

India's Digital Revolution: UPI, Payment Leaders, Future Insights

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ABSTRACT

In a country of snake to INDIA is on the moon. INDIA 's massive growth has shocked the world. This research is based on the in-depth study of one of the greatest achievements of INDIA in digital payment through UPI (unified payment interface). The INDIA online payment sector is undergoing for reaching range is digital payment capturing a sizeable slice of take in recent year. The Reserve Bank of INDIA and its nodal agencies like NPCI are working hard to make digital payment INDIA goal reality nearly one billion card and more than 2 billion prepaid payment instrument such as online wallets mobile application, e wallet and digital modalities have pushed INDIA into one of world fastest growing and largest digital payment ecosystem. In fact, an exponential increase in Internet infrastructure boosted e commerce. unified payment interface popularly known as UPI is regarded as revolutionary payment solution in the market for facilitating retail digital payment. To achieve paperless and cashless economy UPI is potentially innovative way of transferring fund using a virtual payment address established by a national payment corporation of INDIA. Hence, it is needed to be assessed for its potential to contribute towards a shipment of digital economy.

Keywords: UPI, DIGITAL, GROWTH, TECHNOLOGY, INFRASTRUCTURE, FUTURE, ECOSYSTEM.

INTRODUCTION

INDIA is largest populated country in the world the massive population of 142 crores is huge market for digital payment. Digital payments have generated a lot of high specialists since demonetization. It has grown its importance during last few years. Both the government and the commercial sector recognise its mounting significance and are making maximum use of the fortune tinted by technology. As of 31 May 2023, there are 114.3 crore (1.14 billion) wireless subscribers in INDIA (including inactive users) according to Telecom Regulatory Authority of INDIA (TRAI). The main intent of this research is to analyse is to how digital payment interface and where it fits into digital ecosystem. The emphasis then shifts to a swot analysis of UPI. The final section of the paper will future of digital analysis in INDIA and its broad effect to world. India's financial landscape has undergone significant transformation in the past decade, with the Unified Payments Interface (UPI) being a key player in this revolution. Launched by the National Payments Corporation of India (NPCI) in 2016, UPI has transformed the way transactions are conducted in the country, facilitating seamless and instant payments across various platforms. The platform's simplicity and efficiency have led to its widespread adoption, with the platform surpassing 10 billion transactions per month by December 2021. UPI's success is attributed to its interoperability, allowing users to link multiple bank accounts to a single mobile application. This flexibility has attracted a diverse range of users, from urban tech-savvy millennials to rural populations who were previously excluded from the formal banking sector. The open architecture of UPI has spurred innovation, allowing fintech companies to develop applications catering to different user needs. Key players in India's digital payment landscape include Paytm, PhonePe, and Google Pay, each offering unique value propositions. Paytm, originally a mobile wallet service, has expanded its offerings to include UPI-based payments, while PhonePe, backed by Walmart, offers comprehensive financial services, insurance, and investment products. Google Pay, with its user-friendly interface and robust security features, has captured a significant market share. The future of UPI and the broader fintech sector looks promising, with innovations such as UPI 2.0 and the integration of emerging technologies like blockchain and artificial intelligence. However, challenges remain in ensuring that the benefits of digital payments reach all segments of society, including bridging the digital divide, enhancing cybersecurity measures, and promoting digital literacy. Addressing these challenges will require concerted efforts from policymakers, financial institutions, and technology providers. India's digital payment revolution, led by UPI, has set a global benchmark for innovation and inclusivity in financial services. The collaborative efforts of payment leaders and continuous technological advancements promise a dynamic and prosperous future for India's digital economy. The study explores the factors driving digital transaction adoption in India, including government initiatives, technological advancements, and changing consumer behaviour. It also identifies challenges like the digital divide and security concerns, and proposes strategies to address these issues, including data privacy and security flaws in UPI transactions. Karamjeet Kaur, Ashutosh Pathak (2015), in their Research paper entitled "E-payment system on Ecommerce in INDIA" they found that for becoming a Successful company in a digital payment industry it Majorly depends on the factors like easiness to use, an Interface, preferences, viability, accessibility, services and cost. Rahul Gochhwal (2017), in their research paper Entitled "Unified Payment Interface- A Advancement in Payment Systems" they found that even the smallest retailer or merchant in future will Be able to accept payment and also reduce their cost of intermediaries while carrying out transactions. The UPI will not only provide secure mode of payment but Will also helps in developing the technology ahead. Radhika Basavaraj Kakade, Prof. Nupur A. Veshne (2017) In their study reported that the UPI has made Digital transaction for individuals as easy as sending text messages. Service is available 24X7, not like RTGS or NEFT which don't work on holidays or during non-banking hours. This will bring enormous Efficiency in the system and help India become a truly cashless economy. Roshnan Thomas, Abhijeet Chatterjee (2017) The study reported that UPI is a tool with compatible Features that can make monetary transactions easy and affordable to the customers though it is difficult to sideline the challenges. A strong Aadhar platform (UID) combined with statistics for the country Pertaining to increased financial inclusion, Smartphone adoption and telecom subscription indicate Positive prospects for UPI whereas competition from mobile wallets and possible cases of failure from Banks to overcome technical errors especially relating to the front-end platform designed by them May

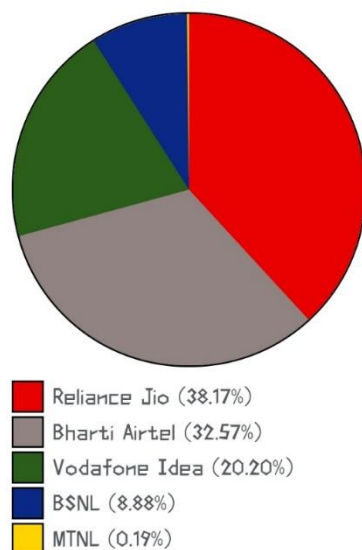
negatively impact the scope of this innovative payment tool. Ravish Rana (2017) In their study reported that adoption of digital payment is influenced by the education Level of the customer. If a person has studied beyond matriculation and internet savvy, he or she will be Inclined to use the digital payment mode. It was also found that in the areas/region where education level Is high such as Delhi (NCR) and other metropolitan area, the possibility of acceptance of digital Payment is much higher. The growth of users of Smartphone and internet penetration in such area also Facilitated the adoption of digital Payment.

Sahoo, P., & Kumar, R. (2018) examined the role of UPI in advancing financial inclusion in India. Their study highlighted that UPI's interoperability and ease of use have significantly reduced barriers for rural and unbanked populations, promoting greater financial participation. They concluded that UPI's success could be attributed to its integration with existing banking infrastructure and support from government policies aimed at digital literacy and financial inclusion. Jain, A., & Ghosh, S. (2019) explored the technological innovations introduced by UPI and their impact on the payment ecosystem. Their research pointed out that UPI's use of APIs and its open architecture have allowed fintech companies to develop innovative solutions, thereby enhancing the overall efficiency and security of digital transactions. They emphasized that these innovations have made India a leader in digital payment technologies. Agarwal, S., & Sengupta, P. (2020) conducted a comprehensive study on the adoption of UPI among different demographics in India. Their findings revealed that while urban, tech-savvy individuals were early adopters, there has been a significant uptick in usage among rural populations due to targeted awareness campaigns and increasing smartphone penetration. They also noted that user trust in digital payments has improved with enhanced security features introduced by UPI. Roy, M., & Sinha, S. (2021) analyzed the economic impact of digital payments, particularly focusing on UPI. They observed that digital payments have contributed to formalizing the economy, reducing black money, and increasing tax revenues. Their study showed that UPI has played a critical role in promoting transparency and efficiency in financial transactions, thereby positively impacting India's GDP growth. Das, S., & Mehta, A. (2020) explored the regulatory framework governing UPI and digital payments in India. They discussed the supportive role of the Reserve Bank of India (RBI) and NPCI in creating a robust regulatory environment that fosters innovation while ensuring consumer protection. However, they also highlighted challenges such as the need for continuous updates to regulations to keep pace with technological advancements and cybersecurity threats. Chatterjee, R., & Mukherjee, A. (2019) addressed the security and privacy concerns associated with digital payments, with a focus on UPI. Their research indicated that while UPI has implemented robust security measures such as two-factor authentication and encryption, there are ongoing risks related to cyber fraud and data breaches. They recommended continuous improvement in security protocols and user education to mitigate these risks. Sharma, V., & Gupta, R. (2021) conducted a comparative analysis of UPI with other global digital payment systems such as PayPal and Alipay. They concluded that UPI's real-time transaction capability and its integration with the banking system give it a competitive edge. Their study also noted that UPI's success could serve as a model for other developing economies aiming to enhance their digital payment infrastructure. Rao, K., & Singh, N. (2020) investigated the impact of UPI on traditional banking practices in India. They found that UPI has significantly reduced the reliance on cash transactions and physical banking, leading to a decline in foot traffic at bank branches. Their research suggested that banks need to adapt by enhancing their digital services and leveraging UPI to offer new financial products. Patel, H., & Desai, P. (2021) explored future prospects and potential innovations in the UPI ecosystem. They discussed upcoming features like UPI 2.0, which includes options such as overdraft facilities and auto-debit mandates. Their study predicted that future integrations with technologies like blockchain and AI could further revolutionize digital payments, enhancing security and user experience. Verma, R., & Kumar, A. (2019) focused on consumer perceptions and trust in digital payment systems, particularly UPI. Their research showed that consumer trust has grown due to consistent performance, transparency, and the involvement of reputable banks and financial institutions. They emphasized the importance of maintaining high standards of security and user support to sustain and build further trust. Data is collected from other sources which has been published or released earlier is known as secondary data. The secondary sources of data for this research are Government websites,

Newspapers, Magazines, Other Published Journals, Reports by various companies, etc. The data has been taken from official portal, news websites, article, research paper and filter them, verified them with credit report to prove the authenticity of the data so that the research paper should be factually correct and explain the research with proper number. The biggest source of data is internet on which NPCI portal which is agency which rules over UPI has given all the latest information about UPI.

Internet and mobile connection have led to a substantial evolution of India's UPI system. Rapid mobile network expansion and reasonably priced data plans have made digital services widely accessible, hence establishing UPI as a safe platform for real-time transactions. The ability to combine complex encryption techniques with real-time processing powers demonstrates how communication technology works. The adoption of digital payment systems like UPI has been made possible by the government's and the private sector's initiatives to digitize the economy, such as Digital India, which is transforming India into a society empowered by technology. Important companies like Paytm, PhonePe, and Google Pay have played a crucial role in increasing UPI popularity and usage, extending the reach of digital payments, and creating a competitive atmosphere that encourages innovation and constant development.

INDIA COMMUNICATION TECHNOLOGY

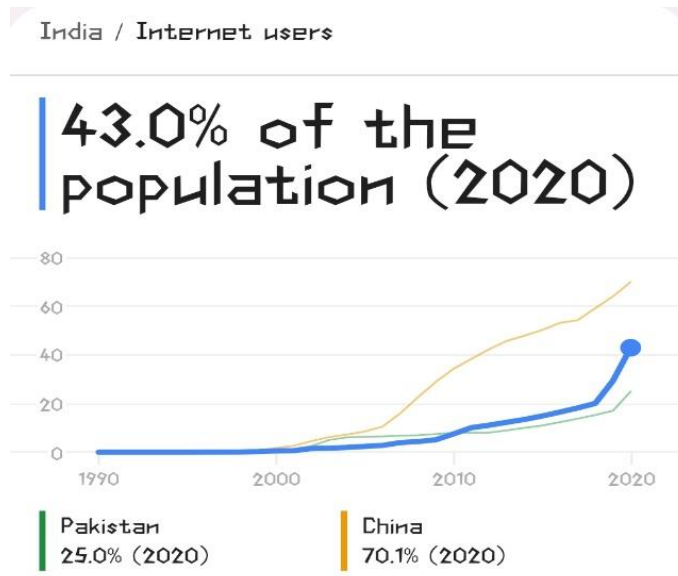


Reach of internet in INDIA

The internet users as of 2020 are about 75 crores. Which is 43.0% of total population of INDIA. If we talk about smart phone users then it is 46.5% of its total population.

In 2021, about 78 percent of India's above 15 years owned an account at a bank. This was a significant change from only 44 percent in 2011. This growth suggests a move towards financial inclusion of marginalized groups within the country –

from women, to the out-of-labour force, less educated and the poor. Digit number are not only standing here but has thrown an exponential growth on quarterly as well as yearly basis. INDIA with such a huge population is ranked first in



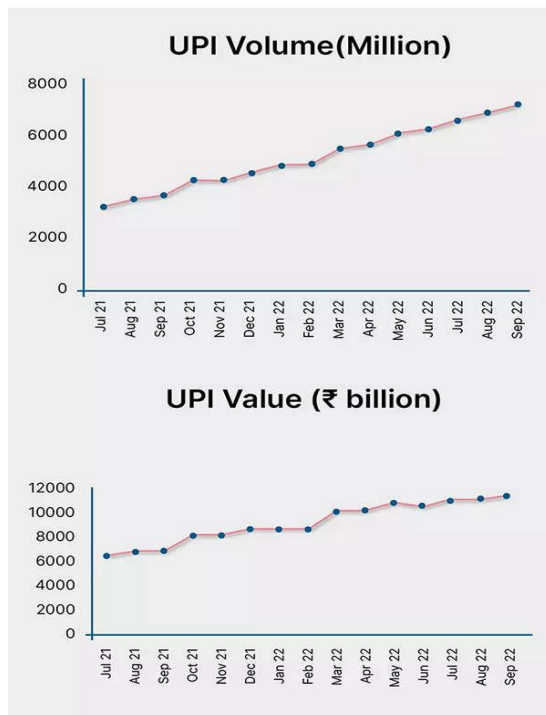
terms of value of transaction through UPI which is almost three times then second one China.

UPI (Unified Payment Interface)

Unified payment interface is a system that provides real time transfer of money from one user to another user. it allows us to transform transfer money between individuals, merchant or anyone who accept it. the RBI is the regulatory body for digital payment upi has been launch on 11th April 2016 and its present in countries like INDIA Bhutan, Nepal, Oman, UK, France, Malaysia, Singapore and UAE. As per February 2023 data there are 458 banks that are active on upi portal. INDIA 's digital payment system consists of numerous payments platforms. Unified Payment Interface (UPI) which was launched in 2016 is a revolutionary payment solution to enable country to quicken the transformation rate towards less cash economy. UPI is a simple and faster method of transfer of funds from one person to another. The launch of UPI and the INDIA Bill Payment System, as well as zero merchant discount rate (MDR), service tax, an increase in POS devices in rural areas, and encouraging news about the issuing of 'Rupay' cards, have energised the payments landscape. Using a Virtual Payment Address (VPA) instead of entering bank account information and IFS codes has simplified transactions. UPI is not confined to a single mobile application; the service is provided by a number of apps supported by leading organisations throughout the world, including WhatsApp, Google, and Walmart, among others.

Industry Trends

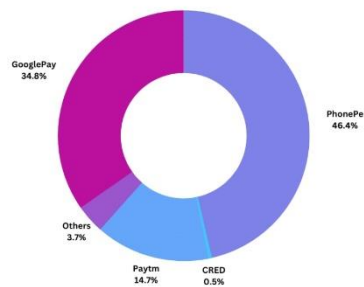
The Transactions using the UPI(Unified Payments Interface) network touched a record high in July 2023, both in terms of volume and value, after witnessing a slight dip in June. The value of total UPI transactions touched ₹15.34-lakh crore, up 4 per cent m-o-m and 44 per cent y-o-y Basis. It is forecasted that, UPI payments will boost up additional 1.12% in GDP by 2026 As a result, the digital payment sector is undergoing major and rapid development. Among digital payments, UPI has the most promise for accelerating digital payments and putting them all under one umbrella of digital financial inclusion. Customers' attitudes toward banking goods are continually changing



MAJOR PLAYERS

The market share of application, volume of transaction, value of transaction and no. Banks live over the

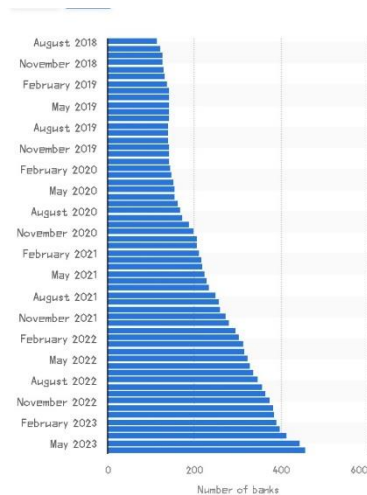
UPI Apps	Market share
PhonePe	46.38%
GooglePay	34.75%
Paytm	14.66%
CRED	0.5%
Others	3.7%



Share of UPI Apps in all UPI transactions as of June 2023

Source; NPCI

- The number of banks live in UPI since 2018 till May 2023.



Source: NPCI

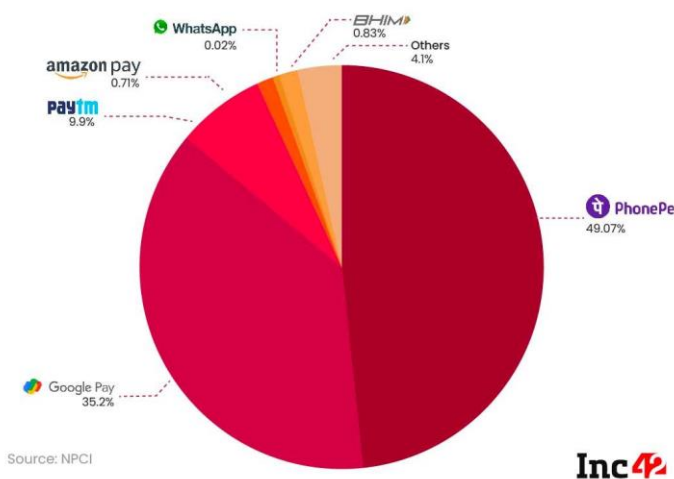
Banks live on UPI

Source; NPCI

Analysis

Secondary data analysis refers to the process of analysing data that was collected by someone else for a different purpose. Researchers often use secondary data sources, such as surveys, government records, or academic studies, to answer new research questions or to explore different aspects of a topic. This approach can save time and resources compared to collecting new data. However, researchers need to critically evaluate the quality and relevance of the secondary data to ensure accurate and meaningful results.

App Wise UPI Transaction Value - March 2022



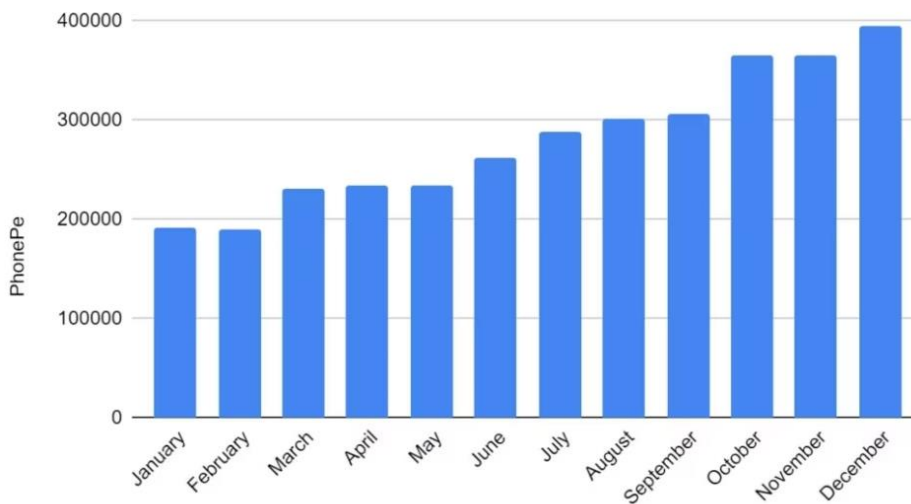
SOURCE; NPCI

Phone PE

PhonePe is a payment application which is used for UPI Transactions. Sameer and Rahul who are the founders Of PhonPe launched this payment application in 2015. PhonePe can be used in 11 spoken languages in all over INDIA. Mutual funds, Digital Gold, Insurance, etc are the Services also provided by PhonePe. One more feature is Using this application you can also withdraw money from The PhonePe merchants. The app served more than 10 crore users as of June 2018, processed 500 crore transactions by December 2019, and crossed 10 crore transactions a day in April 2022. It currently has over 44 crore registered users with over 20 crore monthly active users.

Source Inc 24

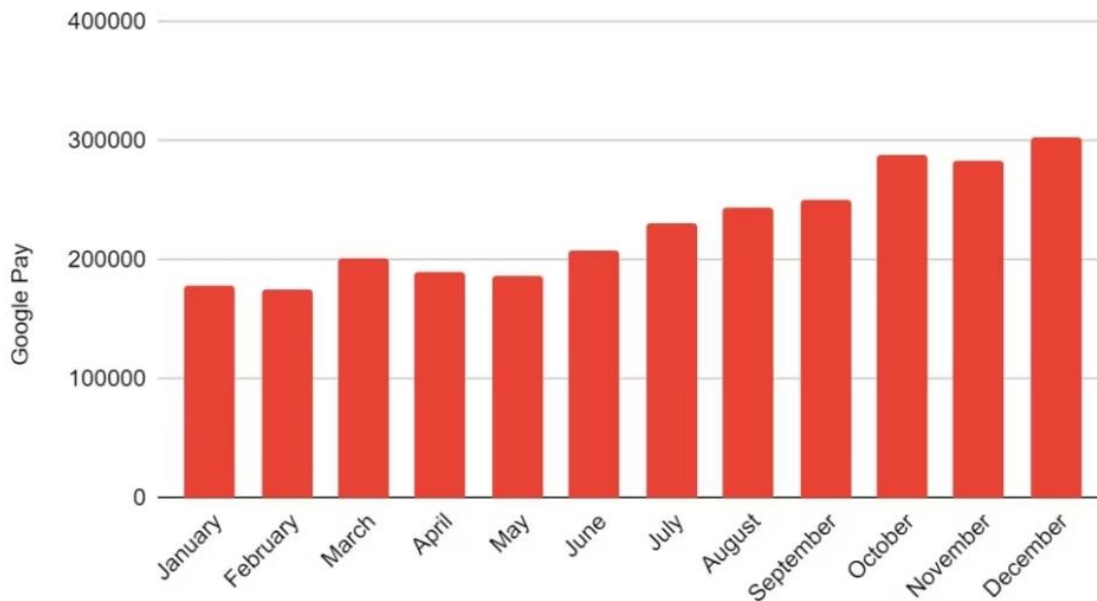
PhonePe Transaction Value In CY21



Google Pay

Tez pay which is widely known as Google Pay has been Developed by one of the biggest company Google Inc was Developed in 2017. 42 countries already adopted Google Pay And its global reach is increasing day-by-day. 9 languages Are available to use in this application. Google Pay has Tied up with ICICI bank to provide loan and to earn on the interest charged. “Toggle” is the feature which is only provided by Google which keeps your transaction history safe even from Google itself. Google Pay with 36% market share is the leader following PhonePe. 220 million are registered and 10 million merchants prefer Google Pay.

Google Pay Transaction Value In CY21

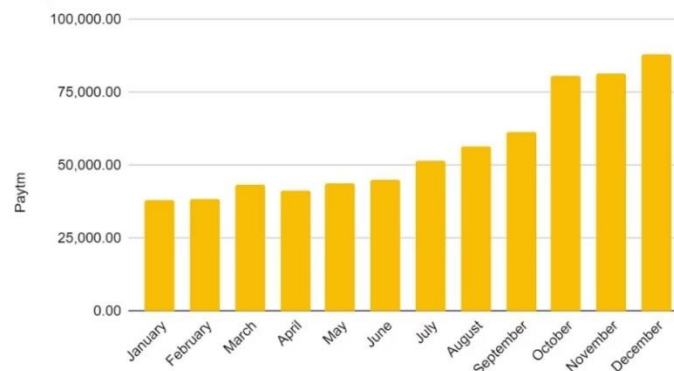


Source ;npci

Paytm

One97 communication the parent company of Paytm found by Mr. Vijay Sharma in 2010. Digital products like wallet, mobile payment, online shopping, Paytm sound box, etc were introduced in 2014 and marked their presence. In 2015 Paytm launched its own bank after getting license from RBI. 350 million users are registered on Paytm which is the

Paytm Transaction Value In CY21



highest among the others and around 60 million bank customers. They recently started Paytm Postpaid which gives service similar to credit card. Paytm earns its revenue through loan they provide and various other services.

Future of UPI

The UPI's future growth looks promising. UPI, comprising 75 per cent of INDIA 's digital transactions, is expected to grow four-fold by 2026. A PwC report states that UPI may constitute almost 90% of total transactional volume in retail digital payments over the next five years as it expands to rural areas and tier III and IV cities. UPI's global expansion, too, holds a lot of promise. Sample this: India s spent \$10 billion on overseas travel between April and December 2022. Considering the substantial scale of international spending, the internationalisation of UPI can contribute significantly to the growth of the India economy. With UPI going global, the payments platform will likely face tough competition from Visa, Mastercard and other long-established global payments giants. Visa and Mastercard occupy about 80 per cent of the global payments market space, and dislodging them will be a tall order. "These payment platforms and networks have been around for a while and are cash-rich, so they will not make it easy for UPI to grow and eat away their market share and profits". Moreover, UPI will have to adjust its technology to cater to the wider customer base in the Western world. Initially, the cost of transfer and remittance fees will be high due to UPI's low rate of penetration. Compliance with various digital regulations and the need for interoperability between various payment systems will be major challenges for UPI. "To overcome these challenges, UPI stakeholders can concentrate on collaborating with global payment system providers and regulators to ensure compliance with local regulations and standards".

Limitation of the study

1. The INDIA digital payments landscape is vast and complex, making it challenging to analyse all relevant developments and trends in a single analysis.
2. The underlying technologies and regulations are complex and can be difficult to understand.
3. The dynamic nature of the market, with new technologies and regulations emerging constantly, makes it difficult to provide accurate and timely forward-looking analysis.
4. Specific limitations include data availability and quality, which can be incomplete or unreliable, making it difficult to draw accurate conclusions about the current state of the market and its future prospects.

FINDINGS

1. Through our investigation, we have determined that our goals have been met and our objectives have been finished. With the advent of 4G and 5G, the Indian communication industry is growing quickly.
2. The potential of UPI is enormous, and as a result, it is becoming worldwide.
3. The key players are using payment methods to ensure safety, security, and seamless transactions. UPI will become more globalized in the future and explore new concepts while developing a worldwide digital payments system by taking the lead.

SUGGESTIONS

- Ensuring personal data and personal privacy should not be compromised.
- Available the networks.
- Providing offline payments channel with the help of banks and private players.
- Expansion to the current globalised world to do smooth transaction.

CONCLUSION

It's a golden era of INDIA payment sector where untouched market is booming on its full potential and letting the world know the POWER OF RISING INDIA. In the today's world one word is common that is "Digitalisation" similar has been applied on Payment Industry Which has been continuously converting in to Digital and is growing rapidly year-on-year. The study majorly focused on the "Strategic analysis of UPI Applications in INDIA". The study revealed that the user Base of UPI apps is increasing due to various benefits Such as ease of use, two factor authentication, no need to Carry change was major benefit for the users. UPI stands at the top of the payment System in INDIA with more than 50% of payments have been done by adopting it and surpassing the other modes of Digital payments aggressively. INDIA must share this technology with fellow countries to earn additional forex and enhance its soft power across the globe. Further, producing smartphones at a nominal rate inside INDIA will help UPI to Reach its height as smartphones are the real backbone for the success of UPI. Recently, the government has also come Up with a national cybercrime reporting portal to register grievances through which online fraud can be trapped better. Moreover, NPCI and RBI are working together to attain global reach with UPI to provide secure payment infrastructure for cross-border shoppers and travel. This UPI global through NIPL will stipulate a way in exploring international Business propositions and afford a streamlined use of UPI in the international market. Thus, the future of UPI looks Promising, both in terms of its continued growth within INDIA and its potential for expansion to other countries. As per our study we concluded that most of the people preferred Online Payments over Cash because Carrying cash we also carry the risk of losing it. Our study Indicates that UPI has a great future in long term on the basis of this data analysis.

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