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*Research Article*

# Information Systems Governance Framework for Supporting Organizational Decision Making in Digital Transformation Initiatives

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**Abstract:** Digital transformation initiatives have become essential for organizations seeking to remain competitive in today's rapidly evolving technological landscape. However, many organizations face challenges due to ineffective Information Systems (IS) governance, which hampers strategic decision-making and the successful execution of these initiatives. This study aims to develop an IS governance framework that enhances decision-making quality by aligning IT decisions with organizational goals during digital transformation efforts. The proposed framework addresses existing gaps in current IS governance models, offering a solution to common challenges such as inadequate governance structures, resource constraints, and misalignment between IT and business strategies. The framework was developed through a mixed-method approach, including conceptual framework development, expert consensus via the Delphi method, and organizational validation studies. Key findings reveal that the framework improves transparency in decision-making, enhances accountability for IT decisions, and ensures better alignment between IT strategies and organizational objectives. By embedding agile leadership and data-driven decision-making principles, the framework enables organizations to respond effectively to the fast-changing dynamics of digital transformation. This study also compares the proposed framework to existing models such as COBIT and ITIL, highlighting its unique features, including its adaptability to the fluid nature of digital transformation. The framework's strengths include its comprehensiveness and flexibility, though its application may face challenges in organizations with limited digital maturity or rigid governance structures. Future research directions include exploring the integration of emerging technologies into the framework and its applicability across different organizational contexts.

**Keywords:** Digital transformation; IS governance; Organizational decision-making; Framework development; Stakeholder collaboration.

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## 1. Introduction

In the contemporary landscape, digital transformation has become a critical initiative for organizations striving to remain competitive and relevant. As technological advancements reshape industries, the importance of adapting to these changes through digital transformation cannot be overstated. However, these initiatives often encounter significant obstacles, particularly in the realm of Information Systems (IS) governance. Ineffective IS governance poses a considerable challenge to strategic decision-making, which can lead to suboptimal outcomes or even failure in digital transformation efforts [1], [2]. This issue is particularly prevalent in organizations with limited experience in digital transformation, as they struggle to acquire the necessary competencies and manage the complexities of the transformation process [3].

A key issue in these challenges is the lack of a comprehensive and robust IS governance framework. Such a framework is vital for addressing the multifaceted difficulties organizations face, including aligning IT strategies with business objectives, ensuring information security, and adapting to new technological advancements such as Artificial Intelligence (AI) and blockchain [4], [5]. Furthermore, the rapid evolution of digital technologies introduces new governance concerns, such as data security, privacy, and the integration of emerging technologies, which need to be effectively managed to ensure the success of digital transformation efforts [6], [7].

Organizations are in urgent need of a comprehensive Information Systems (IS) governance framework that supports strategic decision-making and ensures the alignment of digital transformation initiatives with broader business goals. The development of such a framework is critical for organizations aiming to successfully navigate digital transformation, as it provides a structured approach to managing complex IS challenges and aligning IT strategies with organizational priorities [8], [9].

A key element of this framework is its ability to enhance structural, operational, and relational capacities within the organization. Effective IS governance should improve an organization's absorptive capacity, allowing it to acquire, integrate, transform, and utilize knowledge more efficiently. This capability is crucial for organizations as they seek to adapt and thrive in the fast-paced and ever-changing digital landscape [7]. Without such a capacity, organizations may struggle to implement new technologies or manage complex digital transformation efforts.

Another significant challenge is the alignment of business and IT strategies. Persistent misalignment between business objectives and IT capabilities remains one of the primary barriers to successful digital transformation. A well-designed governance framework must facilitate better alignment, ensuring that IT initiatives directly support and contribute to the organization's overarching business goals. This alignment is crucial for maximizing the value and effectiveness of digital transformation efforts [2].

As organizations increasingly rely on digital technologies, security and privacy concerns also intensify. The growing volume of data, the integration of new technologies like AI and blockchain, and the expanded use of digital platforms necessitate robust security measures to protect sensitive information. An effective IS governance framework must integrate comprehensive security protocols to safeguard against potential breaches, cyber threats, and privacy violations, ensuring that digital transformation initiatives do not expose organizations to unnecessary risks [1], [4].

In addition, user-centered design and interoperability are essential aspects of any digital transformation effort. Digital systems must be designed to meet the specific needs of users while ensuring that they can seamlessly interact with other systems and platforms. This approach not only enhances service quality but also improves user satisfaction, which is a key driver of successful digital transformation [5].

Finally, organizational learning and adaptation must be embedded in IS governance. Digital transformation is a dynamic and ongoing process, and IS governance should be viewed as a continual learning process. The accumulated knowledge and experience from previous decisions should inform future strategic actions, allowing organizations to adapt to new challenges and opportunities as they arise [7]. This ability to learn and adapt ensures that governance remains effective in an ever-changing digital environment.

The purpose of this study is to develop an Information Systems (IS) governance framework that enhances the quality of decision-making during digital transformation initiatives. The goal is to address the gap in current IS governance models by aligning IT decision-making with organizational objectives, ensuring that digital transformation processes contribute to organizational success. As organizations increasingly turn to digital transformation to drive innovation and growth, effective governance becomes critical to guide IT investments and decision-making to achieve these goals [9].

Digital transformation is a structured process that leverages emerging technologies to foster organizational growth, innovation, and competitiveness. However, the success of digital transformation efforts heavily depends on the ability to effectively govern and align IT initiatives with organizational goals. Existing IS governance frameworks often fail to address the complexities of digital transformation, such as the integration of new technologies and alignment with business objectives. This study is significant as it seeks to fill the gap in current IS governance models by providing a framework that ensures that IT decision-making is closely aligned with organizational goals, thereby enhancing the overall effectiveness of digital transformation initiatives. Through the development of this framework, the study aims to

improve organizational capabilities and increase the chances of successful digital transformation [10].

The development of an effective IS governance framework requires understanding various concepts and frameworks that support digital transformation efforts. One such framework is the Integrated Digital Transformation System Framework (IDTSF), which helps organizations streamline operations and meet user needs efficiently. This framework emphasizes the importance of cohesive governance structures to support digital transformation [11]. The IDTSF aims to avoid common failures in digital transformation initiatives, ensuring that organizations can achieve their desired outcomes.

Another critical aspect in the literature is the role of IT alignment and organizational factors in successful digital transformation. Research shows that successful digital transformation in public organizations is positively associated with IT alignment, which is influenced by factors such as organizational agility, structure, culture, leadership skills, and stakeholder relationships [9], [12]. This alignment is essential for ensuring that digital initiatives are in sync with the broader organizational goals, enhancing the success of the transformation process.

Moreover, Portfolio Management in IT investments plays a crucial role in aligning IT resources with organizational goals. It optimizes resource allocation, mitigates risks, and ensures that IT investments contribute to achieving digital transformation objectives [13]. Effective IT Portfolio Management (ITPM) helps organizations evaluate their IT investments, ensuring that they are strategically aligned with the overall business strategy.

The concept of digital maturity is also important in the context of governance. A three-tiered governance model, based on digital maturity levels (beginner, intermediate, advanced), helps organizations select the appropriate governance mechanisms for managing their digital transformation efforts. As organizations advance in digital maturity, governance mechanisms become less centralized and involve multiple units across the organization to manage digital transformation effectively [14].

Finally, a comprehensive approach that integrates technological, organizational, and environmental factors is crucial for sustainable digital transformation. Aligning digital initiatives with strategic objectives and organizational culture ensures long-term efficiency and adaptability, allowing organizations to thrive in a competitive digital landscape [15].

## 2. Literature Review

### Current Challenges in Digital Transformation

Organizations pursuing digital transformation face numerous challenges that can significantly hinder their progress and overall success. One of the primary challenges is inadequate IS governance. Many organizations lack effective governance frameworks, which leads to unclear strategies, insufficient stakeholder involvement, ineffective risk management, and difficulties in integrating new technologies [16], [17]. This lack of a clear governance framework is particularly problematic in the digital transformation context, where the integration of new technologies requires careful management and alignment with organizational objectives.

Another major challenge is resource constraints, such as limited time, budget, and human resources. Many organizations embarking on digital transformation initiatives struggle with inadequate digital skills, making it difficult to fully capitalize on technological advancements [18]. Moreover, organizations face cybersecurity threats that pose significant risks to their digital transformation initiatives. Cyberattacks, data breaches, and other security challenges can derail projects and harm the organization's reputation, making it essential to integrate strong security protocols into the transformation process [4].

Cultural and organizational issues also play a significant role in the success or failure of digital transformation efforts. Differences in vision and organizational culture often create resistance to change, making it difficult to implement new technologies and processes [19]. Furthermore, organizations must contend with technological challenges, including the integration of new technologies with legacy systems and the effective use of cloud computing [5]. These challenges require careful planning and robust governance to ensure that transformation efforts proceed smoothly and align with the organization's long-term goals.

### Importance of Information Systems Governance

Effective Information Systems Governance (ISG) is crucial for successful digital transformation. Various IS governance frameworks have been proposed to guide organizations in

managing the complex processes of digital transformation, but many of these models have limitations in the context of rapid technological change. One well-established framework is COBIT, which helps organizations align their IS processes with business goals, providing structure and oversight [17]. While COBIT offers valuable guidance, it has been criticized for not adequately addressing the dynamic nature of digital transformation and the fast-paced technological changes organizations face today [20].

Another important model is the Absorptive Capacity Model, which focuses on enhancing an organization's ability to acquire, integrate, transform, and utilize knowledge effectively. This model has been particularly relevant in the higher education sector, where continuous learning and adaptation are critical to digital transformation [7]. However, while the absorptive capacity model is beneficial in fostering knowledge integration, it does not address the governance structures needed to oversee the implementation of digital transformation strategies.

The System of Systems Engineering approach is another IS governance framework that aims to understand the interactive behaviors of various systems involved in digital transformation. This model has been successfully applied in large government agencies, where the complexity of managing multiple interconnected systems requires an integrated governance structure [5]. Despite its strengths, this approach is often too complex and may not be suitable for smaller organizations or those with limited resources.

Finally, Holistic Information Governance emphasizes the importance of a comprehensive approach to information governance that integrates technological, organizational, and environmental factors. This approach is vital for leveraging new technologies while preserving critical information for decision-making and accountability [21]. However, the lack of standardization in this model makes it difficult for organizations to adopt it consistently, particularly across different industries [22].

### Decision-Making in Digital Transformation

Effective decision-making is critical to the success of digital transformation initiatives. As organizations transition to digital-first strategies, the quality and speed of decision-making directly influence the outcomes of these efforts. Successful digital transformation requires well-informed decisions that align with both short-term objectives and long-term organizational goals. Several factors contribute to effective decision-making, such as top management support, stakeholder collaboration, and data and digital literacy [23].

Top management support is crucial during the early stages of digital transformation, as it sets the direction for resource allocation, prioritization, and overall strategic objectives. Without strong leadership from top management, digital transformation initiatives are likely to lack clarity and direction [8]. Furthermore, stakeholder collaboration is essential throughout the digital transformation process to ensure that various perspectives are considered, and diverse teams are aligned with the transformation vision [24].

The importance of data and digital literacy cannot be overstated, as decision-making in the context of digital transformation must be data-driven. A strong data culture within an organization enables decision-makers to rely on insights derived from accurate and timely data rather than gut feelings or anecdotal evidence [25]. Moreover, agile leadership, characterized by quick decision loops and ongoing participation, supports continuous engagement and helps organizations stay adaptable and responsive to changes, making it a crucial leadership style for driving successful digital transformation [26].

Another critical element in effective decision-making is ensuring a balanced degree of digital transformation at various organizational levels. While extensive transformation at the execution level can lead to inefficiencies and performance declines, an appropriate degree of transformation at the decision-making level can significantly enhance enterprise performance [24]. Striking the right balance between innovation and stability is key to ensuring that digital transformation efforts are sustainable and yield long term success.

### Existing Frameworks and Theories

Several frameworks have been developed to guide organizations in managing their digital transformation efforts and aligning IT strategies with business goals. These frameworks provide structured approaches to decision-making and governance, ensuring that digital transformation initiatives are effectively managed.

One of the most widely used frameworks is COBIT 2019, which serves as a comprehensive IT governance framework designed to align IT processes with organizational objectives. COBIT emphasizes the importance of enterprise goals, alignment objectives, and governance and management objectives. By providing guidelines for IT governance and management, COBIT helps organizations integrate digital literacy and enhance decision-making at the governance level, making it a valuable tool for driving digital transformation [8], [27].

ITIL v4 is another key framework that integrates IT service management with business objectives. ITIL supports digital transformation by offering a holistic approach to managing the lifecycle of IT services, from strategy to continual improvement. Its flexibility allows it to align with Agile and DevOps principles, making it a suitable framework for organizations that require a fast-paced, iterative approach to digital transformation [28]. ITIL v4 helps organizations manage digital services in a way that enhances service delivery, which is crucial for maintaining customer satisfaction during digital transformation.

The Integrated Methodological Framework for Digital Transformation Strategy (IMFDS) combines elements of IT governance such as business strategic planning, IT strategic planning, and IT investment decisions. IMFDS offers a structured approach to formulating, implementing, and monitoring digital transformation strategies, making it an important tool for organizations looking to formalize and guide their transformation efforts [29]. By providing a clear methodology, IMFDS helps organizations align their digital transformation strategies with business objectives and IT capabilities.

In addition to these frameworks, organizations may also benefit from adopting a holistic information governance approach. This approach integrates technological, organizational, and environmental factors to support sustainable digital transformation. By considering all aspects of governance, this comprehensive approach ensures that digital transformation efforts are not only technologically viable but also aligned with the organization's strategic and cultural objectives [21].

**Information Systems Governance Framework for Supporting Organizational Decision Making in Digital Transformation Initiatives**

The digital transformation of organizations has become a significant focus in recent years, with decision-making frameworks playing a crucial role in guiding these transformations. Effective governance of information systems is integral to supporting organizational decision-making in such initiatives, ensuring alignment between technology and business goals. Danang et al., (2024) conducted a systematic literature review on the application of blockchain technology in enhancing server security, which contributes to organizational decision-making frameworks in securing digital infrastructure. Their research focuses on mitigating ransomware and malware attacks, which are critical considerations in digital transformation processes. Blockchain's potential to secure sensitive organizational data aligns with the need for robust governance structures that ensure the integrity and security of digital platforms Danang et al., (2024).

Furthermore, the integration of innovative technologies within organizational systems has been explored in other contexts, such as language learning. Englishtina et al., (2024) introduced the SITENAR CERYA framework, which merges technology with cultural narratives, a concept that can be adapted to organizational contexts in digital transformation. The framework demonstrates how innovation and technological integration can enhance organizational decision-making, especially in terms of adapting new tools and strategies for effective operation [31]. In terms of operational automation, Umam et al., (2024) examined the design and construction of an automated water distillation system using Arduino technology. While the focus was on technical automation, the principles of systematization and control presented in their work can also apply to organizational decision-making frameworks in the context of digital transformation. Automation, in this sense, contributes to operational efficiency and informed decision-making [32].

On the aspect of organizational security, Muhadi et al., (2024) explored the design of a security system using RFID and PIR sensors based on the Internet of Things (IoT). This system could be integrated into an organizational governance framework, addressing security concerns while supporting decision-making processes in digital transformations. The utilization of IoT devices emphasizes the importance of adopting advanced technologies to secure information assets, thereby reinforcing governance structures [33]. Similarly, Danang,

Setiawan, and Siswanto (2024) studied the application of IoT technology for monitoring water quality in urban river systems. This research highlights how IoT-based monitoring systems can inform decision-making in various organizational sectors, especially those focused on sustainability and resource management in digital transformation [34].

Lastly, Putranti, Retnowati, Sihombing, and Danang (2024) investigated performance assessments through work gamification. Their study emphasizes engagement in organizational activities, which is an essential component of decision-making in digital transformation. Gamification techniques could be incorporated into information systems governance frameworks to boost employee participation and alignment with organizational goals [35] . In conclusion, the integration of innovative technologies, automation, and robust security systems plays a crucial role in shaping the governance of information systems in digital transformations. By adapting the principles found in these studies, organizations can create frameworks that not only enhance decision-making but also ensure the security, efficiency, and engagement of all stakeholders involved.

## 3. Proposed Method

This study uses a mixed-method approach to develop and refine an Information Systems (IS) governance framework for digital transformation, incorporating the Delphi method for expert consensus and organizational validation. The framework development began with a conceptual design based on existing models like COBIT and ITIL, focusing on agile leadership, data-driven decision-making, and stakeholder collaboration. Delphi experts provided feedback in multiple rounds to refine the framework, while its practical applicability was validated in organizations undergoing digital transformation. Data were collected through surveys and interviews, with both qualitative analysis of expert feedback and quantitative analysis of organizational performance metrics, ensuring that the final framework was both theoretically sound and effective in guiding digital transformation efforts.

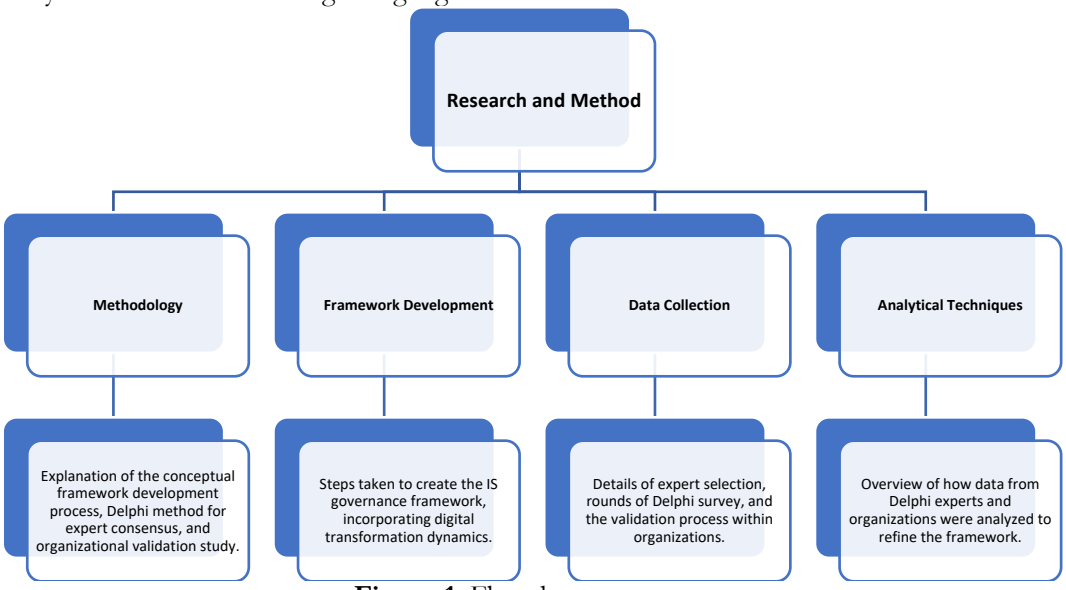


**Figure 1.** Flowchart structure.

### Methodology

This study employs a mixed-method approach, combining conceptual framework development with expert consensus through the Delphi method and organizational validation. The Delphi method involves multiple rounds of surveys with experts to refine a proposed framework by reaching a consensus. This process is particularly useful when addressing complex issues such as Information Systems (IS) governance in digital transformation, where empirical data may be scarce, and expert opinion plays a critical role in shaping the framework.

The conceptual framework development process began with an extensive review of existing IS governance models and digital transformation theories. This review guided the creation of the initial framework, which aimed to integrate key components like agile leadership, data-driven decision-making, and stakeholder collaboration to address the challenges specific

to digital transformation. Once the draft framework was developed, the Delphi method was used to gather expert feedback and refine the model.

Following the Delphi process, the framework was tested in an organizational validation study. The goal of the validation was to assess the framework's applicability in real-world organizations undergoing digital transformation. This step ensured that the framework was not only conceptually sound but also practically useful in guiding digital transformation efforts in diverse organizational contexts.

### Framework Development

The development of the IS governance framework was a systematic process, starting with an initial design phase that integrated elements from existing IS governance models such as COBIT and ITIL. The draft framework focused on ensuring that digital transformation efforts were aligned with organizational goals, while also incorporating dynamic factors like technology integration, agile leadership, and decision-making efficiency. Feedback from Delphi experts was crucial in refining the framework, leading to an iteration that incorporated more specific elements to address digital transformation challenges, such as the need for enhanced data literacy and stakeholder involvement at all levels of decision-making.

### Data Collection

Data collection involved two main sources: Delphi experts and organizational case studies.

- Expert Selection: A panel of experts was selected based on their experience in IS governance, digital transformation, and leadership. These experts included academic researchers, industry professionals, and consultants, all of whom contributed valuable perspectives on the governance framework's design and its potential impact on organizations.
- Delphi Survey: The Delphi process consisted of several rounds. In the first round, experts reviewed the initial framework and provided feedback on its components, identifying areas that needed improvement. This feedback was analyzed to uncover common themes and suggestions. In subsequent rounds, experts reviewed the revised framework and provided further insights until a consensus was reached on its final structure.
- Organizational Validation: Once the framework was refined, it was applied in organizations undergoing digital transformation. These organizations served as test cases to validate the framework's real-world applicability. Data from these organizations were collected through surveys, interviews, and performance metrics before and after implementing the framework. This validation ensured that the framework was not only theoretically sound but also effective in improving decision-making and IS governance during digital transformation.

### Analytical Techniques

The data collected through the Delphi method and organizational validation study were analyzed using both qualitative and quantitative techniques.

- Qualitative Analysis: Feedback from the Delphi experts was analyzed using thematic analysis. Responses were coded to identify recurring themes, such as the importance of agile leadership, data literacy, and stakeholder involvement in successful digital transformation. These themes helped refine the framework and ensure that it addressed the key challenges identified by experts.
- Quantitative Analysis: Data from the organizational validation study included performance metrics related to decision-making efficiency, alignment of IT strategies with business goals, and overall success of digital transformation initiatives. These metrics were compared before and after the implementation of the framework to evaluate its impact on organizational performance. Statistical analysis was used to assess any significant improvements, providing a quantitative measure of the framework's effectiveness.

## 4. Results and Discussion

The developed IS governance framework significantly improves decision-making during digital transformation by enhancing transparency, accountability, and alignment between IT strategies and organizational goals. The framework establishes clear governance structures, ensuring that decisions are transparent and well-documented, which fosters trust and

stakeholder engagement. It also defines roles and responsibilities, improving accountability for IT decisions and making it easier to track progress and assess effectiveness. By ensuring that IT investments align with business objectives, the framework helps organizations optimize their digital transformation efforts, ensuring that technological initiatives support overall strategic goals and drive business success.

## Results

The development of the IS governance framework yielded a comprehensive model designed to guide decision-making processes during digital transformation initiatives. This framework emphasizes key governance principles such as transparency, accountability, and alignment with organizational goals. A major outcome of the framework is the enhancement of decision-making processes by establishing clear governance structures, which ensures that decisions are made systematically, with transparency regarding their rationale and expected outcomes. This transparency is essential for building trust and increasing stakeholder engagement throughout the digital transformation journey.

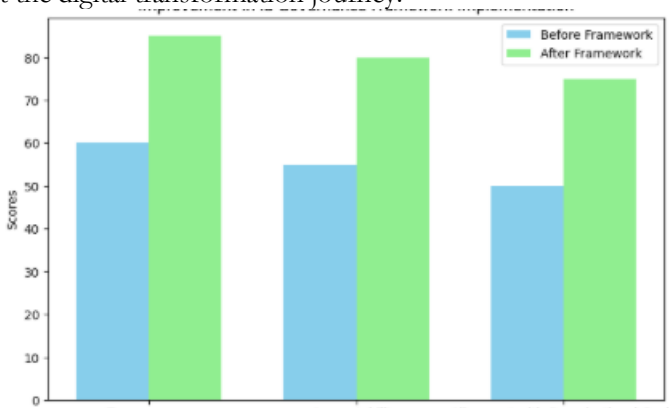


**Figure 2.** Improvement in IS Governance Framework Implementation.

**Table 1.** Improvement in Key Governance Categories Before and After Framework Implementation.

| Category | Score Before Framework | Score After Framework |
|---|---|---|
| Transparency | 60 | 85 |
| Accountability | 55 | 80 |
| Alignment with Organizational Goals | 50 | 75 |

The bar chart and table highlight the significant improvements in key governance categories - Transparency, Accountability, and Alignment with Organizational Goals - after implementing the IS governance framework. Each category saw a 25-point increase, demonstrating the framework's positive impact on enhancing decision-making processes and aligning IT strategies with organizational goals.

Additionally, the framework incorporates mechanisms to improve accountability for IT decisions. By defining roles and responsibilities within the governance structure, the framework ensures that decision-making processes are well-documented, and there is clear ownership of outcomes. This focus on accountability is critical, particularly in digital transformation initiatives where decisions have far-reaching consequences for organizational performance and the successful integration of new technologies. Another significant result is the better alignment between IT strategies and organizational goals, which helps ensure that IT investments are directly linked to business objectives, enhancing the overall effectiveness of digital transformation efforts.

## Discussion

The key findings from the framework development process indicate substantial improvements in transparency, accountability, and alignment between IT strategies and organizational goals. The introduction of clear governance structures has been shown to foster more transparent decision-making processes. As organizations increasingly rely on technology to drive their operations, ensuring transparency in how decisions are made and communicated

is vital for promoting trust among stakeholders and aligning digital initiatives with the broader business strategy. In practice, this transparency allows organizations to evaluate the impact of decisions more effectively and make adjustments when necessary, ensuring a more flexible and adaptable approach to digital transformation.

The enhancement of accountability is another key outcome of the developed framework. Digital transformation often requires organizations to make high-stakes decisions with long-term implications, and the lack of clear accountability can lead to inefficiencies and even failures. By defining roles and responsibilities within the governance structure, the framework facilitates more effective oversight and ensures that there is accountability for the results of IT decisions. This structure helps organizations not only track the progress of digital transformation efforts but also assess their effectiveness in achieving organizational goals, making it easier to pinpoint areas that require improvement or recalibration.

Moreover, the alignment between IT strategies and organizational goals is a critical success factor for digital transformation initiatives. Without proper alignment, digital projects may deviate from the organization's core objectives, leading to wasted resources and missed opportunities. The framework's emphasis on aligning IT decisions with business priorities ensures that digital transformation initiatives are not only technically sound but also strategically relevant. This alignment is particularly crucial in the digital age, where businesses must adapt quickly to changing market conditions and technological advancements. The framework provides organizations with the tools to ensure that IT investments are aligned with the strategic vision of the company, contributing to sustained business success and innovation.

## 5. Comparison

The developed IS governance framework extends traditional IT governance models, such as COBIT and ITIL, by integrating the dynamic and fast-evolving aspects of digital transformation. While COBIT and ITIL offer robust governance structures for managing IT processes, they often focus on standard IT service management and alignment with business goals without fully accounting for the rapid pace of technological change and the need for agility in digital transformation initiatives. COBIT, for example, is primarily concerned with aligning IT strategies with business goals through structured processes and objectives. While this is valuable, it does not fully address the need for continuous adaptation and flexibility in the face of technological advancements. Similarly, ITIL emphasizes the management of IT services, but it does not explicitly incorporate the fluid dynamics of digital transformation, where technologies like AI, machine learning, and blockchain are constantly reshaping the landscape. The developed framework, by contrast, incorporates these dynamic factors, ensuring that governance structures remain flexible and adaptable to the fast-changing nature of digital transformation, making it more relevant for organizations in today's technology-driven environment.

The unique strength of this framework lies in how it integrates the fluid, fast-changing nature of digital transformation into its governance structures. Unlike traditional IT governance models, which often emphasize stability and incremental changes, the developed framework explicitly embeds the need for agility, continuous participation, and rapid decision-making processes. Digital transformation is inherently dynamic, requiring organizations to frequently adjust their strategies in response to new technological developments, market trends, and evolving business needs. This framework recognizes that digital transformation cannot be managed through rigid, linear governance models but requires a more flexible approach that allows for quick decision loops and real-time adaptation. The incorporation of agile leadership within the framework ensures that organizations can respond rapidly to new opportunities and challenges, a feature that is often lacking in more traditional governance structures like COBIT and ITIL.

The strengths of the developed framework lie in its adaptability and comprehensive approach to managing the complexities of digital transformation. By emphasizing transparency, accountability, and alignment between IT strategies and business objectives, it provides organizations with a clear structure for making informed decisions and ensuring that IT investments are directly aligned with organizational goals. The framework's integration of agile leadership and data-driven decision-making further enhances its relevance in today's digital-first environment, where speed, flexibility, and responsiveness are key to success.

However, the framework also has potential limitations, particularly in organizations with limited digital maturity or those that are just beginning their digital transformation journey.

For such organizations, the framework may require significant adaptation to fit their existing governance structures and resources. Additionally, while the framework addresses the need for agility, it may be challenging for some organizations to implement the continuous decision-making loops required by agile leadership, especially in highly hierarchical or traditional organizational cultures. Furthermore, the implementation of the framework may require significant training and upskilling to ensure that all stakeholders possess the necessary digital literacy to engage with the framework effectively. Despite these limitations, the framework provides a much-needed model for organizations looking to manage digital transformation in a way that ensures long-term success and adaptability in the face of technological disruption.

## 6. Conclusions

The proposed IS governance framework significantly enhances decision-making processes during digital transformation initiatives. The main findings of this study highlight improvements in transparency, accountability, and the alignment between IT strategies and organizational goals. By establishing clear governance structures and defining roles and responsibilities, the framework ensures that IT decisions are made in a transparent and accountable manner. Furthermore, the framework successfully aligns IT investments with business objectives, ensuring that digital transformation efforts contribute directly to organizational success. The integration of agile leadership and data-driven decision-making processes also allows organizations to respond rapidly to new opportunities and challenges, making the framework particularly effective in dynamic environments.

This IS governance framework makes a significant contribution to the field of digital transformation by addressing the unique challenges organizations face in aligning IT strategies with business goals. Traditional IS governance models, such as COBIT and ITIL, focus on standardization and alignment but often fail to account for the rapidly changing technological landscape. This framework extends existing models by incorporating the dynamics of digital transformation, emphasizing flexibility, agility, and the need for continuous adaptation. By fostering better transparency and accountability, it improves decision-making and ensures that digital transformation efforts are strategically aligned with organizational objectives. This framework provides organizations with a practical tool for managing the complexities of digital transformation, offering a comprehensive and adaptable governance structure.

Future research could focus on refining IS governance models to further enhance their adaptability in various organizational contexts. Specifically, research could explore how to tailor the framework to organizations at different stages of digital maturity, ensuring its applicability across diverse industries and sectors. Additionally, further exploration is needed to understand how emerging technologies such as artificial intelligence, blockchain, and big data can be integrated into governance frameworks to address new challenges in digital transformation. Further research could also investigate how cultural and organizational factors impact the implementation and effectiveness of digital transformation governance frameworks, particularly in regions or industries with varying levels of technological adoption. By expanding on these areas, future studies can continue to refine IS governance frameworks to ensure their relevance and effectiveness in managing digital transformation initiatives.

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