

ABSTRACT

Digital transformation drives companies like SmartCo to adopt innovative technologies such as blockchain to enhance operational performance and competitiveness. However, the implementation of blockchain presents significant governance challenges, namely how to balance the need for innovation and speed with stability, security, and regulatory compliance. This research aims to design an effective blockchain governance for SmartCo through an ambidextrous approach that integrates the traditional COBIT 2019 framework with the DevOps focus area. This study employs the Design Science Research (DSR) methodology with a case study approach. The priority of Governance and Management Objectives (GMOs) was determined through an analysis of Design Factors, DevOps relevance, regulatory compliance, and a literature review related to blockchain. The analysis results established three GMOs as the main priorities: DSS05: Managed Security Services, APO01: Managed I&T Management Framework, and APO12: Managed Risk. A further capability assessment was then conducted to identify gaps across the seven COBIT 2019 components. The results of this gap analysis subsequently led to the design of structured improvements for the People, Process, and Technology aspects. These recommendations were then analyzed and prioritized using the Resource, Risk, and Value (RRV) approach, and subsequently compiled into an implementation roadmap. The estimated outcome of this implementation shows an improvement in the average capability level from 3.29 to 3.75, thereby providing a practical guide for SmartCo to manage blockchain securely and in alignment with its digital transformation goals.

Keywords: *Ambidextrous Blockchain Governance, Digital Transformation, COBIT 2019, DevOps, Design Science Research, Case Study, SmartCo.*