

Cashless Economy.....India

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Abstract

India is constantly speeding up its operations to achieve its objective of being an economy which is cashless, digital and transparent. In recent years, the Regulatory body of Indian banking system (RBI) have started to gear up with various initiatives, to make India on par with countries like Norway, Finland, Sweden and The Netherlands to grow its cashless economy and choose the way of digital payments. This study performs an analysis on the growth of digital payment system in India. The study evaluates the contribution of each digital payment system to the cashless ecosystem in India. It focuses on different cashless transaction system like Real time gross settlement (RTGS), Unified Payment Interface (UPI), National electronic toll collection (NETC), National electronic fund transfer (NEFT) and eleven more. The study takes into account the past seven financial years (2015-16 to 2021-22) to trace the growth trajectory of digital payments. The results show there is a constant growth in the digital payment ecosystem of India both in terms of value and volume among which UPI (Unified Payments Interface) ranks first when it comes to volume (number of transactions at a given period of time) and Real time gross settlement (RTGS) ranks first in terms of the value (the amount of money transferred). The cumulative result suggests that the percentage growth of the volume (312.64%) is significantly higher than the percentage growth of Value (73.07%) between the year 2015 and 2022 respectively. And as there is increase in the digital payment systems, the analysis shows that the usage of the paper-based instruments gets reduced from 15.59% contribution to just 0.96% contribution towards the total payment systems. These results indicate to the potential growth of digital and cashless economy with the help of banks as well as the contribution done by the Fintech (Financial technology) companies.

Introduction

A cashless economy is where all the transactions are done through electronic channels such as debit/credit cards, Immediate Payment Service (IMPS), National Electronic Funds Transfer (NEFT) and Real Time Gross Settlement (RTGS). In cashless economy the circulation of physical currency is minimum. In recent years, policy makers globally, are promoting the idea of eliminating cash with the aim to suppress unreported economic activity. Transformation into a cashless economy is an international issue and many of the countries are closer to become a cashless economy. It was in

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trend by barter age of cashless transaction and other methods of exchange like food crops or other goods (Humphrey, D.B, 2014). However, the new concepts of cashless transactions in cashless economy are made with the help of digital currencies where legal tender (money) is exchanged and recorded only in the electronic digital form. So many challenges and opportunities are associated with the effects of digital transactions. The main concept of the cashless economy is that to make people use digital payment methods for their transaction of money for goods and services fully, without elimination of physical cash from economic market completely. Limited cash in circulation support to control growth of inflation rate. There are certain benefits for the consumers when it comes to cashless economy. Those are Convenience, Discount, Tracking spends, Lower risk, small gains. Smaller gains refer to the following: Service tax: Waiver of service tax of 15% on digital transactions up to Rs. 2,000.

Fuel: 0.75% discount on digital purchase of fuel through credit/debit cards, e-wallets or mobile wallets. Rail tickets: 0.5% discount on monthly and seasonal suburban railway tickets from 1 January 2017. Online rail ticket buyers get up to '10 lakh free accident insurance too. Rail catering: 5% discount on digital payments for railway catering, accommodation, retiring rooms, etc. Highway toll: 10% discount on NH toll payment via RFID or fast-tags in 2016-17.

Insurance: 10% discount by government general insurers on premium paid online via their portals. 8% discount on new LIC policies bought online via its site. POS: Rs 100 a month is the maximum rent that PSU banks can charge for PoS terminals. However, there are also some major drawbacks when it comes to digital transaction Higher risk of identity theft, losing phone, Difficult for tech-unsavvy, Overspending

The concept of a fully cashless society is both logical and seemingly inevitable. Countries like Singapore, Hong Kong, and Sweden were among the early pioneers in this endeavor. Their initial efforts primarily revolved around promoting the use of various forms of plastic money, including debit and credit cards, prepaid cards, and store cards. The overarching aim was to encourage digital financial transactions while concurrently reducing or even eliminating the reliance on physical cash within their economies.

India, in its pursuit of a cashless society, follows a similar trajectory. However, the motivations behind India's national commitment to transitioning towards a cashless economy are notably more intricate and profound. India faces distinctive and more substantial challenges compared to other nations, particularly those associated with the circulation of physical cash (not easily traceable, inconvenient, and costly to produce). In response, India has formulated an ambitious plan to expedite its 1.3 billion population's transition from a 'less paper,' 'less people,' 'less cash,' and 'less friction' banking environment to a truly 'paperless,' 'frictionless,' and 'cashless' ecosystem.

NPCI

The National Payments Corporation of India (NPCI) is an organization established collaboratively by the Reserve Bank of India (RBI) and the Indian Banks' Association (IBA). It operates under the legal

framework provided by the Payment and Settlement Systems Act of 2007. NPCI's primary mission is to develop a robust payment and settlement infrastructure within India. NPCI was created to serve as an overarching entity responsible for managing retail payments and settlement systems across the country. It was incorporated as a "Not for Profit" Company, following the guidelines outlined in Section 25 of the Companies Act of 1956, which is now recognized as Section 8 under the Companies Act of 2013. This nonprofit status underscores NPCI's commitment to serving the broader interests of the Indian banking system. One of NPCI's central objectives is to provide essential infrastructure for both physical and electronic payment and settlement systems, covering the entire spectrum of the banking sector in India. The organization places a strong emphasis on innovation and utilizes cutting-edge technology to enhance the efficiency and effectiveness of digital payment systems. NPCI's efforts are geared toward introducing novel payment methods and expanding the reach of digital payment systems to benefit the retail market and the broader economy.

Pradhan Mantri Jan Dhan Yojana (Jan Dhan Yojana): The launch of this initiative in 2014 represented one of the world's most extensive financial inclusion endeavors. Its ambitious objective was to extend banking services to 75 million households in India by January 26th, 2015. Remarkably, the government not only met but exceeded its target by enrolling over 125 million households in a diverse range of financial services. These services encompassed bank accounts, need-based credit, insurance, and pensions.

This national financial inclusion campaign was truly unique, playing a pivotal role in integrating the underbanked and unbanked segments of the population into the formal financial system, thereby bridging the digital divide. Presently, there are over 425 million operational Jan Dhan accounts, a testament to the transformative impact of this initiative. It has fundamentally altered the landscape by fostering a cashless environment in the country, empowering consumers to conduct transactions without relying on physical currency. Instead, they can seamlessly utilize various digital payment methods.

BharatPe Net: This initiative serves as the cornerstone of the vision for a cashless economy. A seamless and frictionless payment ecosystem hinges upon the presence of a robust network infrastructure. In fact, this project is celebrated as the largest rural broadband connectivity endeavor on a global scale. Its overarching objective is to establish high-speed broadband services at affordable rates, reaching a vast network comprising 2.5 lakh gram panchayats and 6 lakh villages. This extensive coverage is made possible through the deployment of an impressive 10 lakh kilometers of optical fiber, underpinning the backbone of this ambitious project.

Payments bank

Payments banks are a category of financial institutions characterized as "niche" or "differentiated" banks, all unified by a shared goal of fostering financial inclusion. These specialized banks offer a limited array of products and services, primarily targeting specific demographics, including low-income earners, small businesses, the unorganized sector, and the migrant workforce. They establish

an extensive presence in rural and underbanked areas to fulfill their mission. The core functions of payments banks closely resemble those of commercial banks and encompass activities such as accepting demand deposits and facilitating remittances of funds. Services provided by payments banks encompass familiar features like account opening procedures, service charges, and the availability of items like cheque books and passbooks. However, payments banks require that the balance in a customer's account does not exceed Rs. 1,00,000. Key activities undertaken by payments banks include issuing ATM/debit cards, although they are not authorized to issue credit cards. These banks are also involved in payments and remittances services, including foreign remittances. Additionally, payments banks can provide locker and vault services and offer simplified financial products such as mutual fund units and insurance products. Another important function of payments banks is acting as Business Correspondents (BC) for another bank, provided they adhere to the regulatory guidelines established by the Reserve Bank of India (RBI). However, it's important to note that payments banks are not permitted to accept deposits from Non-Resident Indians (NRIs).

RuPay Card

RuPay, in contrast to VISA or Mastercard, distinguishes itself by not incurring acquisition or transaction costs, and it boasts international acceptance. This unique attribute has played a pivotal role in propelling digital payments within India. The introduction of RuPay contactless, a versatile card that works across all payment systems, is poised to revolutionize the payment landscape across diverse usage scenarios. Furthermore, in response to the rapid evolution of the digital payment sector, Prime Minister Narendra Modi unveiled e-RUPI—a cashless and contactless digital payment solution. This innovation is perceived as a potential precursor to the introduction of Central Bank Digital Currency (CBDC) in the Indian market. The introduction of e-RUPI is anticipated to be a significant disruptor, potentially rendering physical currency circulation obsolete while digitizing cash transactions. It's important to recognize that different countries employ diverse strategies to realize their objectives of becoming cashless societies. In India, the Digital India program serves as the government's flagship initiative, aiming to transform the nation into a digitally empowered society and knowledge economy. A core tenet of the Digital India program is the aspiration to be “faceless, paperless, and cashless.” To attain this objective, a variety of digital payment methods have been made available to promote cashless transactions and facilitate India's transition towards a cashless society.

Explained below are some of most important digital Payment methods followed in India. Let us look to it one by one:

NACH

The National Payments Corporation of India (NPCI) has implemented the “National Automated Clearing House (NACH)” —a web-based system designed to facilitate high-volume, interbank electronic transactions of a recurring and periodic nature. This innovative NACH System is instrumental for various entities, including banks, financial institutions, corporates, and government agencies. The versatility of the NACH System allows it to handle bulk transactions for a wide range of purposes,

including the distribution of subsidies, dividends, interest, salary, pensions, and more. It also serves as a valuable tool for collecting payments for services such as telephone bills, electricity, water, loan repayments, mutual fund investments, insurance premiums, and various other recurring payments. The National Automated Clearing House (NACH) represents a centralized system that was conceived with the objective of consolidating multiple Electronic Clearing Service (ECS) systems operating across the country. In doing so, it establishes a standardized framework and promotes uniform practices, eliminating local barriers and impediments. With its nationwide reach, the NACH system is poised for expansion and is expected to continue growing in significance over time.

Banking Cards (DEBIT / CREDIT)

Banking cards offer consumers a compelling combination of security, convenience, and control that surpasses most other payment methods. The extensive range of card options, spanning credit, debit, and prepaid cards, provides individuals with a wide array of choices to suit their preferences and needs. These cards prioritize the safety of financial transactions by incorporating two-factor authentication measures, typically involving a secure Personal Identification Number (PIN) and a one-time password (OTP). Prominent card payment systems like RuPay, Visa, and MasterCard, among others, exemplify these security standards. Payment cards empower individuals to make purchases across a variety of channels, including physical stores, online platforms, mail-order catalogues, and phone-based transactions. In doing so, they streamline the payment process for both customers and businesses, resulting in significant time and cost savings, ultimately enhancing the overall convenience of financial transactions.

Unified Payments Interface (UPI)

The Unified Payments Interface (UPI) is a multifunctional system that consolidates various banking services, enabling seamless fund routing and merchant payments through a single mobile application, regardless of the participating bank. Additionally, it facilitates “Peer to Peer” collection requests, offering the flexibility to schedule and fulfill payments according to individual needs and convenience. To make UPI accessible to a wide user base, each bank has developed its own UPI app, which is available on Android, Windows, and iOS platforms. In an effort to introduce and refine this innovative system, the National Payments Corporation of India (NPCI) initiated a test launch involving 21 member banks. The pilot launch, under the patronage of Dr. Raghuram G Rajan, the Governor of the Reserve Bank of India, took place on April 11, 2016, in Mumbai. Subsequently, starting from August 25, 2016, banks began uploading their UPI-enabled apps to the Google Play store, making this innovative payment system more widely accessible to the public.

Internet Banking

Internet banking, often referred to as online banking, e-banking, or virtual banking, is an electronic payment system that provides customers of banks and other financial institutions with the capability to conduct a wide range of financial transactions through the institution’s website. Within the realm

of internet banking, there are various payment systems and methods available to customers, each suited to specific transfer durations and transaction amounts. Some of the common Internet banking methods include:

National Electronic Fund Transfer (NEFT)

The National Electronic Funds Transfer (NEFT) system is a comprehensive nationwide payment network designed to facilitate one-to-one fund transfers. This system enables individuals, firms, and corporations to electronically move money from any participating bank branch in the country to another individual, business, or corporation's account at any other bank branch within the same system. NEFT serves as a versatile solution for individuals, businesses, and organizations holding bank accounts to initiate cash transfers. Additionally, walk-in customers who do not possess bank accounts can deposit cash at NEFT-enabled branches and provide instructions for payments to be made through NEFT. However, the maximum limit for cash remittances is capped at Rs. 50,000 per transaction. NEFT plays a vital role in simplifying money transfer transactions, ensuring that both originators and recipients can conduct financial transactions even if they do not maintain a bank account. The system operates in hourly batches, facilitating twelve settlements from 8 a.m. to 7 p.m. on weekdays (Monday through Friday) and six settlements from 8 a.m. to 1 p.m. on Saturdays, thus ensuring consistent and timely fund transfers.

Real Time Gross Settlement (RTGS)

The term RTGS stands for "Real Time Gross Settlement," and it represents a financial transfer system characterized by continuous, real-time settlement of transactions on an individual order basis. In this context: "Real Time" signifies the immediate processing of instructions as they are received, without any delay. "Gross Settlement" refers to the individual and separate settlement of each funds transfer instruction, one at a time. The RTGS system operates within the Reserve Bank of India's infrastructure, ensuring that payments are definitive and irreversible once executed. This system is specifically designed to handle high-volume transactions efficiently. For RTGS transactions, there is a minimum limit of Rs. 2 lakhs, which means that any transaction sent via RTGS must be equal to or exceed this amount. There is no upper limit for RTGS transactions, making it suitable for large-value transfers. Banks are permitted to use the RTGS service for client transactions during specific hours, from 9:00 a.m. to 4:30 p.m. on weekdays and from 9:00 a.m. to 2:00 p.m. on Saturdays, for settlement at the Reserve Bank of India. It's important to note that the specific hours during which banks offer RTGS services may vary based on the individual bank branches' customer service hours.

Immediate Payment Service (IMPS)

The banking sector faced a significant challenge in enabling real-time fund transfers 24 hours a day, seven days a week, throughout the entire year. Previously, during banking hours, the options for fund transfers were limited to NEFT and RTGS. In response to this limitation, the National Payments Corporation of India (NPCI) initiated a pilot project in August 2010 to explore the potential of a mobile

payment system. This pilot involved collaboration with banks like State Bank of India (SBI), Bank of India (BOI), Union Bank of India (UBI), and ICICI Bank. Subsequently, in the months of September, October, and November 2010, additional banks, including Yes Bank, Axis Bank, and HDFC Bank, joined this initiative. This collective effort led to the development of the Immediate Payment Service (IMPS), aimed at providing a solution for real-time and round-the-clock fund transfers. IMPS was officially launched on November 22, 2010, in Mumbai, with Smt. Shyamala Gopinath, the then Deputy Governor of the Reserve Bank of India (RBI), inaugurating the service. Today, IMPS is accessible to the Indian public, offering a seamless and convenient means of conducting immediate fund transfers at any time, enhancing the overall banking experience.

NETC (National electronic toll collection)

The National Electronic Toll Collection (NETC) initiative was established by the National Payments Corporation of India (NPCI) to address the electronic tolling needs in the Indian market. This initiative provides a nationwide, interoperable system for toll payment, along with clearing house services for settlement and dispute resolution. In the context of the National Electronic Toll Collection (NETC) system, interoperability means that there is a shared set of procedures, corporate policies, and technical requirements that enable customers to use their NETC FASTag as a payment method at any toll plaza, irrespective of the toll plaza's ownership. The NETC FASTag is a device that utilizes Radio Frequency Identification (RFID) technology to enable drivers to make toll payments seamlessly while driving. This FASTag, which is affixed to the vehicle's windshield, allows the customer to pay tolls using the account associated with the NETC FASTag, streamlining the toll payment process for enhanced convenience and efficiency.

e- Rupi Digital Payment Platform

This platform represents a cashless and contactless digital payment instrument, offering users a QR code or SMS string-based e-voucher delivered directly to their mobile devices. Notably, users can redeem these vouchers without requiring a digital payment app, internet banking, or a physical card. The National Payments Corporation of India developed this digital payment platform on its UPI (Unified Payments Interface) infrastructure, in collaboration with partners including the Department of Financial Services, the Ministry of Health and Family Welfare, and the National Health Authority. The primary aim of this initiative is to connect service sponsors with beneficiaries and service providers, fostering a digital connection devoid of physical interfaces. It's important to note that this platform does not rely on blockchain technology.

Around the world, various countries have embarked on the journey towards a cashless economy, aiming to eliminate corruption and enhance transparency in economic transactions. While the methods to achieve a "cashless" objective may differ from one country to another, the overarching goal remains consistent. Several nations are making significant strides toward becoming cashless economies, with the potential to achieve this goal within the next decade.

Sweden

Sweden, as the inaugural European nation to introduce banknotes, seems poised to lead the way in phasing out physical currency. The use of cash is rapidly dwindling in Sweden, where the availability of ATMs is less than 32 per 100,000 individuals, with over 98 percent of the population owning debit cards. Furthermore, Sweden ranks among the top nations for contactless mobile payments. Remarkably, this shift towards a cashless society is not only a societal trend but also a legal one. Merchants in Sweden are well within their rights to decline cash payments, effectively compelling customers to opt for cashless payment methods. Coupled with the fact that most Swedish banks no longer handle cash transactions in-branch and ATMs are few and far between, it comes as no surprise that, according to the Swedish Central Bank, Sweden is projected to become entirely cashless by the conclusion of 2023.

Norway

According to data from the World Bank, Norway stands out as the European country making significant strides towards a cashless future. An overwhelming 98% of Norwegians possess debit cards, and Norway's central bank reports that a mere 3-5% of all point-of-sale transactions involve physical currency, with contactless card transactions constituting three-quarters of these transactions. Additionally, mobile payment apps are embraced by more than 95% of the population, with applications becoming the predominant method for peer-to-peer money transfers, accounting for nearly 80% of all payments as of 2020. Interestingly, despite the rapid transition to a cashless society, Norway faces concerns raised by several senior government officials. In 2021, the Finance Ministry in Oslo urged the Financial Supervisory Authority to formulate a plan ensuring that banks continue to offer cash services to consumers. This development is a response to the stance of many Norwegian banks, similar to their Swedish counterparts, which argue that providing cash services falls outside their purview. An intriguing consequence of this shift towards a cashless future is the growing focus on digital currency. Norway's central bank announced in April 2021 that it was exploring digital monetary solutions to facilitate the transition to a cashless society.

The Netherlands

According to Global Data, the card payments market in the Netherlands is expected to rise 7.7% by the end of 2021. Already well-known as a country, where becoming cashless is simple, 91 percent of Dutch people use banking apps, with debit cards accounting for 90.5 percent of all card payments in 2020. However, due to a cultural aversion to debt, people are hesitant to use credit cards. Surprisingly, the Netherlands is the most popular European country for cashless wristwatch payments, accounting for more than a third of all smartwatch transactions in Europe. This could be attributed in part to the fact that Fit Bit and Garmin smartwatches are compatible with two of the Netherlands' largest banks.

Finland

According to information sourced from Global Data, it is predicted that the card payments sector in the Netherlands will see a 7.7% growth by the conclusion of 2021. The Netherlands is widely recognized

for its seamless transition towards a cashless society, with an impressive 91% of its population actively using banking applications. Notably, debit cards dominated the payment landscape in 2020, accounting for a substantial 90.5% of all card transactions. Interestingly, there is a cultural inclination in the country that discourages the use of credit cards due to a collective aversion to debt. A striking aspect of the Netherlands' payment landscape is its prominent position in cashless wristwatch transactions. The country leads in this regard among European nations, responsible for more than one-third of all smartwatch-based transactions on the continent. This unique trend can be attributed in part to the compatibility of Fitbit and Garmin smartwatches with two of the Netherlands' largest banks.

The United Kingdom

The United Kingdom has been an early adopter of digital payment methods, with contactless payments emerging as one of the most widely embraced options. By the year 2020, contactless payments had surged to constitute a substantial 27% of all transactions, totaling an impressive 9.6 billion transactions. This marks a remarkable transformation compared to just a decade earlier when cashless payments only accounted for 50% of all transactions in 2011. Presently, they constitute a staggering five out of every six transactions in the United Kingdom. The impact of COVID-19 played a pivotal role in expediting the UK's transition away from physical currency. A study conducted by UK Finance highlights that cash payments experienced a significant decline of 35% in 2020, largely attributed to the pandemic. Moreover, the study reveals that a substantial 79% of adults in the UK actively engage in internet banking, with 54% utilizing mobile banking apps, signifying the nation's substantial progress towards becoming a cashless society.

Objective of the study

India's financial journey has been on a rollercoaster for the past five years due to the effect of demonetization and COVID-19. Lockdowns and isolations had made a huge impact on how people transact their money. To examine this change, this study is being conducted exhaustively to understand how India penetrates itself into digitizing transaction and going cashless among other leading cashless countries.

The main objective of the study is:

1. To identify the progress of digital payments system in India.
2. To identify the digital payments system with highest growth.
3. To identify the contribution of each digital transaction systems to the total digital payment system in India in terms of
 - i. Volume
 - ii. Value

4. Identify the change in dependency on paper-based instruments
5. Year-on-year (YOY) percentage growth in the total digital payments systems.

Research Method

The data of digital payments system has been taken for the past seven financial years, i.e. from 2015-16 to 2021-2022. The Volume and value of transaction has been analyzed to understand the growth of digital payments in India. **Year-to-Year percentage change** and **growth chart** in terms of volume and value has been analyzed among the main subsets of the digital payment systems. The formula used to calculate the percentage change is as follows

$$\text{Relative change} = (\text{Present value} - \text{Initial value}) / \text{Initial value} * 100$$

A **cumulative difference** was considered to see the percentage change of the overall digital payment systems in terms of volume and value, from the year 2015-2016 to 2021-22.

The data shows two aspects of digital transactions

1. Volume: volume is the number of transactions done throughout the year. Volume is presented in terms of lakhs
2. Value: value is the amount of money (Rupees) transferred throughout the year. Value is presented in terms of Crores

Summation of total values and Volumes were carried out to understand the contribution of each payment system by identifying the percentage of contribution. One example would be,

$$\text{RTGS} = \text{Contribution of RTGS (in volume or value)} / \text{Total value} * 100$$

There are in total 5 payment systems in India for the digital transactions in India. They are:

	Payment Systems
1. Large Value Credit Transfers	i. RTGS
2. Credit Transfers	i. AePS Aadhaar enabled Payment System
	ii. APBS Aadhaar Payment Bridge System
	iii. ECS Electronic clearing system
	iv. IMPS Immediate Payment Service
	v. NACH National Automated Clearing House
	vi. NEFT National electronic fund transfer
	vii. UPI Unified Payment Interface

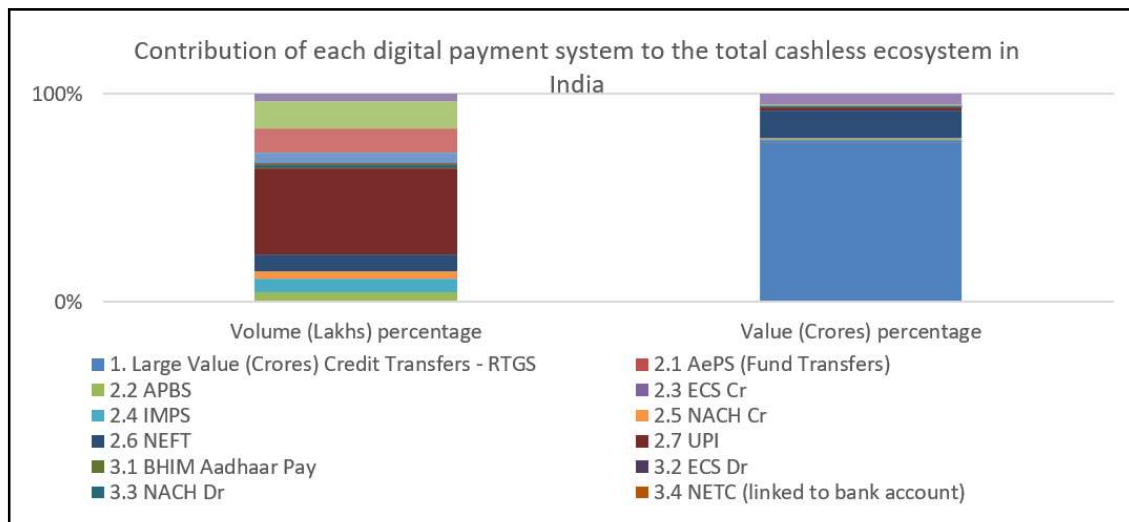
3. Debit transfer and Direct debits	<ul style="list-style-type: none"> i. BHIM Aadhaar Pay ii. ECS Electronic clearing system iii. NACH National Automated Clearing House iv. NETC National electronic toll collection (Linked to bank account)
4. Card payments	<ul style="list-style-type: none"> i. Credit Cards ii. Debit Cards
5. Prepaid Payment Instruments	<ul style="list-style-type: none"> i. Mobile wallets, ii. Smart Prepaid cards, iii. Vouchers iv. payment wallets

Finding and Interpretation

The Tables below show the figures of the value and volume of digital payments. It gives you the contribution of each payment system towards to payments ecosystem

Contribution of each payment systems to the overall payment systems (2016 – 2022)

Payment Systems	Volume (Lakhs) %	Value (Crores) %
1. Large Value (Crores) Credit Transfers - RTGS	0.469%	77.110%
2.1 AePS (Fund Transfers)	0.002%	0.000%
2.2 APBS	4.200%	0.052%
2.3 ECS Cr	0.030%	0.015%
2.4 IMPS	6.666%	1.208%
2.5 NACH Cr	3.604%	0.527%
2.6 NEFT	8.097%	13.245%
2.7 UPI	41.454%	1.511%
3.1 BHIM Aadhaar Pay	0.027%	0.001%
3.2 ECS Dr	0.112%	0.017%
3.3 NACH Dr	1.817%	0.365%
3.4 NETC (linked to bank account)	0.094%	0.000%
4.1 Credit Cards	5.339%	0.383%
4.2 Debit Cards	11.582%	0.351%
5. Prepaid Payment Instruments	13.173%	0.114%
6. Paper-based Instruments	3.335%	5.101%
Total	100.00%	100.00%



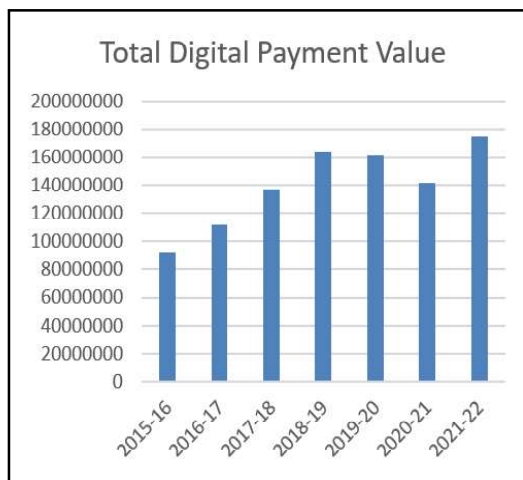
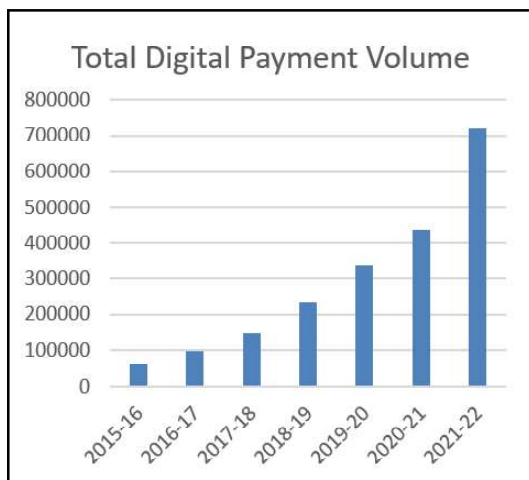
The table and graph below show the total increase in the Digital Payment systems in India (excluding the Paper based transaction)

Total Digital Payments (1+2+3+4+5)

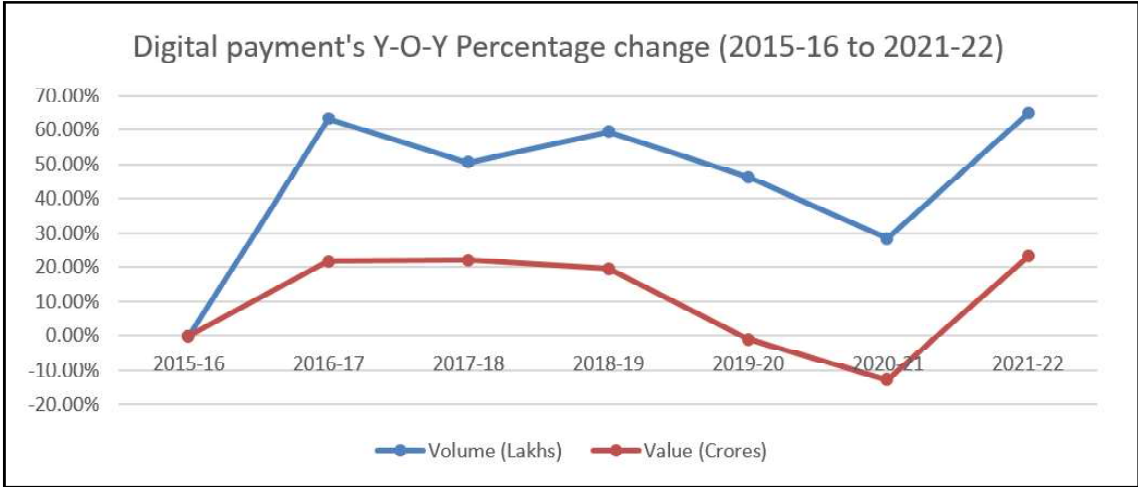
Years	Volume (Lakhs)	Years	Value (Crores)
2015-16	59361	2015-16	92038330
2016-17	96912	2016-17	112099726
2017-18	145902	2017-18	136978311
2018-19	232602	2018-19	163713425
2019-20	340155	2019-20	161968681
2020-21	437068	2020-21	141458488
2021-22	719768	2021-22	174401233

Total Digital Payments (1+2+3+4+5)

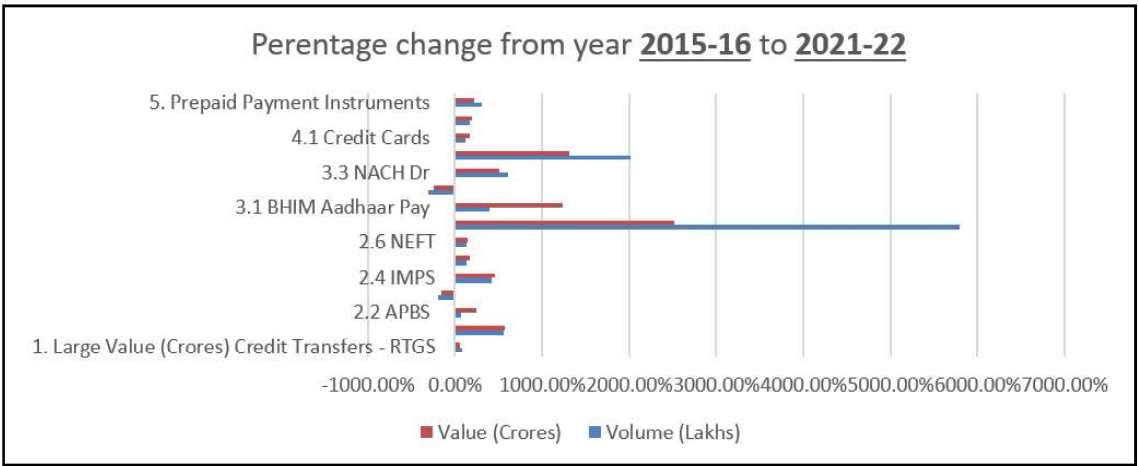
Year	Volume (Lakhs)	Value (Crores)
2015-16	-	-
2016-17	63.26%	21.80%
2017-18	50.55%	22.19%
2018-19	59.42%	19.52%
2019-20	46.24%	-1.07%
2020-21	28.49%	-12.66%
2021-22	64.68%	23.29%



Payment System	Volume (Lakhs)	Value (Crores)
1. Large Value (Crores) Credit Transfers - RTGS	81.34%	53.21%
2.1 AePS (Fund Transfers)	555.68%	577.90%
2.2 APBS	69.55%	249.11%
2.3 ECS Cr	-191.94%	-153.62%
2.4 IMPS	418.82%	463.32%
2.5 NACH Cr	127.02%	173.96%
2.6 NEFT	130.29%	144.47%
2.7 UPI	5797.47%	2516.98%
3.1 BHIM Aadhaar Pay	400.18%	1238.90%
3.2 ECS Dr	-306.06%	-240.06%
3.3 NACH Dr	606.65%	506.94%
3.4 NETC (linked to bank account)	2017.90%	1318.35%
4.1 Credit Cards	124.58%	169.19%
4.2 Debit Cards	167.89%	199.01%
5. Prepaid Payment Instruments	313.71%	225.72%



RTGS constitutes of just about 0.47% of the Volume transacted but the value of the transaction contributed in the overall payment system is 77.1%. Due to its ability to Transact huge sums of money i.e., above Rs. 2,00,000 it becomes much easier in RTGS to be able to transact huge sums of money with a very meagre number transaction. Whereas on this side of the spectrum the UPI takes the lead in the number of transactions since its launch on 2016 with a contribution of 41.4% in the total volume of transactions whereas it constitutes only 1.51% of total value transacted in the last 7 years. This is probably due to it being able transact lower amount of money from one account to other. Debit and cards and Credit cards together constitute 16.91% in volume, of the total payment system in India. Prepaid Payment instruments also play a significant role in the cashless digital payment system contributing 13.2% in volume.



	Volume (Lakhs) %	Value (Crores) %
1. Large Value (Crores) Credit Transfers - RTGS	9849	798462681
2.1 AePS (Fund Transfers)	49	2519
2.2 APBS	88289	539005
2.3 ECS Cr	624	150598
2.4 IMPS	140103	12506164
2.5 NACH Cr	75742	5460797
2.6 NEFT	170182	137149691
2.7 UPI	871301	15645052
3.1 BHIM Aadhaar Pay	567	10890
3.2 ECS Dr	2361	171334
3.3 NACH Dr	38197	3775452
3.4 NETC (linked to bank account)	1972	2861
4.1 Credit Cards	112218	3964366
4.2 Debit Cards	243446	3637896
5. Prepaid Payment Instruments	276869	1178889

When looked at the growth in the cumulative Payment system from financial year 2015-2016 to 2021-2022, the data shows that there is a significant reduction in the value of transaction in the year 2020-2021, indicating us to the deteriorating effects of the COVID-19 Pandemic. This reduction shows a negative growth in Y-O-Y percentage change. But due to the recovery in the Indian economy there is again a thriving of the payment system surpassing the past two years of value transacted. When it comes to Volume, there is a continual growth in the Digital Payment system and there is no decrease in the Volume of transactions carried out. The major reason for this growth could be the innovations in various payment systems in India including UPI and NETC. Even though the Percentage change in the RTGS is very negligible, the actual value of the transactions in RTGS covers more than 3/4th of the total transactions in India. Analyzing the data shows there is a huge potential in India for the expansion of the Digital Payment system considering the economic condition and the initiatives taken by the state to the growth of financial system.

Conclusion

India is the country most in favor of a cashless society as 79% of Indians believe going cashless would have a positive impact on their country. The pandemic has also put the spotlight back on the much-required collaboration among banks, financial institutions, and fintech to accelerate their digital journeys. With the majority of transactions in India still cash-reliant, 'Cashless India' is still a distant

dream. If anything, the Covid-19 pandemic fueled a massive shift towards digital transactions in India; in tune with the prime minister's vision of a Digital India. The vision got a big boost in the field of monetary transactions with the government's demonetization move six years ago. Since then, there has been a marked increase in tools and solutions available in the e-payments sectors. The Indian consumer has the choice of e-wallets, United Payments Interface (UPI) systems, Net banking services, and more, to transact financially online. After demonetization, even traditional banks had begun to incentivize customers to make payments digitally from their own bank accounts. As the natural step forward from here, other players have begun to promote cashless transactions for individuals and businesses alike. Although consumer spending across industries such as travel, fuel, retail, and entertainment took a hit in the last few months, a more precautionary lifestyle – encouraged by the government's call to stay indoors and seek a more "digital" way of life – led many first-timers and novice internet users to embrace digital payments, including for utility bill payments, OTT, mobile recharge, grocery, pharmacy, and other essentials. Hence it is not wrong to say that even though cash is still the king over the monetary transactions in India, there is definitely going to be major shift from cash to cashless, digital India in the coming years, for which all the studies conducted, justifies.

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