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Exploring the Suitability of Blockchain Technology in Improving Inter-Organizational Collaboration Workflows in E-Payment Processes at the Transport License Department of Malaysia

*Naharudin Saadan[1], Khairil Faizal Khairi[2]
[1]Accountant General's Department of Malaysia (Accounting office), Putrajaya, Malaysia
[2]Faculty of Economics and Muamalat, Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan, Malaysia
Email: *nahar.saadan@anm.gov.my
Corresponding Author: Naharudin Saadan

Abstract: This paper examines the persistent inter-organizational collaboration (IOC) challenges undermining the efficiency of electronic payment workflows in Malaysia's public sector, with a focus on the Transport License Department (TLD). It aims to explore the suitability of Blockchain Technology (BCT) in addressing issues such as fragmented systems, manual reconciliation, and communication bottlenecks. Adopting a Design Science Research (DSR) methodology embedded within a qualitative paradigm, the study collected empirical data through focus group discussions with seven frontline officers directly involved in daily e-payment collection processes. Thematic analysis was used to derive key insights and inform artefact development. The analysis revealed four central challenges: absence of a shared platform, operational inefficiencies and mistrust, inconsistent service-level agreement (SLA) compliance, and fragmented communication. Participants perceived BCT's decentralized and tamper-resistant features as enabling real-time data exchange, automated reconciliation, and smart contract-enforced compliance. However, socio-cultural resistance, including skepticism towards BCT and reliance on conventional communication norms, emerged as barriers. The study culminated in the development of the Blockchain-Integrated Collaborative E-Payment Framework (BICEF), which was validated by domain experts for its technical and operational feasibility. While the framework demonstrates potential for enhancing transparency and accountability in public sector financial workflows, further longitudinal studies are required to assess its real-world implementation and address cultural and organizational resistance to BCT adoption. This study contributes a novel application of BCT within the context of Malaysian public sector e-payments by integrating blockchain functionalities such as smart contracts and decentralized communication into a validated framework tailored to IOC needs. It advances both theoretical understanding and practical design for improving digital governance in high-volume public agencies.

Keywords: *Blockchain technology, inter-organizational collaboration, e-payment, Malaysian public sector*

1. Introduction

The advancement of digital technologies has transformed the Malaysian public sector, particularly in financial operations. In Malaysia, the adoption of electronic payment (e-payment) systems has surged, with transaction value exceeding RM500 billion in 2024 (Central Bank of Malaysia, 2024) and in the federal government, more than RM60.0 billion in revenue was collected via e-payment (Accountant General Department, 2024). This growth reflects the government's commitment to a cashless society, supported by policies such as the National Fourth Industrial Revolution (4IR) and the Malaysian Digital Economy Blueprint (Economic Planning Unit, 2021; MyDigital Corporation, 2023). However, despite these trends, the inter-organizational collaboration (IOC) workflows underlying e-payment processes remain fragmented, undermining efficiency and accountability. A significant example is the Transport License Department (TLD), a high-volume federal government agency that is responsible for vehicle licensing and revenue collection, handling over RM5 billion annually. In 2022, the Auditor General reported operational issues on e-payment collection, including delays in revenue remittance amounting to RM38.94 million in 2021–2022 and discrepancies in service-level agreements (SLAs) with acquiring banks and the accounting office (Jabatan Audit Negara Malaysia, 2022). The persistence of manual reconciliation, fragmented systems, and traditional communication channels has contributed to these IOC workflow challenges.

Blockchain technology (BCT) has emerged as a promising solution for addressing these IOC workflow challenges due to its unique features, such as decentralized, transparent, and tamper-resistant architecture (Faisal et al., 2024). Recent national discourse further underscores the urgency of addressing these limitations through technological innovation. Prime Minister Datuk Seri Anwar Ibrahim has reaffirmed Malaysia's commitment to penetrating the BCT potential. National initiatives such as the National Blockchain Roadmap

2021–2025 highlight BCT's potential in public sector transformation (Ministry of Science, Innovation and Technology, 2021). However, its implementation in public financial management remains underexplored (Alafnan & Mohdzuki, 2024). This topic continues to attract scholarly interest, particularly as new regional perspectives, particularly in the Malaysian public sector context, are needed to further explore BCT suitability in resolving IOC workflow challenges. Therefore, this study aims to explore the suitability of BCT in improving IOC workflows in TLD's e-payment processes. It specifically addresses two research questions:

- How can blockchain technology improve inter-organizational collaboration (IOC) workflows in the e-payment processes at the Transport License Department (TLD)?
- How can a blockchain-based framework be conceptualized and designed to address the challenges of inter-organizational collaboration workflows in the e-payment processes at the Transport License Department (TLD)?

This study contributes to the body of knowledge by providing an empirical understanding of IOC workflows in the public sector, particularly in the context of leveraging BCT application in e-payment processes at the TLD. Furthermore, the development of the BCT framework represents a novel conceptual and practical contribution, offering a systematic approach to visualize and conceptualize BCT-enabled improvements in IOC workflows.

2. Literature Review

In the Malaysian public sector, e-payment systems have significantly modernized financial operations, reducing cash dependency and enhancing efficiency (Yaakub et al., 2023). The TLD exemplifies this shift, handling over 40 million transactions annually through digital channels (Accountant General Department, 2024). However, operational challenges persist due to fragmented workflows involving TLD, acquiring banks, and accounting offices. These challenges include manual reconciliation, delayed fund transfers, and SLA discrepancies, which impede the IOC workflows for the post-operation in the e-payment process.

Inter-Organizational Collaboration (IOC) workflows

IOC workflows involve coordinated efforts among autonomous organizations to manage interconnected processes. In public e-payment systems, such collaboration ensures timely fund transfers, compliance with SLA requirements, and accurate data reconciliation. However, traditional and manual governance models often fail to support dynamic, multiple-party environments (Banerjee & Chandani, 2022; Ganeshu et al., 2024). In their study, Kostić and Sedej (2022) outline four core dimensions of inter-organizational collaboration, including collaboration, trust, control, and information exchange, which are particularly relevant in this context. Collaboration requires the integration of systems and shared platforms to enable seamless coordination across agencies (Hubenova et al., 2024). Trust is undermined when records are inconsistent, reconciliation is manual, and data validation is delayed, compromising confidence among stakeholders (Kowalski et al., 2021). Control is weakened by reactive enforcement of SLAs, limited real-time monitoring, and ineffective compliance frameworks (Upadhyay et al., 2021). Information exchange is hindered by traditional and manual communication tools such as email and telephone, and non-standardized reporting formats that impede timely, structured data sharing (Centobelli et al., 2022). Therefore, addressing these IOC workflows in the e-payment process, particularly in the TLD context, is an interrelated dimension as an essential lens for enhancing the operational efficiency and accountability of public sector e-payment systems.

Blockchain technology (BCT) as a solution

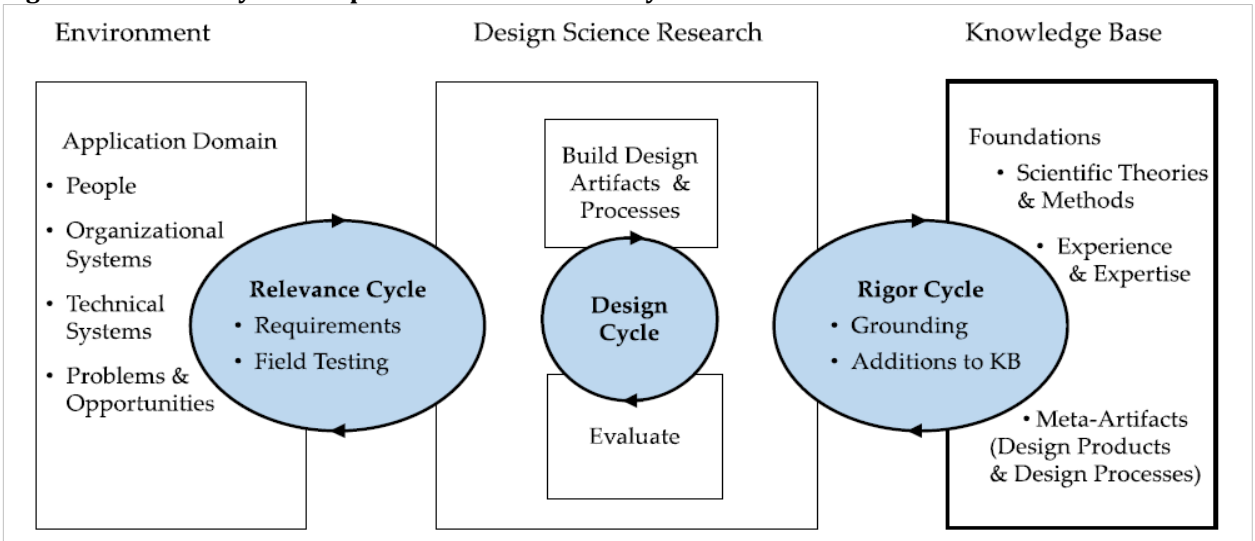
BCT offers a decentralized, tamper-resistant system that supports transparent data sharing, automated reconciliation, and smart contract-based SLA enforcement (Gomaa et al., 2023). By addressing fragmentation, manual reconciliation, and trust issues, BCT enables secure, real-time data exchange and process automation (Kang et al., 2022; Nguyen et al., 2023). In finance and supply chains, BCT has demonstrated its capacity to enhance transparency, trust, and efficiency (Rijanto, 2021; Spahiu et al., 2024). In Malaysia's public sector, however, BCT implementation remains at an exploratory stage (Alafnan & Mohdzuki, 2024). While the National Blockchain Roadmap promotes its adoption, concerns over user acceptance, system integration, and regulatory compliance persist. These gaps highlight the need for empirical studies to assess BCT's suitability within specific public sector contexts.

This review underscores the persistent challenges in TLD's e-payment IOC workflows, including fragmented operations, manual processes, and communication inefficiencies. BCT's features, decentralization, transparency, automation, and real-time monitoring offer a compelling solution. This study bridges the gap between theory and practice by evaluating BCT's suitability in TLD's context and developing a tailored framework for public sector financial systems.

3. Methodology

This study employed a Design Science Research (DSR) approach embedded within a qualitative case study, focusing on the suitability of BCT in enhancing IOC workflows in the e-payment process at the TLD. DSR was chosen for its focus on generating practical, innovative solutions to real-world problems through iterative cycles of design and evaluation (Hevner et al., 2004; Van Aken, 2005). The qualitative case study provided an in-depth understanding of operational realities within TLD's complex workflows (Yin, 2018). Figure 1 illustrates the DSR cycle proposed by Hevner.

Figure 1: The DSR cycles adapted from Hevner's study



Sources: Hevner & Chatterjee (2010)

Data Collection and Analysis

Empirical data were collected through Focus Group Discussions (FGDs) with seven operational officers at TLD directly involved in managing e-payment transactions. The study used the extended ask, record, confirm (ARC) technique to enhance the rigor of qualitative data collection and improve trustworthiness (Zairul et al., 2023). This method integrated three stages: targeted, open-ended questioning; real-time recording and categorization of responses; and immediate member checking of themes and interpretations during the (Zairul, 2021). Due to the limitation of BCT exposure, a Proof-of-Concept (PoC) dashboard was developed using TLD's mock operational data to familiarize participants with BCT concepts and to ground their reflections in practical scenarios. The PoC was given two months earlier to the participant before the FGD session.

Data were analyzed thematically using ATLAS. Ti 2025. A deductive coding framework was applied, guided by existing literature on IOC workflows and BCT suitability (see Appendix 1). The study themes were validated through peer debriefing and expert review to ensure analytical rigor and interpretive credibility (Lincoln & Guba, 1985). This study bridged the gap between theoretical innovation and real-world application by employing DSR to construct a BCT-enabled process workflow and engaging participants through a practical PoC dashboard. The qualitative case study inquiry enabled a nuanced exploration of BCT's suitability for addressing IOC workflow challenges within a Malaysian public sector setting. Ultimately, the study contributes to both design-oriented research and public sector digital transformation discourse by offering a contextually grounded, empirically informed assessment of BCT's value in improving IOC workflow in the e-payment process.

4. Findings and Results

This section presents the key empirical findings derived from FGDs conducted with operational officers at the TLD, who are directly involved in the daily operation of the e-payment process. The analysis was guided by a deductive thematic framework informed by existing literature on IOC workflow challenges and the BCT's suitability to improve IOC workflow in the e-payment process at TLD (see Appendix 1 and Appendix 2). The findings are organized thematically according to four major themes: enhancing IOC workflow through a BCT as a shared platform, BCT improving operational efficiency and trust in IOC workflow transactions, mitigating risks in SLAs and compliance, and BCT strengthening communication on IOC workflow. Each theme encapsulates participants' perceptions, suggestions for improvement, and reflections on the suitability of BCT as a technological solution. These insights provide a contextual understanding of the operational complexities within TLD and serve as the empirical foundation for the subsequent discussion on BCT suitability in addressing these issues.

Enhancing IOC Workflow through a BCT as a Shared Platform

Participants consistently identified fragmented systems and inconsistent data access as major impediments to effective IOC workflows in TLD's e-payment process. A dominant theme in the data was the strong preference for a centralized, real-time data-sharing platform that would enable seamless access across key stakeholders, including TLD, the acquiring bank, and the accounting office. Several participants advocated for integrating existing systems into a unified platform capable of synchronizing data inputs and minimizing redundancy. Crucially, participants F6 and F7 explicitly highlighted BCT's unique suitability for this role. F6 proposed a BCT-enabled platform as a practical and secure solution, capable of consolidating data sources and providing real-time access, thus reducing errors and enhancing operational synchronization. F7 added that the interoperability inherent in BCT would ensure smooth system adoption and reduce resistance from users. These views indicate a consensus that BCT's decentralized, tamper-resistant architecture offers a highly effective solution to the challenges of fragmented IOC workflows and data silos in TLD's e-payment operations.

BCT improves Operational Efficiency and Trust in IOC Workflow Transactions

Participants voiced concerns over manual processes that hinder efficiency and contribute to errors. F1, F3, and F4 emphasized that automation could reduce the burden of manual reconciliation and expedite processes, while F2 highlighted the need for clear and standardized SOPs. F5 and F6 noted that enhanced data accessibility through integrated systems could empower officers to work more efficiently. Notably, F7 pointed out that BCT's ability to provide immutable, real-time records of transactions directly supports operational efficiency by reducing the need for manual verification and promoting trust in the system. Participants recognized that BCT's transparency and traceability features could establish greater confidence among stakeholders and provide a reliable foundation for daily operations.

Mitigating Risks in SLAs and Compliance using BCT

Delays in the T+1 fund transfer period were a major concern, with participants proposing improved monitoring mechanisms. F2 and F3 suggested real-time dashboards and early-warning notifications, while F4 specifically advocated for a BCT-based dashboard, emphasizing its immutable, time-stamped records to enhance accountability and traceability. F1 and F6 stressed the importance of regulatory clarity and stricter enforcement of SLA compliance, pointing out that BCT's smart contract capabilities could automate monitoring, trigger penalty enforcement, and ensure transparency in fund transfer processes. Participants generally agreed that BCT's inherent automation and traceability features offer a significant advantage over current manual and reactive monitoring systems.

BCT Strengthening Communication in IOC Workflow for E-payment Ecosystem

Participants identified a lack of structured communication as a major obstacle to effective collaboration. F1 and F4 suggested developing shared SOPs and templates for reporting, while F2, F5, and F6 emphasized the importance of regular meetings to foster proactive communication. F3 and F7 advocated for a BCT-enabled shared digital platform that would provide real-time notifications and updates, reducing reliance on ad-hoc methods like emails and phone calls. F6 specifically noted that automated alerts and immutable audit trails supported by BCT could significantly enhance operational transparency and accountability. Participants widely

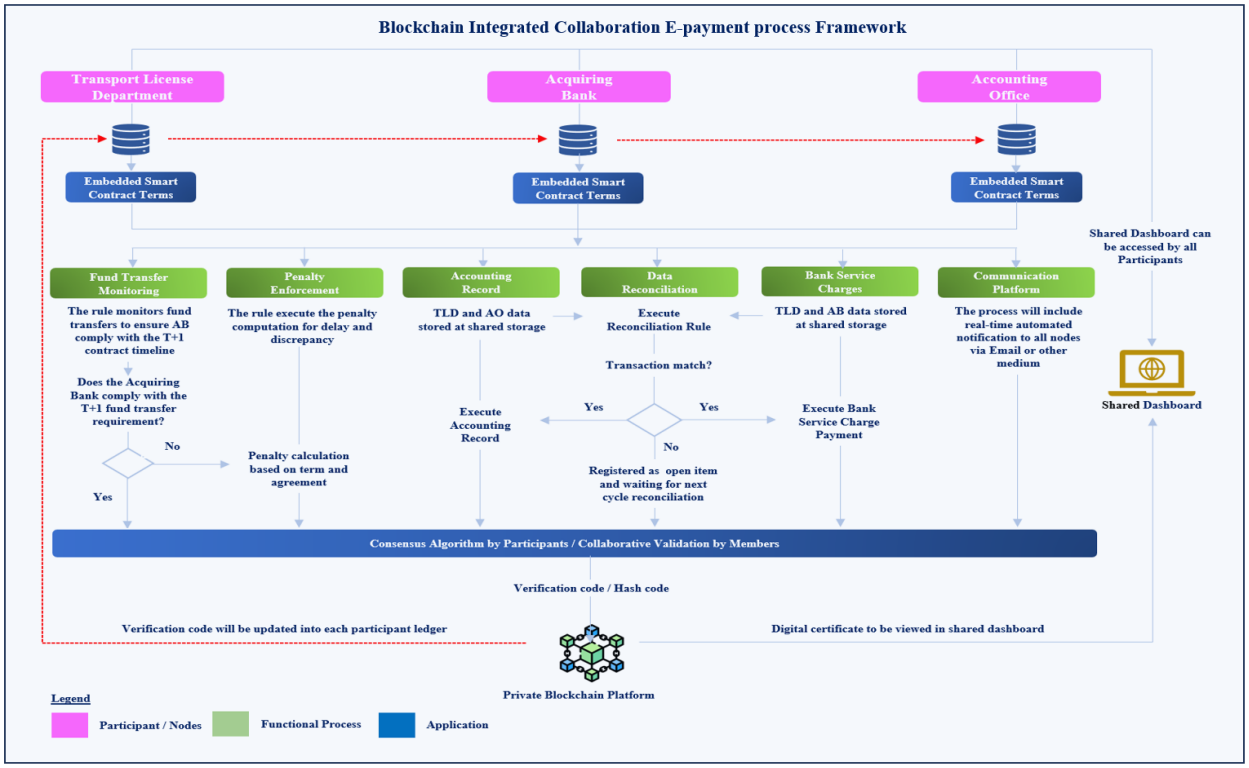
recognized that BCT's decentralized architecture and auditability could play a transformative role in streamlining communication and ensuring data integrity across agencies.

Proposed framework

This study presents the Blockchain-Enabled Collaborative E-Payment Framework (BICEF) to address the IOC workflows challenges in TLD's e-payment process (see Figure 2). The framework was developed from the empirical insights gathered through focus group discussions and triangulated with relevant literature to ensure practical and conceptual alignment. At its core, the framework comprises three main nodes: the Transport License Department (TLD), the acquiring bank, and the accounting office. Each node operates through smart contracts, automating key functions as below: -

- Fund Transfer Monitoring – ensuring compliance with the T+1 Treasury requirement.
- Penalty Enforcement – automatically applying penalties for delays or discrepancies.
- Accounting Records – synchronizing entries based on real-time verified data.
- Data Reconciliation – flagging mismatches for resolution in the next cycle.
- Bank Service Charge Management – automating service charge payments.
- Communication Platform – enabling secure, real-time communication and notifications.

Figure 2: Blockchain-Enabled Collaborative E-Payment Framework (BICEF)



The system employs a consensus mechanism, where each node validates transaction records, generating a tamper-proof verification hash. This ensures data integrity and transparency across all parties. A shared dashboard provides a user-friendly visual interface, displaying real-time updates and supporting operational decision-making with digital certification and audit trails. The framework is deployed on a permissioned blockchain infrastructure selected for its controlled access and compliance with public sector regulatory requirements. This ensures only authorized users can view, write, or validate records, safeguarding sensitive financial data.

The framework's design was validated by a Senior Accountant from the Accountant General's Department (AGD), a certified BCT developer, and an academic in digital governance. Their feedback confirmed its

alignment with Treasury Circular and *Surat Pekeliling Akauntan Negara Malaysia Bilangan 3 Tahun 2025* and best practices in BCT deployment. The framework addresses real-world operational challenges at TLD and offers a practical, scalable model for digital transformation and inter-agency collaboration in public financial management.

Discussion

The findings of this study acknowledge that fragmented operating systems remain a challenge to IOC workflows within the TLD's e-payment process. These challenges are not unique to the public sector; instead, the common challenges are also detected in private sector domains. Fragmented operational systems could obstruct data consolidation and delay transactional flows. For example, studies from Baiod and Hussain (2024) and Dowelani et al. (2023) reaffirm that fragmented operations contribute to delays in the settlement process, and they found that BCT is a suitable solution to strengthen stakeholder accountability. In the TLD scenario, the absence of a connected, real-time data-sharing platform has resulted in repetitive reconciliation processes, communication breakdowns, and delayed fund remittances, which are also observed in the traditional clearing system in the Guangdong clearinghouse (GCH) (Tsai et al., 2020). Therefore, the BICEF proposed in this study points to addressing these shortcomings by embedding BCT and smart contracts into core operational domains such as fund transfer monitoring, SLA enforcement, and data reconciliation. The proposed BCT framework is consistent with insights from extant literature (Centobelli et al., 2022; Rijanto, 2021), which suggest that automation can mitigate inefficiencies by minimizing human error, expediting processing times, and creating immutable records of transactions. Moreover, the integration of a real-time, shared dashboard fosters a culture of operational trust by enabling stakeholders to access timely and verified financial information (Sandner et al., 2020).

Furthermore, this study identifies SLA monitoring and enforcement as a critical area of concern within the TLD context. Currently, TLD's operational response remains reactive, resulting in inconsistent and often exposed to negligence. Similar issues have also been observed in broader institutional and commercial settings, such as those reported in Vietnam (Nguyen et al., 2023). This shortcoming is particularly notable in light of the Auditor General's audit findings, which have repeatedly highlighted delays in fund remittance as a recurring issue affecting public financial accountability. Therefore, in addressing these challenges, BICEF operationalizes its approach with smart contracts to enable the automated monitoring of SLAs and the enforcement of penalty provisions in instances of non-compliance. This approach may strengthen and improve procedural accountability mechanisms (Rachad et al., 2022). Moreover, the expert has affirmed that the framework is aligned with Treasury Circulars and operational guidelines, thereby reinforcing its feasibility and compliance with Malaysia's public sector context.

Meanwhile, the participants highlighted the current challenges of reliance on informal, ad-hoc channels such as email and messaging applications, which are inherently ill-suited for managing real-time and high-volume transaction environments. The manual and traditional communication tools are inadequate for complex, multi-agency collaborations (Karajovic et al., 2019). Thus, BICEF proposes a decentralized communication layer embedded with immutable records and automated notifications, offering a structural transition from reactive to proactive communication. This systemic shift is instrumental in reinforcing IOC workflow transparency, ensuring that critical information flows are timely, verifiable, and accessible to all authorized stakeholders (Sabri et al., 2023). Notably, the development of BICEF diverges from prevailing BCT models employed in the private sector, where adoption is primarily driven by efficiency gains, customer-centricity, and competitive advantage (Spahiu et al., 2024). In contrast, BICEF is grounded in the institutional imperatives of the public sector, namely, such as regulatory compliance, hierarchical accountability, and adherence to statutory obligations. Public agencies, such as TLD, operate within highly regulated environments that are constrained by Treasury directives and public audit requirements. Thus, BICEF is deployed within a permissioned blockchain infrastructure to ensure data sovereignty, controlled access, and alignment with the Surat Pekeliling Akauntan Negara Malaysia Bilangan 3 Tahun 2019. These attributes are comparatively less emphasized in private sector domains, where decentralization and rapid deployment tend to take precedence over regulatory formalities (Ølnes et al., 2017; Wang & Kogan, 2018).

Furthermore, BICEF addresses the IOC workflow in the post-collection phase of the e-payment process, an area that has received limited attention in the extant literature. The framework's design is also attuned to the well-

documented institutional resistance to technological innovation within the public sector, where legacy infrastructure and risk-averse organizational cultures often act as barriers to reform (Jayasuriya & Sims, 2023). This challenge is highlighted by studies indicating that public agencies tend to accommodate existing systems to avoid disruptions in service continuity (Benchis et al., 2025). To mitigate such resistance, this study introduced a Proof-of-Concept (PoC) dashboard that functions as a near-operational representation of a blockchain-enabled solution. This approach is consistent with established practices in government digital transformation initiatives, which often employ demonstrative tools to demystify emerging technologies and foster stakeholder confidence (U.S. Government Accountability Office, 2023). The PoC also serves to counter prevailing misconceptions, particularly the frequent conflation of BCT with cryptocurrency by illustrating its distinct utility in enhancing transparency, automation, and accountability within regulated public financial processes (Dias Santos, 2025).

Therefore, this institutional reflexivity embedded within BICEF not only exemplifies contextual responsiveness but also aligns the framework within the National Blockchain Roadmap 2021–2025 (Ministry of Science, Innovation and Technology, 2021). The deliberate inclusion of regulatory compliance, institutional culture, and user familiarization mechanisms affirms BICEF's potential as a replicable governance innovation across other public sector entities with similar IOC complexities. In sum, the distinctiveness of BICEF lies in its public-sector-oriented design, policy-embedded structure, and adaptive interface with institutional realities. These features elevate it beyond a technical artefact into a normative framework that contributes to the broader discourse on digital governance and inter-organizational reform. The framework not only addresses current operational limitations but also paves the way for sustained transformation in public financial management.

Emerging Themes: Socio-Cultural Barriers to BCT Adoption

In addition to the main findings, two emerging themes were identified that highlight socio-cultural barriers to the adoption of blockchain technology (BCT) in the public sector. First, the negative perceptions of Blockchain Technology. The participants expressed concerns that BCT is often associated with cryptocurrencies, which are viewed with suspicion due to issues like volatility and fraud. This misconception can reduce trust and hinder adoption in government settings. Clear communication and awareness efforts are needed to distinguish BCT's broader applications in governance from its financial origins.

Secondly, the continued use of informal tools such as email and WhatsApp for inter-agency communication was seen as inefficient and lacking traceability. These methods contribute to delays and oversight. Participants emphasized the need for structured, system-integrated communication tools, which BCT platforms can offer through real-time and auditable communication features. Despite participant suggestions for regular meetings and reporting templates, the limitations of these informal mechanisms suggest an urgent need for formalized, system-integrated communication channels.

5. Conclusion and Recommendations

This study reveals that TLD's e-payment ecosystem is plagued by fragmented systems, redundant manual processes, delayed fund settlements, and informal communication protocols, undermining operational efficiency and accountability. The proposed BICEF directly addresses challenges by integrating real-time data sharing, automated reconciliation, SLA monitoring, and decentralized communication through smart contracts. Validation by experts affirmed its alignment with operational, technical, and regulatory standards, highlighting its viability within public sector financial operations. By employing DSR embedded in a qualitative case study, this research answers its two core questions:

- How can blockchain technology improve inter-organizational collaboration (IOC) workflows in the e-payment processes at the Transport License Department (TLD)?
- How can a blockchain-based framework be conceptualized and designed to address the challenges of inter-organizational collaboration workflows in the e-payment processes at the Transport License Department (TLD)?

RQ1, on the how BCT can improve IOC workflows in TLD's e-payment processes, is addressed through evidence that BCT offers substantial improvements in collaboration, trust, control, and information exchange by

resolving data fragmentation, ensuring transparency, and automating compliance monitoring; and RQ2, on how the conceptualize the BCT framework to address the challenges of IOC workflows, is answered by presenting a context-specific solution operationalizing BCT features such as smart contracts and real-time dashboards to reduce human error, streamline operations, and strengthen inter-agency collaboration.

The study further extends Kostić and Sedej's (2022) inter-organization collaboration dimensions by identifying two emergent themes: negative perceptions of BCT, arising from its association with cryptocurrencies, highlight the need for awareness-building and policy clarification to promote BCT adoption in public administration, while entrenched traditional communication practices, such as reliance on WhatsApp and email, underscore the necessity for system-integrated, immutable communication channels, which are addressed by the BICEF's decentralized platform. These insights contribute to theory by demonstrating how BCT functions as a workflow artefact that operationalizes inter-organizational collaboration, transparency, and trust in public financial management. The inclusion of a Proof-of-Concept (PoC) dashboard further strengthens the framework's practical relevance and user-centered design.

Despite its contributions, the study is limited by its single case focus and use of mock data in the PoC, suggesting a need for future research to test the framework across multiple agencies and in live environments, while exploring strategies to overcome misconceptions and foster public sector trust in BCT. In conclusion, the study offers a theoretically robust and practically applicable approach to the BICEF framework, advancing both digital transformation in public sector financial systems and theoretical understanding of inter-organizational collaboration in digital governance.

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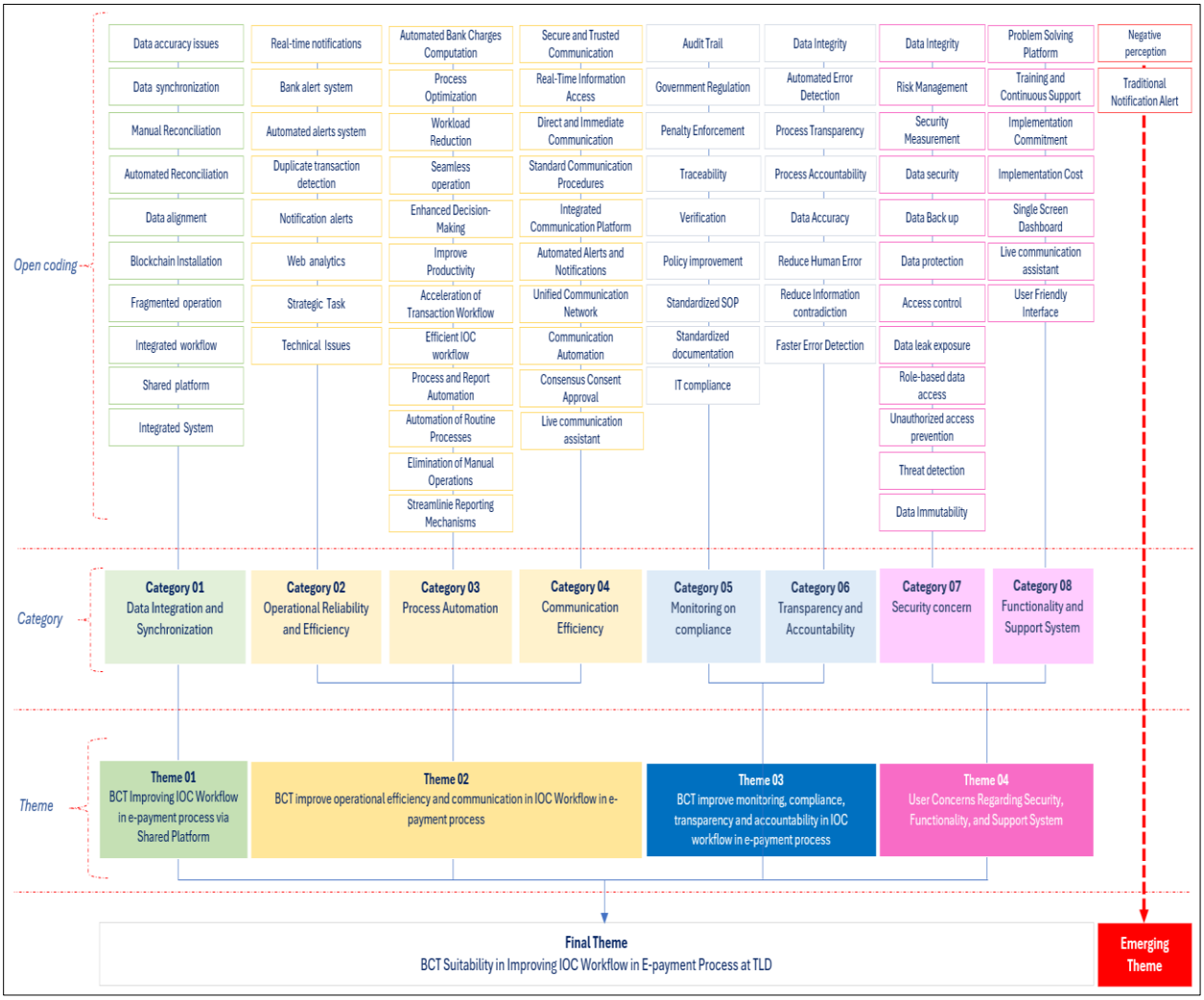
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Appendix 1
Thematic Coding Diagram



Appendix 2
Thematic Analysis Matrix

1. Main RQ
How is BCT suitable for addressing the IOC workflow challenges in the e-payment process at the TLD?

2. Aim of research
To explore the suitability of BCT in addressing the IOC workflow challenges in the e-payment process at the TLD.

3. Research approach and research inquiry
DSR with qualitative case study

4. Participant
TLD officers who are involved in the daily routine work in the e-payment process

Research Questions	Deductive codes / Theories	Strategy of inquiry	Inductive codes			Emerging themes
			Coding	Category	Theme	
How is BCT suitable for addressing the IOC workflow challenges in the e-payment process at the TLD?	Data Sharing Through a Shared System Improving Operational Efficiency Improving SLA Monitoring Improved communication system	Focus Group Discussion (FGD) with seven participants from TLD who engage in the daily routine operation in the e-payment process	-Automated Notification Alert System -Traditional Notification Alert -Technical Issues -Efficiency on the IOC workflow -Process and Report Automation -Automated Bank Charges Computation -Government policy and Regulation -Penalty Enforcement-SLA Discrepancy -Audit Trail and Traceability -Implementation Cost -Implementation Commitment -Data Safety and Access Control -Security Measurement -Risk Management -Consensus Consent Approval -Problem Solving Platform -Training and Continuous	**CAT 01: Data Integration and Synchronization** (Automated Reconciliation, Integrated System and Shared Platform) **CAT 02: Operational Reliability and Efficiency** (Automated Notification Alert System, Strategic Task, Technical Issues) **CAT 03: Process Automation** (Automated Bank Charges Computation, Efficiency on IOC workflow, Process and Report Automation) **CAT 04: Regulatory and Compliance Monitoring** (Audit Trail and Traceability, Government policy and Regulation, Penalty Enforcement-SLA Discrepancy) **CAT 05: Security and Error Minimization** (Data Safety and Access Control, Risk Management,	**Theme 01** Enhancing Inter-Organizational Workflow through a Shared Platform **Theme 02** Improving Operational Efficiency & Trust in IOC Workflow Transactions **Theme 03** Mitigating Risks in SLAs & Compliance **Theme 04** Strengthening Communication and IOC Workflow in E-Payment Ecosystem	**ET1** Negative perception of Blockchain Technology **ET2** Traditional Communication Practices

Research Questions	Deductive codes / Theories	Strategy of inquiry	Inductive codes			Emerging themes
			Coding	Category	Theme	
			Support -User-Friendly -Negative perception -Error Minimization and Error Detection -Real-Time Data Access and Monitoring -Data Integrity and Accuracy -Process and Data Transparency	Security Measurement) **CAT 06: Smart Contract Execution** (Consensus Consent Approval) **CAT 07: Stakeholder Communication and Coordination** (Problem Solving Platform, Training and Continuous Support, User-Friendly, **CAT 08: Transparency and Accountability** (Data Integrity and Accuracy, Error Minimization and Error Detection, Process and Data Transparency, Real-Time Data Access and Monitoring)		