DIGITAL PAYMENTS AND THEIR IMPACT ON THE INDIAN ECONOMY

INTRODUCTION

India, with a 1.38 billion population, has a huge potential for digital payments. As of October 2021, the country had around 1.18 billion mobile connections, 700 million Internet users, and about 600 million smartphones. These numbers are growing rapidly each quarter. With about 25.5 billion real-time payment transactions, India ranked first in the world in terms of the number of transactions in 2020.

In 1996, Industrial Credit and Investment Corporation of India (ICICI) introduced online banking services in India, by using electronic banking at its branches. Later in 1999, banks such as HDFC, IndusInd, and Citi launched online banking facilities. The trend continued to grow with increasingly more banks launching net banking services in India. This marked the beginning of the digital transactions era in India – several new banks started offering services to users.
In 2008, the National Payments Corporation of India (NPCI) started its journey. It was formed by the Reserve Bank of India (RBI) and Indian Banks’ Association (IBA) in order to create a robust payment and settlement infrastructure in India. Since then, it has launched several products such as Aadhaar Enabled Payments System, Bharat Bill Payments System (BBPS), BHIM, and Cheque Transaction System.

Newer models are emerging rapidly; currently, there are around 10 different types of digital payment methods in India. These include:

- **Banking Card** – This was launched by the Central Bank of India in India in 1980, in the form of the first credit card. MasterCard was introduced in 1988, and until 1993, several PSU banks started issuing credit cards.
- **Unstructured Supplementary Service Data (USSD)** – The USSD functionality was launched in 2016. This is a mobile banking facility enabling users to use mobile banking without smartphones or an Internet connection.
- **Aadhaar Enabled Payment Systems (AEPS)** – This is a bank-led model which allows online interoperable financial inclusion transactions at point-of-sale (PoS) through the business correspondent of any bank using the Aadhaar authentication.
- **Unified Payments Interface (UPI)** – UPI was developed by NPCI in 2016; it facilitates peer-to-peer, person-to-merchant transactions.
- **Mobile Wallet** – This is a virtual wallet that stores payment card information on a mobile device.
- **Bank Pre-Paid Card** – Under the motto “Pay Now, Use Later,” the pre-paid cards allow users to buy things with funds available in their cards.
- **Point of Sale** – Point of Sale (PoS) is a technological instrument provided by a Merchant Establishment (ME) to carry out the sale of goods or services to customers in a cashless environment.
- **Internet Banking** – This is an online banking method that enables customers of a bank or financial institution to carry out transactions through a portal.
- **Mobile Banking** – This is a service provided by banks and financial institutions to carry out financial transactions through a mobile device.
- **Micro ATM** – These are portable devices allowing banking transactions through card
swipe machines.

In order to transform India into a digitally empowered society and knowledge economy, the Government of India launched Digital India programme in 2015. The programme focuses on three main vision areas: digital infrastructure as a core utility to every citizen, governance and services on demand, and digital empowerment of citizens. Through the programme, the government wants to ensure the availability of high-speed Internet, provide mobile phones and bank accounts to every citizen, ensure availability of services in real-time from online and mobile platforms, make financial transactions electronic and cashless, and ensure digital literacy and availability of digital resources across the country.

GROWTH IN DIGITAL PAYMENTS IN INDIA

In India, digital transactions started around the 1980s with the launch of credit cards. The country saw a huge growth in awareness, the number of mobile phones and Internet users, and the number of digital payment mode users. With growing demand, newer businesses and applications came into existence.

India has witnessed significant growth in the number of digital transactions since 2010. During FY 2010–11, the number of digital transactions in the country was 4.98 billion, valued at Rs. 96 lakh crores (approximately US$ 1.3 trillion). In FY 2020, the number of transactions surged to 16.23 billion, with the value increasing to Rs. 3,435 lakh crore (approximately US$ 45.9 trillion). This represented a compound annual growth rate (CAGR) of 43% in value and 12.54% in the volume of transactions over FY 2010–2020 (the last 10 years).

Earlier, the payment systems were facilitated only by the RBI and Payment Systems Operators (PSO) with around five payment methods. Now, several more payment methods, managed by the NPCI, are available to the users.

During FY 2010–11, the majority of payments were conducted through the paper mode. Due to growth in awareness, economy, literacy and adoption of the Internet, the share of payments through cash transactions decreased and the number of payments through electronic methods increased significantly. A comparison of shares held by retail transaction methods during FY 2010–11 and FY 2019–20 is shown in the pie charts below.

Retail Transactions in Terms of Volume during FY 2010–11 and FY 2019–20

Source: RBI Data
As shown above, during FY 2010–11, the majority of transactions were conducted through the paper payment method, which accounted for 60% of the total payments during that period; the other payment methods such as retail electronic, card payments and PPI payments collectively accounted for the rest (40% of the total payments). This was the time when India was slowly moving towards digitalization – cash payments were preferred by most of the population. The preferred method of transaction shifted towards the electronic mode during FY 2019–20; the digital payment mode accounted for 97% of the total payments and paper-based payments accounted for only 3%.

### Retail Transactions in Terms of Value during FY 2010–11 and FY 2019–20

A comparison of shares held by various payment methods in terms of the value of transactions during FY 2010–11 and FY 2019–20 is illustrated above. During FY 2010–11, paper transactions accounted for 89% of the total value and the other electronic methods such as retail electronic, card payments and PPI accounted for the rest (11%). During FY 2019–20, paper transactions accounted for 20% and electronic payment methods accounted for the rest 80% of the value of transactions.

As per the RBI data, the payment systems recorded a robust growth of 26.2% in terms of volume during 2020–21, following an expansion of 44.2% in the previous year.

### Increase in Volume of Total Digital Payments

<table>
<thead>
<tr>
<th>Year</th>
<th>Volume (billion)</th>
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<td>2018-19</td>
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Source: RBI Data
The volume of total digital payments increased from 23.3 billion during FY 2018–19 to 43.7 billion during FY 2020–21, representing an increase of 88% over the two years. The volume of non-cash payments increased to 98.5% during FY 2020–21 from 97% during FY 2019–20. This indicates the success and future potential of digitalization in India.

**INDIA’S RISING FINTECH COMPANIES**

With the Gross Domestic Product (GDP) currently at US$ 2.62 trillion and expected to reach US$ 5 trillion by 2026, India is among the fastest growing fintech markets in the world. India has the highest fintech adoption rate of 87% in the world; the global average is 64%. As of September 2021, India’s fintech market, valued at US$ 31 billion (third largest in the world), had more than 2,100 players. Growth in the market is driven by the rising population and shift towards digital transactions among several banks and institutions.

FinTech has been gaining significant attention over the globe, amid digitalization and the growing need for faster transactions. After 2015, India witnessed a huge increase in the number of fintech companies. Factors such as the availability of appropriate technical skills, capital investments from domestic and international investors, and changing government policies are driving growth in the fintech space.
The Indian fintech market is growing rapidly, majorly driven by the following factors:

- **Mobile Banking and Digital Transactions**
  With the rise in the accessibility of mobile phones, the use of online financial transactions is increasing. This has created a huge demand for companies dealing in financial technologies. Several start-ups have emerged in the fintech sector and numerous established players have diversified their portfolios in order to join the fintech market.

- **Insurance Sector (InsureTech)**
  The insurance sector is growing, driving the need for operations and transactions; this, in turn, is promoting growth in the fintech sector. As a large number of users prefer the online mode to carry out insurance transactions, the fintech industry is crucial for the insurance sector.

- **Wealth Management Industry (WealthTech)**
  Integration of technology can help any sector reach its full potential. Fintech has helped the wealth management industry by enabling timely transactions, quicker operations and cost efficiency; this has made fintech an integral part of the industry.

- **Regulation Technology (RegTech)**
  As policy and regulatory requirements are integral to any business, having technology backing is essential. Fintech has become a significant part of the regtech segment.

India had over 17 fintech unicorns as of December 2021. The top 14 fintech companies are valued at over US$ 50 billion. The country’s fintech industry’s value is expected to reach US$ 150–160 billion by 2025.

### LAUNCH OF UPI AND ITS IMPACT ON THE INDIAN ECONOMY

The UPI was launched in India in the year 2016. It is a system that powers multiple bank accounts into a single mobile application. The UPI allows users to make transactions and merchant payments. Moreover, it provides access to several bank features.

Currently, a total of 297 banks are linked to the UPI platform; there are 46 payment service providers and 251 issuers.

### Rise in Number of Banks Going Live on UPI

Source: NPCI Statistics
Note: Data excludes the transactions having debit/credit to the same account from August 2018 onwards
After the launch of the UPI in 2016, the number of banks that are live on UPI was only 21 in April. With the significant rise in the demand and adoption of digital payments, the number of banks increased to 297 (currently); this represents a CAGR of approximately 70% from 2016 to 2021. These include all the top public and private banks in India.

With the growing popularity, the number of users of UPI services also increased. The value of UPI transactions in India crossed US$ 100 billion in October 2021, reaching Rs. 7.71 lakh crore (approximately US$ 103 billion). Due to its convenience, the majority of the retail and merchant transaction is conducted through the UPI.

Since its launch in 2016, the volume of UPI transactions has increased significantly. The graph below shows the increase in the volume of transactions.

**Growth in UPI Transactions Volume Since 2016 (in Million)**

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Source: NPCI Statistics
Note: Data excludes the transactions having debit/credit to the same account for the month of August 2018 onwards

When the UPI was launched, the number of transactions was barely 0.10 million in October 2016. Driven by the rise in the awareness of the importance of the UPI and its accessibility, the transactions volume increased rapidly. The number of transactions increased sharply in October 2017 (almost 800x than that in 2016). The trend continued in the following years, with the number increasing more than two times. In October 2021, the number of transactions was around 4.2 billion. This represented a CAGR of more than 700% from 2016. The UPI is mostly used for making low-value payments, and hence, the number of transactions is high in India.
The value of transactions through the UPI has been growing rapidly since its launch in India. The value of transactions crossed US$ 25 billion in 2019. This was due to a massive surge in the number of users and banks linked with UPI. The value of UPI transactions in India dipped in April 2020 after the outbreak of the COVID-19 pandemic. As the UPI was mostly used in retail shops, the number of transactions dropped amid the pandemic. However, in the same year, the transaction value crossed the US$ 50 billion mark. The recent data shows a massive increase; the value of transactions crossed US$ 110 billion in January 2022.

CURRENTLY, INDIA’S BNPL MARKET VALUE IS ESTIMATED AT US$ 3–3.5 BILLION; THIS IS EXPECTED TO GROW TO US$ 45–50 BILLION BY THE YEAR 2026. HOWEVER, THE NUMBER OF USERS IS EXPECTED TO GROW FROM AROUND 10–15 MILLION AT PRESENT TO 80–100 MILLION BY 2026.

THE BOOM IN ‘BUY NOW, PAY LATER’

Since its inception in India, the popularity of ‘Buy Now, Pay Later’ (BNPL) has increased. The ease of use of BNPL and the affordability it provides have made it a preferred option among Indian buyers. Due to the usability of BNPL, it has captured about 3% of the e-commerce market share, and this is expected to grow to 9% by the year 2024.

During the pandemic, as the need for digital transactions grew, BNPL deals became more popular. People turned to virtual shopping and started using online payment applications and BNPL as an alternative to credit cards. As BNPL entails less cost compared to traditional credit cards, it is highly preferred by people. With acceleration in the digital India campaign and the government’s focus on promoting the usage of the digital medium, India is expected to be one of the fastest adopters of BNPL; the adoption is expected to rise at a CAGR of 24.2% during 2021–28. Moreover, the gross value is expected to increase from US$ 7 billion in 2020 to...
around US$ 53 billion by 2028. According to a report published by Deloitte, the Indian e-commerce market is expected to capture 11.4% of the Indian market by 2026. As per a report published by Goldman Sachs, the Indian e-commerce industry is expected to expand to US$ 99 billion by 2024. As the BNPL provides the user with zero costs and small installments, its usage can be expected to grow at a fast pace.

**IMPACT OF INDIA’S DIGITAL PAYMENT ECOSYSTEM**

**Economic Impact**

The Indian economy is growing fast, and digitalization will play a major role in driving the Indian economy. With digitalization, the amount of black money in the market can be reduced. Also, it helps to control unauthorized transactions that can be conducted easily through cash. Moreover, a reduction in the amount of hard cash would help avoid tax frauds which would drive growth in India’s tax income. Digital payments would also boost the number of taxpayers in the country.

One of the major benefits of digital payments and transactions is efficiency. With improved efficiency, new businesses can be set up. The MSME sector can benefit largely from digital payments and the UPI. As the MSME sector heavily contributes to the Indian economy, digital payments can create a huge positive impact on the Indian economy.

The UPI has had a huge impact on the banks and the fintech industry. It provides banks with a low-cost alternative to cash and helps them save on merchant onboarding costs. The data acquired through digital transactions also enables banks to market other services, have a better understanding of the spending pattern, and serve consumers better. The open architecture helps fintech firms to drive innovation and develop newer products and unique services.

With digital transactions, many offers, coupons, discounts and rewards can be offered to the users. This makes marketing of companies and services easy and fruitful. This also boosts consumer spending; the increase in buy and sell activities would drive growth in the economy. The digital record of transactions helps monitor illicit activities. Also, the data helps in tracking the economic activities in the country. Moreover, as UPI involves zero transaction fees or services fees, spending would increase. The mobile banking and payment apps act as a one-stop payment portal, helping consumers pay electricity, TV, mobile and other utility bills.

The availability of data on consumer spending and digital transactions makes budgeting easier and more fruitful.
Provision of discounts on digital payments of highway tolls, railway catering, fuel, rail tickets and service taxes encourages consumers to pay bills and taxes on time.

According to Statista, the value of mobile transactions in India is expected to increase at a CAGR of 20% during 2019–2023.

**Broader Impact**

Digital payments in India have risen sharply in the past few years. According to PwC, approximately 48 million digital transactions were registered during 2020 despite the COVID-19 induced restrictions. This had a significant impact on the country’s economy. The industry is just at its nascent stage and a steep growth has been accelerated by factors such as the entry of new players into the payments ecosystem, innovation in technology, government initiatives, and a rise in customer convenience. Digital payments have been widely accepted by the people of India. Furthermore, India has paved its way to occupy the central position in digital payment innovation. The digital payment ecosystem will impact businesses, individuals and government. The key payment trends within the overall payment space in India will:

- Lead to the entry of tech giants and emergence of new business models
- Drive the popularity of open banking systems
- Affect offline payments
- Lead to the emergence of committed payment systems

**Entry of Tech Giants and New Business Model**

The digital payment space has seen some of the prominent tech giants investing in an opportunity worth US$ 3.6 trillion. Factors that facilitate the entry of tech giants include:

- Various platforms to influence offering
- Greater access to the consumer data pool
- New and existing consumer base
- Relatively fewer regulations as compared to banks
- A large existing revenue pool

Digital payments not only address the existing business needs of big tech firms but also guarantee greater consumer adhesiveness.

**Advent of Open Banking Systems**

Customer-centric models have been the drivers for the payment industry. Open banking is an avenue using which third-party service providers can gain access to the banking data of clients at different financial institutions, through the application programming interfaces. Open banking has been the key for the fintech segment and has driven the following changes in the digital banking space:

- Evolution of account aggregators will lead to a more comprehensive and 360-degree view of a consumer’s financial status gathered from different financial institutions.
- Availability of customer information will lead to competitive pricing, enhanced use cases and improved user experiences as the digital payment ecosystem will expand with the onboarding of numerous players.

**Impact on Offline Payments**

Cell phones are increasingly being used for making digital payments, compared to plastic cards. Therefore, the RBI’s move to allow offline digital payments of an amount not exceeding US$ 2.6 (Rs 200) without an active Internet connection will
be a game-changer for this industry. The RBI is now allowing solution providers to ignore the two-factor authentication, like the Unified Payments Interface (UPI), which could result in more merchants adopting payments solutions such as the Unstructured Supplementary Service Data (USSD), SIM overlay and near-field communication (NFC).

**Committed Payments Systems**

Amid the rise in digital payments, several instances of failed payments due to technical glitches related to infrastructure, poor network, server errors, etc. were reported throughout 2020. Several banks faced these issues which impacted their reputation as well as consumer confidence. According to PwC, five of the top 10 banks faced technical issues, with the technical decline rate reaching around 1.8% in 2020. A report published by the RBI suggested enhancements in system design, architectural and monitoring changes, and a 25% YoY decline in failure rates to be achieved by PSPs and other institutions. This will help banks and payment companies in creating a dedicated payment system for managing payments in a better manner. For instance, State Bank of India (the largest bank in India) launched You Only Need One (YONO) digital payment system in 2017; it is now valued at around US$ 40–50 billion. YONO is an integrated digital platform that helps users access financial and other services; book a train, cab, or flight; shop online; make bill payments, etc. The launch of the platform is one step closer to the creation of a dedicated payment system.

**IMPACT OF BUDGET 2022 ON DIGITAL PAYMENTS**

The budget 2022 has provided a significant boost to the digital economy. Finance Minister, Ms. Nirmala Sitharaman, announced that the centre will work towards setting up 75 Digital Banking Units (DBUs) in 75 districts across the country through scheduled commercial banks. She stated that the adoption of digital payments and fintech has increased which has driven growth in the industry. The minister also stated that the government has been pushing the sector to make sure that the advantages of the digital wave of banking reaches every corner of India in a highly consumer-friendly environment.

Furthermore, as per the finance minister, approximately 150,000 post offices will be linked to the core banking system, helping the government to attain financial inclusion and access to accounts through net banking services, mobile banking services and ATMs. This will also allow online transfer of funds between post office accounts and bank accounts. Farmers and senior citizens in rural areas will benefit from this transition, as the budget enables financial inclusion and greater operability.

One of the biggest moves in the digital currency space has been the government’s proposal to launch the Central Bank Digital Currency using blockchain technology. According to the finance minister, digital currency will help create an efficient and inexpensive currency management system. In the previous budget, the government had allocated around US$ 198.6 million (Rs.1,500 crore) to promote digital
payments in under-developed and rural areas. The government plans to continue this arrangement for FY 2022–23. Fintech companies have responded optimistically to Budget 2022.

According to Mr. Varun Sridar, CEO of Paytm Money, growing investment in core sectors that have a huge multiplier on GDP, coupled with a constant focus on job creation, skill development, and enabling financial inclusion are the key takeaways of the union budget 2022. The government’s stance on digital currency is a historic move for the financial services sector of the country.

**FUTURE OF DIGITAL PAYMENTS IN INDIA**

Digital payments have grown sharply in the past few years and the payments industry in India is expected to grow to US$ 700 billion in 2022. The pandemic gave a strong boost to the Indian digital payments industry and increasingly more users are switching to digital modes every day. With the fintech industry gaining a solid footing in the Indian market, more innovative and better payments modes will hit the market in the future. The industry will bring more safety and efficiency into digital transactions. India is already adopting blockchain technology. Machine Learning, Artificial Intelligence, and cloud-based payment facilities, as well as cryptocurrency, are slowly being recognized.

As part of aggressively working towards achieving a digital economy, the government of India has launched various initiatives to promote the use of digital payments. The DigiDhan, Di initiative, Cashless India are some of the schemes launched with aim of accelerating digitalization. In anticipation of growth in the adoption of cryptocurrencies, the Indian government, in its recent budget, announced the acceptance of cryptocurrency, with a solid tax regime in place. Furthermore, for the proper regulation of alternate currencies, the government plans to launch its own digital currency, named central bank digital currency (CBDC), which would add more impetus.

India’s digital payments market is expected to expand to US$ 1 trillion by 2023. By 2025, India’s digital payment industry is projected to grow to more than 300% of its current size.