

# EXPLORING THE IMPACT OF CENTRAL BANK DIGITAL CURRENCY ON FUTURE MANAGEMENT TRENDS IN INDIA

## Abstract

This paper explores the transformative role of Central Bank Digital Currencies (CBDCs) on future management trends in India. Building on the success of Internet Banking and the Unified Payment Interface (UPI), CBDCs represent the next significant evolution in the financial landscape, offering the potential for instantaneous transactions and borderless transfer of ownership. The analysis underlines the impact of blockchain technology, which has fostered the growth of digital currencies, with Bitcoin being a notable instance. However, the recent shift towards CBDCs as the future of national fiat currency is being examined critically. The paper emphasizes the increasing global interest in digital currencies due to their potential for financial inclusivity, speed, and transparency. The implications of these changes for India's financial management trends, particularly in the context of accelerating digital transformation, are thoroughly examined.

**Keywords:** Central Bank Digital Currency (CBDC), Blockchain Technology, Digital Transformation, Financial Inclusivity, Future Management Trends.

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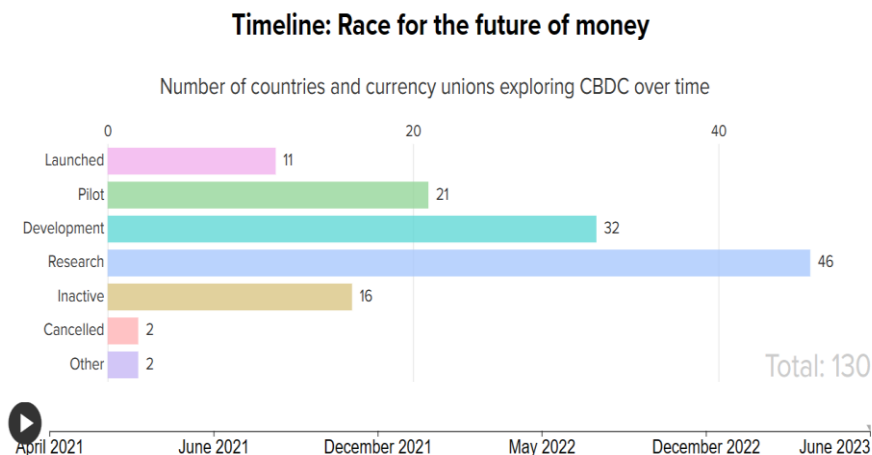
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## I. INTRODUCTION

The success of Internet banking and the Unified Payment Interface (UPI) has led to the next step of CBDC in India. Central Bank Digital Currency (CBDC) is also known as virtual money or digital currency. Considered as another major stepping stone after the launch of UPI, CBDC has similar properties as the physical currencies allowing instantaneous transactions and borderless transfer of ownership. Blockchain technology has not only brought many changes in the growth of digital currencies prospering over time, Bitcoin is one of the most well-known examples. However, recently the proposals about the Central Bank Digital Currency (CBDC) are being considered for the future of the nation’s fiat currency.

Currently, most countries are focussing on digital currencies because of their financial inclusivity, increased speed of transaction with transparency in local as well as cross-border transactions and reduction in transactional costs.

Furthermore, digital currencies can also provide a secure, efficient, and robust infrastructure for the financial ecosystem, while also offering new tools for monetary policy execution. Globally, 130 countries have been working towards the launch of CBDC (Atlantic Council, 2023). Out of them, 11 countries have successfully launched them while 21 countries are running the pilot projects and 32 countries are in the development stage, with 46 countries still exploring the future scope and implications of CBDC, and conducting research. However, in 16 countries, the CBDC launch has been inactive, and 2 countries have already cancelled the project (Atlantic Council, 2023). Figure 1 provides the overall status of CBDC exploration over the last few years:



**Figure 1: Countries status on CBDC launch**  
Source: Atlantis Council

In the recent years, the widespread use of mobile technologies has changed the entire picture of financial transactions in India. A decade ago, internet banking was considered a risky choice for people who wanted to transact money online; however, it became an easier and quicker mode of money transfer later, with the help of IMPS, NEFT and RTGS as a part of Internet banking. Later, the Unified Payment Interface (UPI) launched in 2016 by the

National Payments Corporation of India changed the scenario of digital payments in India, especially post-pandemic in 2019-21 (Gupta et al., 2023). This mode of online transactions showed a potential growth in digital currency transactions with extensive infrastructure that has led to robust growth in the digital currency system.

However, the adoption and integration of digital currencies include the prospect of CBDC which has significant implications for management trends among corporates, financial institutions, and government bodies. The purpose of this research is to delve into these implications and analyze the potential impact of digital currency, specifically focusing on CBDC, on management trends in India. We aim to shed light on how digital currency could reshape the management landscape in terms of operations, strategy, and policy, thereby charting a course for a future-ready India.

## II. LITERATURE REVIEW

Research on digital currencies' impact on business and management highlights significant findings, focusing on the Indian context, Dash, F. Ansari, Sharma, & Siddha (2022), elucidated in their research that innovations could increase the efficiency, transparency and security in banking, lower turn around time (TAT), reduced costs, and improving the customer satisfaction, with the help of smart contracts and blockchain technology's potential for revolutionizing the banking. However, for successful implementation, it is important to consider the need for regulatory clarity and relative security risks and their mitigation related to blockchain technology.

Another study conducted by Ozili (2021), states the feasibility of a CBDC in the UK and found that a well-implemented CBDC in a country could improve financial stability, increase monetary policy effectiveness, and reduce transaction costs. However, they also elucidate that before the implementation of CBDC, thorough research needs to be conducted on the current financial system of the country.

In a study specific to India, Priyadarshini & Kar (2022) examined the potential of CBDCs for improving financial inclusion. They found that a CBDC, combined with India's robust digital infrastructure, could significantly enhance access to financial services for the underbanked population.

Sethaput & Innet (2021), noted that digital currencies could reduce remittance costs and increase speed and transparency, looking at the potential impact of digital currencies on the global remittance industry, which is relevant for India, which is a developing nation has one of the largest recipients of the remittances.

Further insights into the potential impact of digital currencies on management practices come from Bhaskar, Hunjra, Bansal, & Pandey (2022). They argue that digital currencies, particularly CBDCs, could change the way businesses manage their finances, leading to increased efficiency and reduced costs.

Gupta et al., (2023) found that digital currencies offer significant opportunities but also pose regulatory challenges. Sharma and Das (2020) found high awareness and positive

attitudes, but a lack of understanding and trust hinder adoption. A robust and flexible regulatory environment is needed to adapt to the rapidly changing digital currency landscape.

The role of blockchain technology in supply chain management was explored by Tanwar & Verma (2018), who concluded that blockchain technology would not only improve transparency, traceability, and efficiency in supply chains but will be fruitful in case of implications for it for businesses considering adopting digital currencies.

Thakur and Srivastava (2014), provide a comprehensive overview of digital currencies globally and in India, emphasizing their potential to transform financial landscapes and require a balanced regulatory framework. The research highlights India's robust digital infrastructure and improved financial inclusion. However, the need for effective regulation and increased public understanding and trust in digital currencies are recurrent themes. This review provides a solid foundation for our exploration into the potential impact of digital currencies, particularly CBDCs, on management trends in India.

### III. METHODOLOGY

This study adopts a secondary data analysis methodology to examine the potential impact of Central Bank Digital Currency (CBDC) on management trends in India. A thematic analysis is conducted based on the research articles followed by current global case studies.

**Data Collection:** This study collects data from academic literature, peer-reviewed journal articles, industry reports, news articles, government and regulatory platforms, and professional services network sites to ensure accurate, up-to-date, and relevant information for the Indian context. The thematic analysis considers research papers and regulatory platforms.

### IV. DATA ANALYSIS

**1. Thematic Analysis:** The collected data is analyzed using a thematic analysis approach. Thematic analysis is a method for identifying, analyzing, and reporting patterns (themes) within data (Peterson, 2017). It organizes and describes the data set in rich detail and interprets various aspects of the research topic. This method helps to identify common trends and draw conclusions about the potential impacts of digital currency on various aspects of management in India. This analysis will consider both the potential benefits and challenges of adopting digital currency in India, thereby providing a balanced view of the subject matter.

The thematic analysis was conducted in several stages, including familiarization with the data, generating initial codes, searching for themes among the codes, reviewing themes, defining, and naming themes, and producing the final report. This methodical approach will ensure the robustness and reliability of the analysis.

This methodology, involving comprehensive data collection and rigorous thematic analysis, provides a robust framework for understanding the potential implications of CBDC on management trends in India.

**Table 1: Secondary data collected and considered for the thematic analysis**

	<b>Author</b>	<b>Themes</b>	<b>Research Gaps</b>
1	Dash et al. (2022)	Impact of CBDC on the Indian Economy; Use of Smart Contracts	Lack of understanding of how CBDC-supported smart contracts can impact the Indian economy
2	Priyadarshini & Kar (2022)	Viability of CBDC in India	Limited studies on the viability of CBDC in the Indian context
3	Meena Kumari (2021)	Potential Replacement of Notes and Coins by CBDC in India	Need for more empirical studies on the potential of CBDC to replace notes and coins in India
4	Ozili (2023)	CBDC in India; Regulatory Challenges	Need for a comprehensive study of regulatory challenges associated with CBDC in India
5	Banet & Lebeau (2022)	Financial Inclusion vs Disintermediation by CBDC	Insufficient studies exploring the trade-off between financial inclusion and disintermediation by CBDC
6	Banerjee & Sinha (2023)	Financial Inclusion through CBDC in India	Lack of extensive research on how CBDC can promote financial inclusion in India
7	Handa (2020)	Revolution in Payment Landscape in India by Digital Currency	Limited research on how digital currency can revolutionize the payment landscape in India
8	Soderberg et al. (2022)	Emerging Trends in CBDC; Policy Lessons	Need for more insights and policy lessons on emerging trends in CBDC
9	Giambelluca (2020)	Regulatory Challenges for Central Banks; Blockchain	Limited research exploring the regulatory challenges for central banks in the context of blockchain and CBDC
10	Wang et al. (2021)	Effects of CBDC News on Financial Markets	Need for more research on how news about CBDC affects financial markets
11	Shirai (2020)	Low Inflation; Monetary Policy; CBDC	Limited understanding of the relationship between low inflation, monetary policy, and CBDC
12	Agur et al. (2019)	Designing CBDC	Need for more research on how to design CBDC effectively
13	Kiff et al. (2020)	Survey of Research on Retail CBDC	Need for more comprehensive surveys on retail CBDC

14	Kozińska (2022)	Potential Consequences of CBDC on the Financial System	Insufficient studies on the potential consequences of CBDC on the financial system
15	Central Bank Digital Currencies (2023)	Implications of CBDC for Developing Countries	Limited research on the implications of CBDC for developing countries
16	Broby (2023)	Policy Implications of CBDC	Limited studies on the policy implications of CBDC
17	Foster et al. (2021)	Impacts of CBDC on Least Developed Countries	Insufficient research on the impacts of CBDC on least-developed countries
18	Gacias et al. (2023)	Implications of CBDC Introduction for Financial Institutions and Monetary Policy	Lack of comprehensive reviews of the implications of CBDC introduction for financial institutions and monetary policy
19	Franko et al. (2022)	CBDC-Supported Smart Contracts for Industrial Stakeholders	Need for more research on CBDC-supported smart contracts for industrial stakeholders
20	Asian Development Bank (2023a)	Role of CBDC in Financial Inclusion	Need for more research on the role of CBDC in financial inclusion
22	Tan (2023)	CBDC and Financial Inclusion	Limited studies exploring the relationship between CBDC and financial inclusion

Themes in Table 1, were then categorised into the sub-themes and then analysed to observe the impact of CBDC on various fields of management. A summary of the thematic analysis is provided in Table 2 given below:

**Table 2: Summary of Thematic Analysis**

Main Theme	Sub-theme	Definition
Financial Management	Transactional Efficiency	Discusses the potential of CBDCs to streamline transaction processes, promoting real-time transactions and reducing transactional costs and times.
	Impact on International Transactions	Highlights how CBDCs can lower service delivery costs and legitimize transaction processes in international contexts.

Risk Management	Cybersecurity	Addresses the cybersecurity threats posed by the digital nature of CBDCs.
	Market Volatility and Regulatory Issues	Discusses the potential for market volatility due to the novel status of CBDCs and the evolving regulatory environment.
Human Resource Management	Changes in HR Processes	Explores potential changes in payroll processes, employee benefits, and training requirements necessitated by the implementation of CBDCs.
Human Resource Management	Employee Education	Stresses the need for organizations to educate their employees about the nature and use of CBDCs.
Strategic Management	Impact on Business Strategies	Considers how CBDCs could significantly alter business strategies, particularly in sectors like finance, retail, and e-commerce.
Supply Chain Management	Impact on Payment Processes	Considers how the adoption of CBDCs could streamline payment processes in the supply chain, reducing costs, and improving transparency.
Customer Relationship Management	Impact on Customer Interactions	Discusses how CBDCs could affect how businesses interact with their customers, potentially improving customer experience but also raising concerns about security and privacy.
Marketing Management	New Marketing Avenues	Addresses how the advent of CBDCs opens up new avenues for marketing, but also the potential for consumer resistance due to unfamiliarity with the new technology.
Operations Management	Streamlining of Operations	Considers how CBDCs have the potential to streamline operations, particularly in areas like transaction processing and financial record keeping, while also raising the need for systems and processes to manage

2. **Case Studies:** Since the thematic analysis was completely based on past research papers, the practical implication of CBDC was done based on the case studies of Bahamas, Jamaica, Eastern Caribbean and Nigeria Countries and how they impacted the management trends in those countries. Also, two countries where these projects failed were considered to identify loopholes in the system or the reason for their failures.

Country	Project Name	Status	Motivations
Bahamas	Sand Dollar	Launched, with SD 303,785 in circulation and 32,736 wallets. Working	Improving financial inclusion, and strengthening security against money laundering or

		towards full interoperability.	illicit activities.
Jamaica	JAM-DEX	The completed trial rolled out on the Lynk mobile application in July 2022.	Reduce the storage and handling costs of cash usage.
Eastern Caribbean Countries	DCash	Launched in all member states, with two additional functionalities added: government payments and third-party wallet integration.	Financial inclusion, enhancing anti-money laundering and combating the financing of terrorism measures, and expanding banking across difficult terrains.
Nigeria	e-Naira	Launched phase 2 of development in August 2022, aiming to increase users to 8 million.	Improve financial inclusion, improve the accountability of the informal sector, and facilitate remittances.

- **Cancelled Projects:**

Country	Project Name	Reasons for Cancellation
Ecuador	Dinero electrónico	Low levels of trust in the central bank led to meagre adoption and eventual cancellation.
Senegal	eCFA	Lack of compliance with e-money regulations led to the BCEAO distancing itself from the project and eventual cancellation.

## V. FINDINGS

1. **Impact of Digital Currency on Management- Key Areas:** Based on the thematic analysis and the case studies, the potential implications of CBDCs on various management trends in India can be summarised below:

- **Financial Management**
  - **Improved Transaction Efficiency:** With a CBDC, India can streamline transaction processes within the financial system, enhancing real-time transactions, reducing transactional costs, and optimizing time. This digital infrastructure could significantly improve remittances and cross-border transactions, which is crucial for a country like India with a large diaspora.
  - **Impact on International Transactions:** CBDCs can lower service delivery costs and legitimize transaction processes in international contexts. This aspect can enhance the efficiency of international trade and commerce.
- **Risk Management**
  - **Cybersecurity Risks:** The introduction of a CBDC would require robust cybersecurity infrastructure to guard against potential threats. Hence, risk management strategies in India would need to factor in these cybersecurity risks, investing in technology, expertise, and protocols to secure the CBDC system.
  - **Market Volatility and Regulatory Issues:** The regulatory environment would need to adapt to the introduction of a CBDC, considering its novel nature and



potential for market volatility. This could include developing regulations around CBDC usage, ensuring compliance, and monitoring potential risks.

- **Human Resource Management**
  - **Changes in HR Processes:** The introduction of a CBDC in India would necessitate staff training and education. Employees in banks, financial institutions, and other related sectors would need to understand how to manage, transact, and secure CBDCs.
  - **Employee Education:** CBDCs could introduce changes to payroll processes, potentially allowing for real-time wage payments and reducing transaction costs.
- **Strategic Management**
  - **Impact on Business Strategies:** Businesses, especially in the finance, retail, and e-commerce sectors, would need to adapt their strategies to leverage the benefits of CBDCs. This might involve integrating CBDC payment options, revising financial strategies, and staying ahead of regulatory changes.
- **Supply Chain Management**
  - **Impact on Payment Processes:** CBDCs could streamline payment processes in the supply chain, potentially reducing costs and improving transparency. Real-time updates on payments could facilitate better cash flow management, critical for businesses across sectors.
- **Customer Relationship Management**
  - **Impact on Customer Interactions:** Businesses would need to ensure they provide secure CBDC transaction options while maintaining customer trust. This could involve educating customers about CBDCs, addressing privacy and security concerns, and integrating CBDCs into existing payment options.
- **Marketing Management**
  - **New Marketing Avenues:** Businesses can leverage the novelty and potential benefits of CBDCs in their marketing campaigns. On the flip side, customer education would be crucial to address potential resistance due to unfamiliarity with the new technology.
- **Operations Management**
  - **Streamlining of Operations:** CBDCs could potentially streamline operations, particularly in areas like transaction processing and financial record keeping. However, the need for new systems and processes to manage CBDC transactions effectively could involve significant operational changes.

These implications are based on the current global landscape of CBDCs and their potential impact on various management areas. The actual implications for India would depend on the specific design of the CBDC, the regulatory environment, and the preferences of consumers and businesses. Please note that this is a dynamic area of research, and the situation may evolve as more research is conducted and practical experience is gained with CBDCs.

## VI. DISCUSSION

The implications of the findings from the thematic analysis and case studies provide a comprehensive understanding of how Central Bank Digital Currencies (CBDCs) could impact various management trends in India, and how they align with the current literature.

**1. Implications Analysis and Comparison with Literature Review:** The literature review and thematic analysis highlighted the potential for CBDCs to improve transaction efficiency, reduce costs, and provide real-time financial data. This aligns with the findings from the analysis of the Indian context, suggesting that these benefits could be realized in India if a CBDC were introduced.

The potential risks associated with CBDCs, particularly around cybersecurity and regulatory challenges, are also consistent across the literature review, thematic analysis, and Indian context. This underscores the need for robust risk management strategies to secure the CBDC system and adapt to the regulatory environment.

The literature review and thematic analysis suggested that CBDCs could necessitate changes in human resource management, particularly around staff training and payroll management. These implications were also reflected in the analysis of the Indian context, highlighting the need for businesses to adapt their human resource strategies.

The potential impact of CBDCs on business strategies, supply chain management, customer relationship management, marketing strategies, and operations management was also consistent across the literature review, thematic analysis, and Indian context. This suggests that Indian businesses could face significant changes in these areas if a CBDC were introduced.

**2. Potential Challenges and Opportunities for Indian Businesses:** Based on the thematic analysis, literature review, and potential implications of CBDCs on various management trends in India, the following are some potential challenges and opportunities for Indian businesses:

### Challenges:

- **Cyber security:** With the introduction of CBDCs, businesses will face heightened cyber security threats. They will need to invest in robust security infrastructures to protect against potential cyber-attacks and data breaches.
- **Regulatory Compliance:** The regulatory environment for CBDCs is still evolving.
- **System Integration:** Integrating CBDCs into existing financial systems and processes could be technically challenging for businesses. They will need to update their systems and possibly overhaul their financial infrastructure.
- **Customer Adoption:** While CBDCs have the potential to improve customer experience, businesses may face challenges in getting customers to adopt this new form of currency due to unfamiliarity or concerns about security and privacy.

### Opportunities:

- **Efficient Transactions:** CBDCs can streamline transaction processes, making them faster, cheaper, and more efficient.
- **Improved Financial Management:** Real-time tracking of transactions made via CBDCs can provide accurate and timely financial data, aiding in better decision-making and forecasting for businesses.
- **Enhanced Customer Experience:** Businesses can leverage the benefits of CBDCs to improve customer experience.
- **Competitive Advantage:** Early adopters of CBDCs could gain a competitive advantage by staying ahead of the curve.

Indian businesses must adapt to the impact of CBDCs on their operations, considering factors like CBDC design, regulatory environment, and consumer preferences.

## VII. CONCLUSION

CBDCs' impact on Indian businesses depends on factors like CBDC design, regulatory environment, and consumer preferences. Businesses should closely monitor developments and adapt accordingly.

In conclusion, the advent of CBDCs presents both exciting opportunities and significant challenges for businesses in India. As we move towards a more digitized economy, it will be crucial for businesses to stay informed about developments in this area and be prepared to adapt their strategies and operations accordingly. This will be key to leveraging the benefits of CBDCs while mitigating potential risks.

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