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# The Next Wave of Digital Payments: Innovations, Challenges, and Future Prospects.

Mrs. Avani Suraj Kadam

Arts and Science College, Sawarde anusonawane95@gmail.com

**Abstract**: Wireless technologies play an increasingly important role in the evolution of digital services, emphasizing convenience and speed. In the last decade, digital payments in India have grown dramatically, and the report forecasts continued growth through 2024, especially through the Unified Payments Interface (UPI), which is expected to dominate the payments landscape with a target of 15-20 billion transactions per month set by the National Payments Corporation of India (NPCI). Additionally, the paper discusses how the Account Aggregator framework can facilitate deeper open banking and the development of value-added financial services. Further, it identifies four additional key factors that are expected to reshape the Indian payments industry by 2024, highlighting the implications for digital ad.

Keywords: Wireless technologies, Unified Payments Interface(UPI), cashless economy, Biometric payments

# I. INTRODUCTION

Wireless technologies are essential for bringing our vision of a digital world to life. While the initial step involves ensuring availability, the true innovation lies in achieving exceptional "speed and convenience" in accessing digital services. Although applications and devices are already interconnected, enabling easy access and portability, the real competitive edge will be offering instant, seamless experiences exactly when needed. Let's explore the key elements driving digital adoption in the payments sector.

India has witnessed rapid growth in digital payments over the past decade, with further acceleration expected in 2024. UPI is anticipated to lead this growth, with NPCI targeting 15-20 billion monthly transactions. Additionally, the Account Aggregator framework will enhance open banking, enabling advanced financial services and tools. Beyond UPI and open banking, four other key factors will significantly reshape India's payments industry by 2024.

# **OBJECTIVES:**

- To examine the evolving landscape of digital payment methods in the contemporary financial ecosystem.
- To critically analyze key factors driving the adoption of digital payment technologies among consumers and businesses.

# **Research Methodology:**

The data is collected from secondary data method.

# Data Collection & Analysis:

# What is Digital Payment?

Digital payments involve transactions conducted electronically, where money is exchanged between individuals or entities via digital platforms or channels. In other words, digital payments facilitate the transfer of money between accounts using electronic devices or services.

These transactions can occur both online and in physical retail settings. For instance:

- Completing a purchase on an online shopping website through UPI.
- Making payments at a neighborhood grocery shop with a mobile wallet, credit card, or banking application.

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# Why Choose Digital Payments?

Digital payments offer a faster, safer, and more cost-effective alternative to <u>cash transactions</u>, especially in emerging and developing countries. Every day, billions of dollars are paid in cash for wages, social benefits, humanitarian aid, and supplier transactions. Shifting to digital payments can:

- Improve financial access for low-income groups, especially women.
- Enhance security by reducing the risks of theft and fraud.
- Increase transparency, making it easier to track and manage funds.
- Lower transaction cost for businesses, governments, and global organizations

# **Digital Payment Examples**

Online payment method examples include:

# 1. Mobile payment apps

Apple Pay, Google Pay, Paypal, and Samsung Pay

# 2. Digital cards

Credit, debit, or prepaid cards issued to a customer's mobile or digital wallet

# 3. Contactless payments

Credit, debit, or prepaid cards with <u>near-field communication (NFC) technology</u>, or <u>mobile wallets</u> that use magnetic security transmission (MST) technology as qualified as <u>contactless payments</u>.

# 4. Bank transfers

Direct transfers, also known as ACH transfers, are usually inexpensive or free and take one to three business days to execute.

# 5. Biometric payments

Mobile apps and other digital payment agents use biometric verification to authenticate transactions. For example, smartphones can send information with a <u>payment request</u> that includes biometric information.

# 6. National Electronic Toll Collection (NETC) FASTag

This interoperable solution uses Radio Frequency Identification (RFID) technology to allow individuals to make toll payments while their vehicle is in motion.

# **Factors Affecting The Future of Payments**

Here are the few factors affecting the future of payments in India:

#### 1. Growth of UPI

The Unified Payments Interface (UPI), introduced in 2016, has significantly transformed peer-to-peer (P2P) payments in India. By 2023, UPI transactions exceeded 22.7 billion, amounting to approximately \$768 billion. With robust participation from leading banks and digital payment applications, UPI is expected to account for more than half of India's digital payment transactions by 2024.

# 2. Expansion of Account Aggregator Framework

The Account Aggregator (AA) framework, introduced in 2021, is designed to simplify the secure sharing of individuals' financial data with third parties for services such as loans and investments. As more Account Aggregators receive final approval from the Reserve Bank of India (RBI) in 2024, the framework is expected to drive deeper open banking integrations, stimulate fintech innovation, and support the development of value-added services, including advanced personal financial management tools.

# 3. Pay Later Goes Mainstream

Emerging payment solutions such as Pay Later are rapidly gaining traction, particularly among young urban consumers. Leading providers like LazyPay, Simpl, and ZestMoney are actively expanding their merchant partnerships and increasingly focusing on penetrating smaller cities.



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By 2024, it is projected that over 50 million Indians will utilize Pay Later services for both online and in-store transactions. Offering interest-free credit options, Pay Later is poised to capture approximately 15–20% of all e-commerce payment volumes.

# 4. Digital Wallets Consolidate Share

As UPI experiences exponential growth, digital wallets are increasingly focusing on strengthening their value-added service offerings. Leading players such as Paytm, Google Pay, and PhonePe are evolving into super apps, integrating features like stock trading, e-commerce, and other financial services.

Strategic partnerships with merchants, banks, and fintech companies will be crucial for digital wallets to maintain and defend their market share. By 2024, it is projected that the top three digital wallets could collectively command over 80% of India's \$1 trillion digital payments market.

#### 5. Rise of New Payment Mechanisms

Advanced technologies are driving the emergence of innovative payment methods, such as voice-activated payments, the digital rupee, wearable payment devices, contactless cards, and WhatsApp-based transactions. By 2024, these solutions are expected to gain wider acceptance across specialized use cases.

The Reserve Bank of India's (RBI) pilot program for the digital rupee, conducted across select cities and sectors, will offer valuable insights into the implementation and potential of blockchain-based central bank digital currencies (CBDCs).

# 6. Regulatory Developments

The Reserve Bank of India (RBI) remains committed to balancing financial inclusion objectives with robust data and consumer protection measures. In 2024, new regulations concerning data sharing, open banking APIs, payment aggregators, and international remittances are expected to foster responsible innovation across the sector.

While these regulatory changes may introduce some compliance-related friction that could temporarily slow the pace of transformation, a forward-looking and progressive regulatory framework will be essential to sustaining the industry's long-term growth trajectory.

#### Growth of Digital Payments in India

Digital payments in India have experienced remarkable growth in recent years, driven by government initiatives, financial institutions, and technology companies. The 2016 demonstisation campaign, aimed at curbing black money and promoting a cashless economy, significantly accelerated digital payment adoption.

One of the most popular platforms is the Unified Payments Interface (UPI), launched by the National Payments Corporation of India (NPCI) in 2016. UPI enables real-time money transfers between bank accounts via mobile devices without requiring detailed bank information. By March 2022, UPI had processed over 4.4 billion transactions worth more than  $\Box$  10 trillion (approximately USD 132 billion).

Government efforts to promote digital financial inclusion, through programs like Jan Dhan Yojana and Aadhaarenabled payment systems, have expanded digital payment adoption into rural areas. Digital payments have transformed how Indians transact, creating new opportunities for businesses, especially small and medium-sized enterprises, to thrive in a digital-first economy.

#### **Future Opportunities:**

India presents a massive opportunity for digital payments due to its large population, increasing smartphone penetration, and the government's push towards a cashless economy.

# Increased adoption in rural areas

Although digital payments have seen substantial growth in urban regions, a large, underserved market still exists in rural areas. The government's emphasis on promoting fintech inclusion and enhancing digital infrastructure in rural communities offers a significant opportunity for digital payment providers to expand their reach and drive adoption in these emerging markets.

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#### Integration with e-commerce

With e-commerce becoming increasingly popular in India, digital payment providers have an opportunity to integrate with online marketplaces and provide a seamless payment experience for consumers. This will increase their adoption and drive e-commerce growth in the country.

# Adoption of new payment technologies

India has seen significant innovation in new payment technologies, including QR codes, contactless payments, and biometric authentication. As these technologies continue to mature, there is an opportunity for new payment providers to offer more secure and convenient payment options to consumers.

# **II. CONCLUSION**

The transition toward a cashless economy is a positive and progressive step; however, achieving a completely cashless society will require considerable time and sustained effort. Both government initiatives and private sector innovations, such as the development of e-wallet applications like PayTM and PhonePe, have contributed significantly to promoting digital payments. Nevertheless, major challenges persist, particularly the lack of awareness and digital literacy among the population, along with concerns over cybersecurity risks, such as hacking and potential financial losses. Addressing these challenges through targeted education, robust security frameworks, and trust-building measures is crucial for accelerating the adoption of digital payments.

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