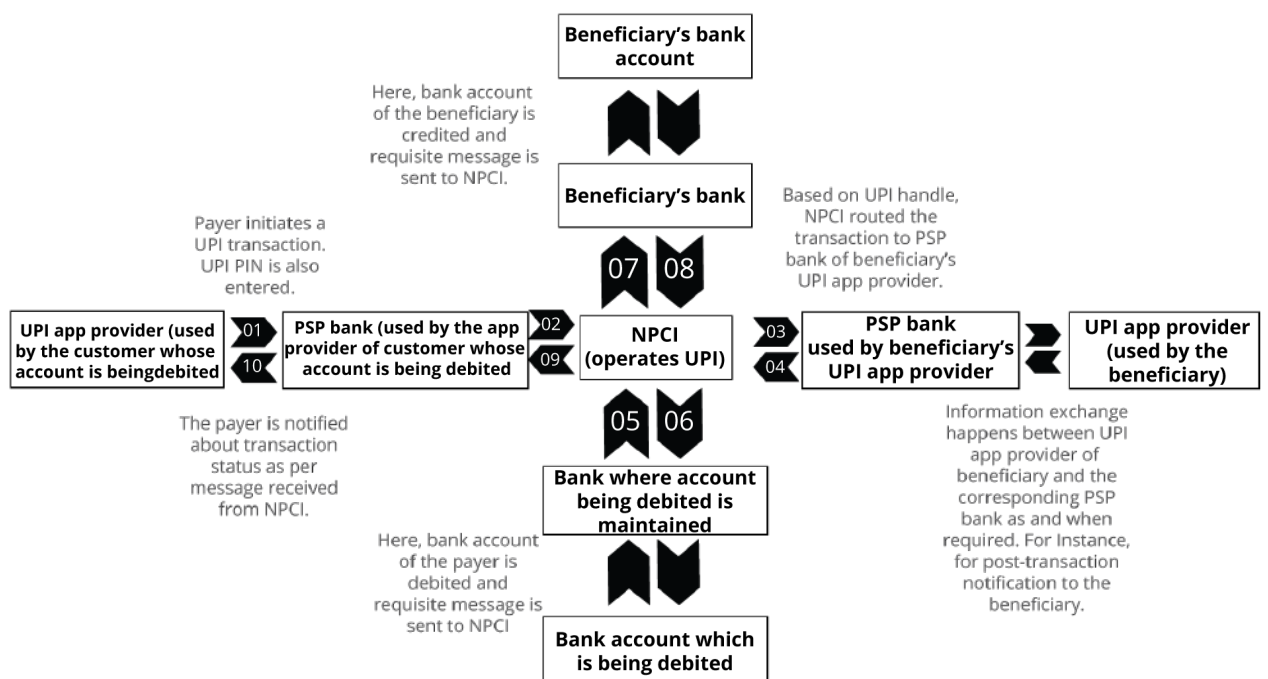
## The UPI Technology

According to Indiastack.org, at its core, UPI is a payments markup language that runs on a central switch operated by a bank-owned non-profit known as the National Payments Corporation of India (NPCI). In simple terms, there is one NPCI server to which all the licensed banks are connected. This server sends messages to and from between all the banks, with NPCI as the middleman.

One can think of the system as a three-tiered cake. At the base of this cake are the public rails provided by NPCI, which handle the routing of payment messages. Atop this lies the second tier, consisting of regulated banks - responsible for holding user funds and updating account balances. More than 270 of India's top banks are connected to the UPI system. The third and final tier is the fintech layer, through which payment apps and fintech companies can access the system.

Thanks to this system, a would-be payments provider or fintech app only needs to use one set of APIs to access all of India's consumer and business bank accounts.

Figure 5. Depiction of the transaction flow in UPI (Payer initiated)



Source: The Reserve Bank of India

## UPI and International Funds Transfer

The Monetary Authority of Singapore (MAS) and the Reserve Bank of India announced on 14 September 2021 their plans to link Singapore's PayNow and India's Unified Payments Interface (UPI) real-time payment systems by July 2022.

The PayNow-UPI linkage will enable users to make instant, low-cost fund transfers directly from one bank account to another between Singapore and India.

According to the MAS, this integration will facilitate fund transfers from India to Singapore using mobile phone numbers and from Singapore to India using UPI virtual payment addresses (VPA). The experience of making a PayNow transfer to a UPI VPA will be similar to that of a domestic transfer to a PayNow VPA.

The connectivity between PayNow and UPI is a significant milestone in developing next-generation infrastructure for cross-border payments between Singapore and India and helps fulfil the G20's financial inclusion priorities of driving faster, cheaper and more transparent cross-border payments.

Mr Sopnendu Mohanty, Chief FinTech Officer of MAS, stated, "By reducing the cost and inefficiencies of remittances between Singapore and India, the PayNow-UPI linkage will directly benefit individuals and businesses in Singapore and India that greatly rely on this mode of payment. Given that PayNow and UPI are integral components of their respective national digital infrastructures, the link between the two systems also paves the way for establishing more comprehensive digital connectivity and interoperability between the two countries."

## Challenges – Who is paying for this service?

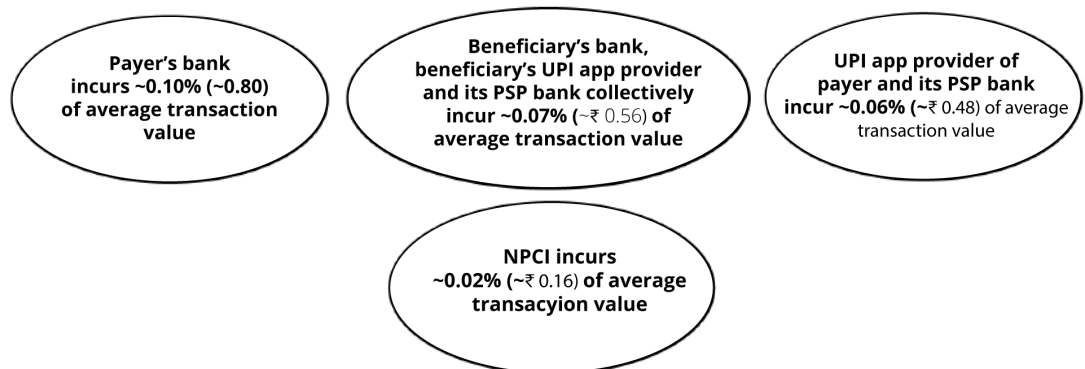
In a recent discussion paper, RBI said, "UPI as a funds transfer system is like IMPS (Immediate Payment Service; it is a chargeable service offered by Indian banks). Therefore, it could be argued that the charges in UPI need to be similar to charges in IMPS for fund transfer transactions. A charge could be imposed based on the different amount bands. Merchant payments using UPI do not require installation of costly infrastructure by merchants as UPI QR codes are used. The cost of merchant infrastructure for UPI is lower as compared to the cost incurred in a card-based acceptance infrastructure."

Furthermore, it stated that an efficient payment system requires that the fees/charges/prices are appropriately determined to ensure the optimal cost to users and appropriate return (revenue / earning) to operators. An ideal situation would be to leave such cost-related frameworks to be market-determined, based on demand, supply, growth and user considerations.

Through this discussion paper, RBI requested public and stakeholder feedback, based on which it would endeavour to structure its policies and streamline the framework of charges for different payment services/activities in the country.

Figure 6. An approximate cost of processing a UPI P2M transaction with an average value of Rs. 800 (Approx: US \$10)

This box depicts ~ cost incurred by different stakeholders in a UPI-P2M transaction with average transaction value ~ ₹800/-



Collectively, the stakeholders incur ~₹2/- for processing a UPI - P2M transaction with average transaction value ~ ₹ 800/-

Note: Costs mentioned above reflect approximate figures. they do not reflect cost incurred in giving incentives to users for increasing the use of digital payments.

Source: Discussion Paper on Charges in Payment Systems, The RBI.

Through this discussion paper the RBI wanted feedback on the following questions:

1. In the context of zero charges, is subsidising costs a more effective alternative?
2. If UPI transactions are charged, should MDR for them be a percentage of transaction value or should a fixed amount irrespective of the transaction value be levied?
3. If charges are introduced, should they be administered (say, by RBI) or be market determined?

On release of this discussion paper the Finance Ministry in India observed that UPI is a digital public good and there is no consideration to levy any charges for such services. It further added that the cost of recovery has to be met through other means, and the government has provided financial support for the digital payments ecosystem in the country and the ministry has announced assistance this year as well to encourage further adoption of digital payments.

One of the most significant causes of UPI's rapid adoption is the zero merchant discount rate (MDR), a charge levied on merchants for processing the transactions by banks. This zero charge for consumers and merchants was mandated by the government since 2020. However as the box above depicts that the stakeholders incur ₹2 (Approx: US \$0.025) for processing a UPI person to merchant transaction with an average transaction value of ₹800 (Approx: US \$10); who foots this bill?



The government subsidises this charge. In December 2021, it approved a ₹1300 Crore (Approx: US \$162.5 Million) towards compensating the zero MDR regime. The primary objective of this grant was to increase the popularity of the UPI system. Due to this zero-charge regulation, e-commerce sites and merchants have exuberantly adopted UPI.

AGPAYTECH's ground research suggests that small offline merchants prefer UPI since it is easy to carry a QR code, either as an image stored in their mobile phone gallery or as a small poster on the shop's wall. Companies like Bharatpe have achieved deep penetration in the unorganised retail sector in India, and it empowers small shop owners to accept digital payments from their customers. Furthermore, UPI eradicates the need to maintain expensive and cumbersome POS machines used to swipe cards that are difficult to carry and require frequent battery charging.



## Linking UPI with Credit Card

In June 2022, the RBI announced allowing the linking of RuPay credit cards to the UPI network. Mr T Rabi Sankar, Deputy Governor RBI stated, "Currently, UPI is linked through debit cards and bank accounts. Now, you can link your credit cards, too, which improves the journey. How the pricing will work out, that we will have to see as we go forward."



## Industry Opinion on UPI charges and Conclusion

Payment industry stalwarts in India opine that UPI charge levying should be phased in slowly. Initially, the fee must be equivalent to a percentage of the transaction value with a cap for large ticket payments.

This implementation must aim to protect the interests of the unorganised retail sector and promote low-value transactions to ensure and enhance UPI's mass popularity.

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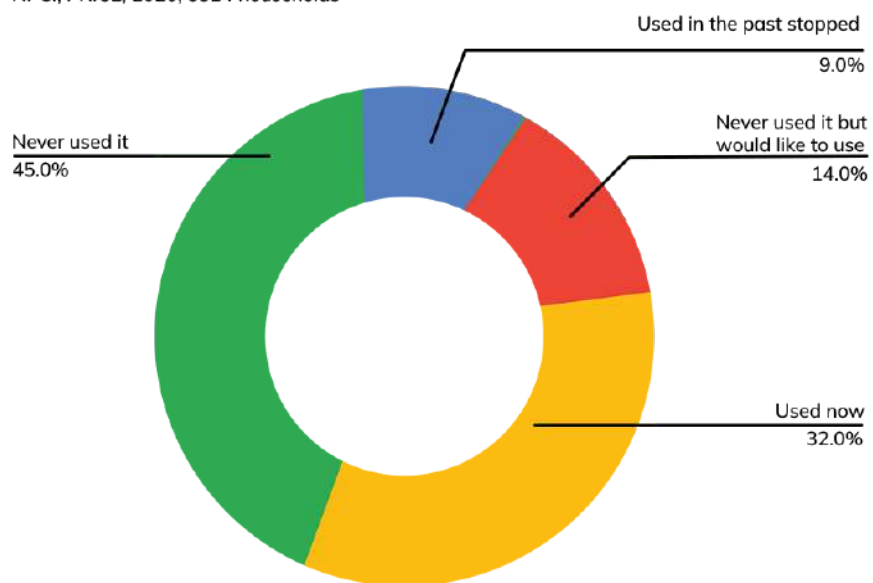
Some experts also feel that prominent e-commerce players reap the most considerable benefits of the UPI payment infrastructure. In the usual course of payment receipts via a payment gateway, they have to pay charges to the gateway service provider; however, they avoid paying any payment gateway fees while accepting UPI payments and hence promote this mode amongst their customers. According to them, the government, in turn, is ending up subsidising these players at the taxpayer's cost, which needs to be addressed

According to a survey conducted on digital payments in 2020, 32% of households in India used some form of digital payment method. Additionally, 9% of the households surveyed used digital payments in the past but had stopped. Only 45% of respondents neither used digital payment methods nor would like to use them. Further analysis of this data suggests that 46% of households are either using a digital payment method or are open to it. This feat is significant given India's large population and diversity.

Figure 7. Share of households who used digital payments in India in 2020

### Share of households who used digital payments in India in 2020

NPCI; PRICE; 2020; 5314 households



Source: NPCI, 2020

It is a well-established fact that UPI is an innovative digital payment framework that has put India at the forefront of digital payment initiatives and expedited India's journey towards a significantly cashless society. Although a significant part remains to be covered, it is nevertheless a good start. And linkage of credit cards to this payment framework will bring more users to the UPI ecosystem's fold.

## Reference

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National payment corporation of India enabling digital payment in India (NPCI.org.in, n.d. )

India volume of UPI digital payemnts 2022 Statisa Pdf

India preferred modes of digital payment 2020 statista

## About Agpaytech

Agpaytech Ltd. is a company pioneering in the Fintech Space with a focused approach to building robust technologies for eCommerce Card Processing Solutions for Payment Service Providers (PSPs). Additionally, we provide Compliance and Regulatory Umbrella, Remittance-as-a-Service White-Label Solution, Foreign Exchange, Cross Border Payments, and digital currency technology. We have partnered with multiple banks, non-banking financial institutions, and corporate organizations to create a solid service delivery model for them and their customers to ease their international remittances and payments concerns.

Website: [www.agpaytech.co.uk](http://www.agpaytech.co.uk)

**United Kingdom - AGPAYTECH LTD.**  
3rd Floor, 86-90 Paul Street London  
EC2A 4NE, UK: [info@agpaytech.co.uk](mailto:info@agpaytech.co.uk)

**United States of America - AGPAYTECH**  
USA LLC, 9701 Apollo Dr Suite 100 Largo  
MD, 20774, USA: [usa@agpaytech.com](mailto:usa@agpaytech.com)

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