International Journal of Cloud Applications and Computing
Volume 15 • Issue 1 • January-December 2025

Analyzing the Influence of Legal and Regulatory Challenges and Organizational Change Management on Blockchain Adoption in Project Management

Mohamed Arif Al Ali
https://orcid.org/0009-0004-8367-0997
University of Sharjah, UAE

Mohammad Mohammad Khan
University of Sharjah, UAE

ABSTRACT

This research explored the importance of blockchain technology in facilitating the overall functions of project management and provides a framework to utilize this technology, emphasizing the legal and regulatory issues and organizational change management. Quantitative research design was selected, which utilized structural equation modeling to analyze the relationships among the variables of interest, including legal and regulatory framework, organizational change management, project management, and blockchain adoption. The data were collected through a survey consisting of 41 questions; the survey included 206 participants from various categories. The findings reveal that integrating blockchain technology into project management can drive organizational innovation and growth. Despite its benefits, however, blockchain's complexity, security concerns, and evolving regulations pose significant barriers that organizations must address through investment in training, security, and collaborative regulatory efforts.

KEYWORDS

Blockchain Technology, Project Management, Organizational Change Management, Legal and Regulatory Framework

INTRODUCTION

Blockchain technology is a decentralized digital ledger that records transactions across a network of computers, enhancing security and transparency. It uses cryptographic techniques to store data, securely creating an immutable and tamper-proof record. The technology enables trustless and direct peer-to-peer interactions, eliminating the need for central intermediaries (Bashir, 2023). Crosby et al. (2016) stated that blockchain technology is "a series of blocks that records data in hash functions with a timestamp and link to the previous block and the data stored in various nodes referred to as the distributed ledger."

Incorporating blockchain technology in project management is intended to automate various organizational tasks. Blockchain technology facilitates access to relevant information across various stages of the project lifecycle (Sonmez et al., 2023). Such an innovative technological solution can

DOI: 10.4018/IJCAC.372904

be used to improve project performance in relation to monitoring and managing financial costs, as well as ensuring adequate quality control (Shishehgarkhaneh et al., 2023).

Problem Addressed

The problem under scrutiny in this study is essential to critically examine the potential of linking blockchain technology and project management. The reason for linking these two domains is that both blockchain technology and project management can be effectively used to modify the flow of organizational resources that are crucial for the completion of different projects. Blockchain technology provides a relevant environment for organizations to enhance their project management processes by optimizing different functions and tasks (Irfan et al., 2021). While previous works cover the potential of blockchain technology in different industries, blockchain has not been explored in project management practices, specifically in regulation and change management.

The unpredictable and rapidly evolving regulatory landscape in countries worldwide presents a significant challenge for organizations in governance structures and data privacy. This hinders these organizations from fully leveraging the potential of integrating blockchain technology into managing various organization projects, as noted by Janssen et al., (2020). Another critical issue that has sparked the interest of this study is the scarcity of practical guidance and real-world experience, so that there is a paucity of research to offer success stories from the experience of early adopters of blockchain technology depicting how to overcome challenges faced during its integration, especially in organizational change management. Pawczuk et al. (2019) opined that, even though over 80% of businesses considered blockchain technology crucial to an organization's strategy, few (39%) successfully integrated it into their production units. This elucidated the resounding challenges and issues pertaining to blockchain adoption experienced by firms regarding its integration into organizational project management practices. Experts in different industry sectors and organizations need a holistic approach to implement blockchain's specific and practical implications in project management. Therefore, the current study addresses this research gap by providing in-depth insights into the specific nature of blockchain technology and the different stages of implementation.

Aim and Objectives

The current research aims to provide a practical methodology to serve as a framework to implementing blockchain technology in project management practices, along with the trends and expectations related to this adoption process, which is seen from multiple perspectives. In such accord, the objective of this study is to explore the adoption of blockchain technology, emphasizing its alignment with legal and regulatory environments in addition to the challenges and issues marred by its organizational change management. This paper investigates how blockchain technology aligns with current legal and regulatory frameworks in the realms of best practices. Further, it extrapolates key organizational change management challenges during blockchain technology adoption, including its design to consider human resources, training, and cultural aspects to enhance organizational transactions.

Three research objectives are outlined to guide this study:

- Research Objective 1 (RO1): To investigate the impact of integrating blockchain technology into project management practices on enhancing project overall performance and identify the key factors that contribute to these improvements.
- Research Objective 2 (RO2): To systematically evaluate and analyze the relationship between regulatory frameworks and the adoption of blockchain technology by focusing on the awareness and understanding of blockchain among regulatory bodies, the adequacy of existing regulations, and the potential impact of new blockchain-specific regulatory standards.
- Research Objective 3 (RO3): To assess the critical factors influencing the successful adoption of blockchain technology in organization project management practices, specifically examining