

Mulyana, Rahmat; Rusu, Lazar; Perjons, Erik

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Key ambidextrous IT governance mechanisms for successful digital transformation: A case study of Bank Rakyat Indonesia (BRI)

Rahmat Mulyana^{*}, Lazar Rusu, Erik Perjons

Department of Computer and Systems Sciences, Stockholm University, Sweden

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ABSTRACT

Many organizations tried to accelerate their digital transformation, but some of them failed, possibly due to poor governance. Previously the influence of ambidextrous IT governance mechanisms on digital transformation and organizational performance were studied. However, there is a need to investigate what are the key ambidextrous IT governance mechanisms that lead to a successful digital transformation and how they are implemented. A case study was conducted at BRI to address the problem. BRI is an incumbent bank that recently won numerous awards. The case study was chosen to investigate one instance in detail to discover contextual understanding that might not have become apparent priorly. The data was collected by semi-structured interviews triangulated with internal documents until data saturation. Subsequently, the collected data underwent thematic analysis. The findings revealed seven key ambidextrous IT governance mechanisms, encompassing board and executive, strategy and architecture, talent and culture, data and information, development and operation, internal and external collaborations, as well as risk and audit. The study also examined how BRI digital transformation dimensions (digital transformation strategy, strategic alignment, digital and IT assets, knowledge and capability, and innovation culture) impacted organizational performance. Lastly, BRI's organizational performance achievements were examined using operational excellence, customer experience, industry presence, and financial return dimensions. This study offers valuable research insights by exploring the key ambidextrous IT governance mechanisms that influence digital transformation and organizational performance. The study also provides the practical implications on how to implement key ambidextrous mechanisms toward a successful digital transformation, including its organizational performance achievements.

1. Introduction

Many incumbent organizations have embarked on digital transformation journeys due to several factors, including the disruption caused by emerging digital technologies, increased competition from born-digital companies such as Fintech, evolving stakeholder digital behavior, and demographic changes (Warner & Wäger, 2019). The COVID-19 pandemic has further accelerated these digital transformation efforts (Soto-Acosta, 2020).

In this article, “digital transformation” is defined as “the fundamental change process enabled by the innovative use of digital technology, strategically leveraging key resources and capabilities to radically improve an entity [e.g., an organization, a business network, an industry, or society] and redefine its value proposition for its stakeholders” (Gong & Ribiere, 2021, p. 12). This is distinct from “digitization,” which is “the fully digital creation of information and data without a physical or analog counterpart,” and

“digitalization,” which refers to “the use and application of digital technology in the context of individuals, organizations, or society at large, as well as the influences induced by this usage” (Frenzel, Muench, Bruckner, & Veit, 2021, p. 8).

However, many digital transformation investments in incumbent organizations have failed, often due to poor governance (Obwegeser, Yokoi, Wade, & Voskes, 2020). Vejseli and Rossmann (2017) argued that IT governance's objectives are to manage risk and optimize resources toward benefit realization. Nevertheless, the effectiveness of traditional IT governance mechanisms in the digital era has been questioned (DeLone, Migliorati, & Vaia, 2018). To address the disruption brought by emerging technologies, previous research from Mulyana, Rusu, and Perjons (2021) identified ambidextrous IT governance mechanisms that influence digital transformation through a systematic literature review. Subsequently, Jewer & Van Der Meulen (2022) further explored digital transformation governance, focusing on processes, structures, and

^{*} Corresponding author.

E-mail addresses: rahmat@dsv.su.se (R. Mulyana), lrusu@dsv.su.se (L. Rusu), perjons@dsv.su.se (E. Perjons).

relational mechanisms that enable business and IT stakeholders to execute their responsibilities in support of digital transformation efforts. This includes clearly assigning decision-making authority for IT and digital-related decisions and fostering collaboration between business and IT functions (Jewer & Van Der Meulen, 2022; Mulyana et al., 2021).

Building upon these insights, Mulyana, Rusu, and Perjons (2022) conducted research validating previous findings within the Indonesian banking and insurance context. They identified more ambidextrous IT governance mechanisms, consisting of both agile-adaptive and traditional mechanisms, that influence digital transformation. Their research highlighted the perceived effectiveness and ease of implementation of these ambidextrous mechanisms, noting that agile-adaptive mechanisms rapidly provide customer-facing solutions through digital innovation, while traditional IT governance mechanisms maintain stability and control over critical business processes and tightly coupled systems (Mulyana et al., 2022).

Agile-adaptive IT governance mechanism is defined as “a method to facilitate quick responses and the ability to deal with complex societal issues involving many stakeholders, diverging interests, and uncertainty” (Janssen & Van Der Voort, 2020, p. 1). Traditional IT governance mechanism is defined as “an integral part of corporate governance, for which the board is accountable, involving the structure (i.e., Chief Information Officer, CIO), processes (i.e., IT strategic planning), and relational mechanisms (i.e., IT leadership) that enable business and IT stakeholders to execute their responsibilities in support of business/IT alignment and the creation and protection of IT business value” (De Haes, Van Grembergen, Anant, & Huygh, 2020, p. 3).”

Initially, the term ambidextrous IT governance was introduced by Andersen, Svejvig, and Heeager (2017) as the art of balancing organizations' exploration and exploitation to handle the simultaneity and tension between innovation and efficiency. This concept aligns with Lee, Sambamurthy, Lim, and Wei (2015) IT ambidexterity, which explains how firms balance exploring new IT resources with exploiting existing ones to enhance organizational agility and performance. In this article, ambidextrous IT governance mechanism is defined as “a synergistic combination of agile-adaptive and traditional mechanisms that balance exploration—emphasizing flexibility, innovation, and adaptability—and exploitation, which prioritizes stability, control, and efficiency, allowing organizations to optimize their digital and IT risks and resources toward value realization.”

While prior studies have provided valuable insights, there remains a need to investigate the key ambidextrous IT governance mechanisms that drive a successful digital transformation journey. “Key” refers to the essential IT governance mechanisms that serve as the foundation for the ambidextrous model. “Successful” refers to performance achievements indicating that the organization has effectively met or exceeded the goals outlined in its digital transformation strategy (Barthel, 2021). Although previous studies identified the top ten perceived important IT governance mechanisms (Mulyana et al., 2022), these were based on expert opinions rather than empirical settings. Moreover, Mulyana, Rusu, and Perjons (2023) measured the influence of ambidextrous IT governance mechanisms on organizational performance, mediated by digital transformation, but have not explain their empirical implementation.

Thus, this study addresses the research problem of lacking empirical evidence on the key ambidextrous IT governance mechanisms that lead to a successful digital transformation and their implementation. The main Research Question (RQ) is: “What are the key ambidextrous IT governance mechanisms in a financial organization in Indonesia that lead to successful digital transformation, and how are they implemented?” This is further examined through two Sub-RQs: 1) “How do the dimensions of digital transformation impact organizational performance?” 2) “What are the performance achievements of digital transformation?”

This research adopts a case study approach, which investigates an instance in detail to uncover contextual understanding not apparent through other research methods (Denscombe, 2021; Yin, 2009). This

approach is particularly suited for exploring ambidextrous IT governance in depth, capturing dynamic interactions and emergent themes that quantitative methods might miss, and providing detailed insights from various organizational levels (Denscombe, 2021).

Indonesia's banking sector is chosen due to its significant digital economy growth as a G20 country (Google, Temasek, and Company, B, 2020). The industry faces intense competition from digital banks and fintech (Van Greuning & Bratanovic, 2020), prompting the Indonesian Financial Services Authority (OJK) to provide a blueprint for banking digital transformation (OJK, 2021a) and emphasize digital acceleration in the Financial Services Sector Master Plan 2021–2025 (OJK, 2021b).

1.1. Case study background: Bank Rakyat Indonesia (BRI)

In this research, Bank Rakyat Indonesia (BRI) was selected as the case study due to its exemplary digital transformation journey. Gartner (2020) illustrated BRI's success in embracing customer-centricity through digital transformation. Moreover, Supari and Anton (2022) highlighted BRI's pivotal role in enhancing the resilience of Indonesian Micro, Small, and Medium Enterprises (MSMEs) during the COVID-19 pandemic by providing training, infrastructure, and digital ecosystem collaboration driven by digital transformation. Additionally, Rosengard (2022) recognized BRI's significant contribution to Indonesia's financial inclusion.

BRI's digital transformation achievements have garnered numerous awards in 2021, with a foundational element being its implementation of ambidextrous IT governance mechanisms to steer their digital transformation journey (BRI, 2022). As the oldest and largest Indonesian

Table 1
BRI Profile, source: BRI (2021); (BRI, 2022).

Criteria	Descriptions
Founded	16 December 1895
Vision	The Most Valuable Banking Group in Southeast Asia and Champion of Financial Inclusion in 2025
Business Segment	Micro, Retail, Corporate, Treasury & Global Services, Subsidiaries
Main Products	Savings & Loan Products, Banking Services
Market Capitalization	IDR 621.75 trillion (20.88% increase YoY)
Consolidated Assets	IDR 1678.10 trillion (growing 4.23% YoY), Indonesia's largest bank in terms of assets (2022)
Credit & Financing	IDR 1042.87 trillion (83.86% channeled to the MSME segment)
Group Affiliation	9 Subsidiaries, 5 Associate Companies
Outlets, Channels, Agents & Advisors	9000+ Local (Branches, Sub-branches, Micro Outlets, Cash Offices, Payment Points); 6 Overseas; 220,000 E-Channels (ATMs, CRMs, EDCs); 500,000 BRILinks Agents; 37,000 Financial Advisors. BRI also had Indonesia's most extensive distribution network at the end of 2021. Its largest network is supported by BRISat, a satellite with 45 transponders since June 2016.
Employee Size	Total 82,718 (1.85% Masters, 83.98 Bachelors, 12.68% Diplomas, 1.47% Others), IT 1182 (64.38% FTE, 35.62% OS), IT ratio 1.42%
Digital Transformation Strategy & Theme	BRIVOLUTION 1.0 (2016), BRIVOLUTION 2.0 (2021) Frameworks: Digitizing Core, Digital Ecosystems, New Digital Proposition Theme: Go Smaller, Go Shorter, Go Faster
Awards	150+ international and national awards in 2021, e.g., Special Award for Digital Resiliency and CIO/ CDO of the Year 2021 from IDC, The World's Best Banks Rank 12th 2021 from Forbes, Top 10 Strongest Brands 2021 Rank 1st from Brand Finance, Best Fintech for Digital Customer Experience (Ceria) 2021 from The Digital Banker, Best of the Best Microfinance Award 2021 from Cambridge IFA, Indonesia's Best Bank for SME's 2021 from Asiamoney, Indonesia Most Trusted Companies 2021 from Good Corporate Governance Perception Index.

bank, as detailed in Table 1, BRI represents an incumbent conventional bank disrupted by financial technology competitors. In response to these disruptions, BRI established a digital technology-based business ecosystem in 2020, leveraging pandemic challenges for growth. This success can be traced back to the BRIVOLUTION 1.0 strategy, initiated in 2016 and carried through to 2020. The subsequent BRIVOLUTION 2.0 strategy has focused on digital and cultural transformation, with the goal of becoming Southeast Asia's most valuable banking group and a champion of financial inclusion (BRI, 2021).

This case study of BRI offers valuable insights into how an established financial institution can navigate and thrive amidst the challenges posed by digital transformation and the rise of fintech competitors. By analyzing BRI's strategies, particularly their use of ambidextrous IT governance mechanisms, we aim to uncover the critical factors that contribute to successful digital transformation in the banking sector.

2. Theoretical Foundation

In this section, we establish the theoretical foundation, as depicted in Fig. 1. This foundational framework serves as a comprehensive guide for analyzing the intricate interplay between key IT governance mechanisms and their impact on organizational performance throughout the digital transformation process.

2.1. Ambidextrous IT governance: Balancing exploration and exploitation

As shown in the left area of Fig. 1, we can see the ambidextrous IT governance construct as the transformation antecedents. The ambidexterity theory highlights the imperative of balancing exploration and exploitation for organizational success (March, 1991). Exploration allows for discovering new knowledge, technologies, and markets, while exploitation focuses on refining existing competencies and leveraging current resources for efficiency and stability (Raisch, Birkinshaw, Probst, & Tushman, 2009). The evolution of this theory into IT ambidexterity underscores its relevance in the context of advancing technologies (Horlach, Drews, Schirmer, & Boehmann, 2017; Lee et al., 2015). This involves managing two modes. Mode 1 for traditional, stable, and well-established systems and processes. While Mode 2 is for more agile, innovative, and experimental initiatives (Haffke, Kalgovas, & Benlian, 2017; Horlach et al., 2017). This bimodal or ambidextrous approach enables organizations to balance the need for stability and innovation in their IT strategies (Haffke et al., 2017; Leonhardt, Haffke, Kranz, & Benlian, 2017). The disruptive nature of digital technology further accentuates the need for organizational ambidexterity, positioning it as a critical lens through which to understand and navigate the

complexities of the digital transformation journey (Fitzgerald, Kruschwitz, Bonnet, & Welch, 2013; Spremic, 2017). The disruption caused by digital technology has been accelerated by the unprecedented events of the COVID-19 pandemic (Elgazzar, El-Shahawy, & Senousy, 2022; Soto-Acosta, 2020), prompting rapid changes in digital behavior (Vial, 2019). This swift digital transformation has intensified competition, especially from born-digital competitors (Elgazzar et al., 2022; Warner & Wäger, 2019), thereby compelling incumbent organizations to accelerate their digital transformation journeys. However, despite the urgency, many of these investments have faced setbacks, often attributed to inadequate governance practices (Davenport & Westerman, 2018; Obwegeser et al., 2020).

Tricker (1984)'s corporate governance theory emphasized that if management is concerned with operating a business, governance is concerned with ensuring that the operation is successful. According to the corporate governance theory, IT governance emerges as a crucial component (Rubino & Vitolla, 2014; Van Greuning & Bratanovic, 2020). As part of corporate governance, traditional IT governance mechanisms encompasses three types of capabilities: structures, processes, and relational (De Haes and Van Grembergen, 2005; Peterson, 2004). Accordingly, IT governance structure is "the structural (formal) devices and mechanisms for connecting and enabling horizontal, or liaison, contacts between business and IT management (decision-making) functions," e.g., CIO, IT Steering Committee (Peterson, 2004, pp. 14–15). IT governance processes is "the formalization of strategic IT decision-making, monitoring procedures, and performance," e.g., IT strategy management and IT solution development (Peterson, 2004, pp. 14–15). Furthermore, IT governance relational mechanism is "the active participation of, and collaborative relationship between corporate executives, IT management, and business management," e.g., IT leadership and cross-training (Peterson, 2004, pp. 14–15). These three mechanisms extend beyond traditional structures and processes for allocating formal IT decision-making authority to include horizontal relational mechanisms that facilitate integrated decision-making across business and IT groups (De Haes and Van Grembergen, 2005).

Similarly, microfoundation theory refers to the underlying individual-level elements, including processes, structures, and interactions, that contribute to the development and enhancement of an organization's routines and capabilities (Felin, Foss, Heimeriks, & Madsen, 2012). These foundational elements shape how an organization functions and competes, directly influencing its ability to achieve superior organizational performance (Barney & Felin, 2013). The microfoundation theory seeks to understand how individual actions and interactions within and across different parts of an organization improve its overall routines and capabilities, thereby offering competitive

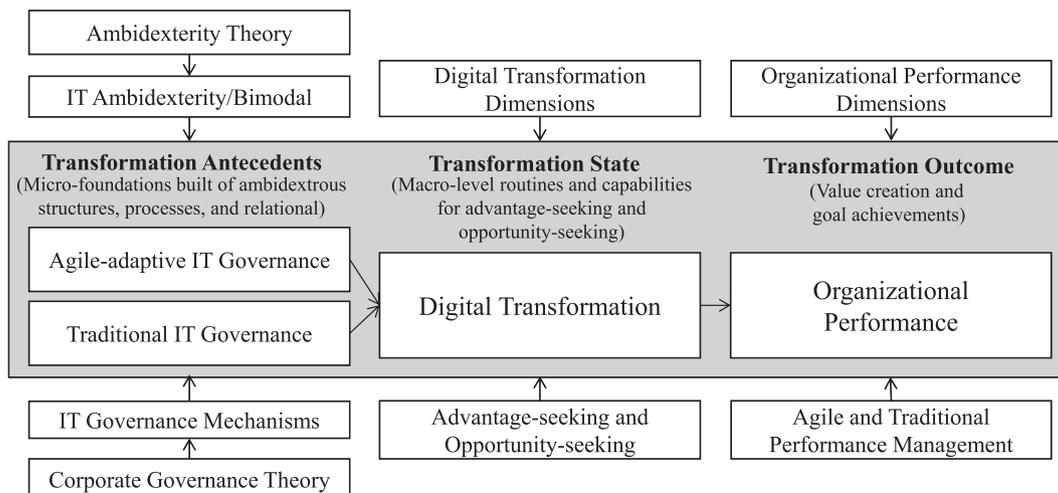


Fig. 1. Theoretical Foundation.

advantages. This approach moves beyond the macro-level focus on institutional structures and processes, emphasizing the importance of each individual and their role in the organization's success (Barney & Felin, 2013; Eggers & Kaplan, 2013; Joshi, Benitez, Huygh, Ruiz, & De Haes, 2022).

The previously mentioned traditional IT governance has effectively optimized risk and resources for value realization, contributing to organizational performance (Vejseli & Rossmann, 2017). However, the changing dynamics of the digital era have prompted questions about the efficacy of traditional IT governance mechanisms (DeLone et al., 2018). The demand to effectively manage the agility inherent in digital innovation has led to adopting agile-adaptive IT governance (Jöhnk, Oesterle, Winkler, Nørbjerg, & Urbach, 2020; Vejseli & Rossmann, 2018); (Mulyana et al., 2021, 2022, 2023). Positioned as an exploratory initiative, agile-adaptive IT governance aims to facilitate rapid responses and address intricate societal challenges involving multiple stakeholders, diverse interests, and uncertainty through digital innovation (Gregory, Keil, Muntermann, & Mähring, 2015; Janssen & Van Der Voort, 2020). This strategic approach recognizes the constantly evolving digital transformation landscape, underscoring the need for an ambidextrous IT governance framework to manage the transformation complexity. This approach is designed to navigate the dynamic ambidexterity—embracing exploration through flexibility, innovation, and adaptability, alongside exploitation through stability, control, and efficiency (Jöhnk, Ollig, Rövekamp, & Oesterle, 2022; Mulyana et al., 2021, 2022, 2023).

Moreover, Mulyana et al. (2023) provides examples of what agile-adaptive IT governance mechanisms may resemble. Firstly, the agile-adaptive structures can be Chief Digital Officer (CDO), Transformation Committee, product leadership (manager, owner), specialized business resources (domain expert), technical resources (engineer, scrum master, architect, user experience, cybersecurity, etc. that perform the processes related to digital initiatives. Secondly, Mulyana et al. (2023) also explain that agile-adaptive processes consist of two levels: the Board-level governance, which perform the evaluation, direction, and monitoring of resource, risk, and value, and the Executive-level governance, which focuses on planning, building, running, and monitoring the digital initiatives. Thirdly, examples of agile-adaptive relational mechanisms include leadership (transformational, entrepreneurial), behavior (digital, risk-taking), and collaborations (cross-functional, external) (Mulyana et al., 2023).

By integrating these theoretical frameworks, we see that the ambidextrous IT governance approach is a response to the limitations of traditional corporate governance in the digital age. It offers a more nuanced and dynamic framework that is better suited to handle the rapid changes and uncertainties inherent in digital transformation. This comprehensive governance model enables organizations to effectively balance the dual imperatives of exploration and exploitation, thus ensuring sustained innovation and efficiency in a disruptive digital landscape. This synthesis not only deepens our understanding of IT governance in the context of digital transformation but also highlights its critical role in navigating and succeeding in the digital age.

2.2. Performing digital transformation: Dimensions for success

The next part of the foundational framework is the digital transformation construct in the transformation state central area, as shown in Fig. 1. Digital transformation signifies a profound redefinition of an organization's value proposition, extending far beyond a mere technological shift (Sebastian et al., 2017). The advent of digital technology in born-digital companies has given rise to entirely new business models that are unsettling incumbent organizations (Warner & Wäger, 2019). In the digital era, companies must adeptly cycle through stages of competitive advantage, emphasizing the capacity to cultivate and manage a pipeline of initiatives, engage in continuous reconfiguration, maintain alertness, adopt an external focus, and be prepared to act

swiftly to avoid obsolescence (McGrath, 2010). This need for agility and responsiveness highlights the inadequacy of traditional governance models in managing the dynamic nature of digital transformation.

Digital transformation, as a macro-level organizational state, comprises routines and capabilities that embody competitive advantages toward organizational performance (Felin et al., 2012). These routines and capabilities are shaped by ambidextrous IT governance mechanisms, which ensure that individual actions and interactions align with broader organizational goals and capabilities (Eggers & Kaplan, 2013). This alignment is crucial for fostering the strategic entrepreneurship needed for successful digital transformation, encompassing both advantage-seeking and opportunity-seeking routines and capabilities (Hiitt, Ireland, Camp, & Sexton, 2001; Utoyo, Fontana, & Satrya, 2020).

The first dimension of digital transformation is the digital transformation strategy, a guiding framework to coordinate, prioritize, and implement transformation efforts to achieve the desired future digitally transformed state (Gurbaxani & Dunkle, 2019; Matt, Hess, & Benlian, 2015; Tsou & Chen, 2021). This strategic approach is vital for aligning digital initiatives with the organization's overarching goals, thereby ensuring coherence and direction in transformation efforts. Following this is strategic alignment, which reflects the organization's capability to align digital transformation expenditures with its strategy, ensuring that investments in digital technologies are purposeful and supportive of strategic objectives (Gurbaxani & Dunkle, 2019; Ping-Ju, & S., Straub, D. W., & Liang, T.-P., 2015).

Next is the digital & IT assets dimension, which quantifies how much an organization utilizes new digital technology, reflecting the extent of its technological advancement and readiness (Gurbaxani & Dunkle, 2019; Spremic, 2017). Subsequently, the digital & IT knowledge and capability dimension assesses an organization's digital knowledge and proficiency in digital competencies, underscoring the importance of skill development and expertise in navigating digital landscapes (Gurbaxani & Dunkle, 2019; Khin & Ho, 2019). Lastly, the digital & IT innovation culture dimension explores the degree to which innovative organizational behavior is ingrained, highlighting the cultural aspects that support and drive innovation (Gurbaxani & Dunkle, 2019; Kiefer, Van Dinther, & Spitzmüller, 2021).

These dimensions collectively play a crucial role in shaping an organization's ability to thrive amid transformative disruptions (Gurbaxani & Dunkle, 2019). The dual focus on digital (exploration) and IT (exploitation) represents the ambidextrous existence of technology roles within a digital transformation, balancing the need for innovation with the need for efficiency and stability.

Critically analyzing these theories, the acceleration of digital transformation due to COVID-19 has posed significant challenges to existing governance frameworks. The rapid digital shift demanded unprecedented agility and responsiveness, exposing the limitations of traditional IT governance models (Elgazzar et al., 2022; Soto-Acosta, 2020). This period of intense disruption has emphasized the need for agile-adaptive IT governance, capable of managing the dynamic ambidexterity required for both exploration and exploitation in a volatile environment.

In synthesizing these ideas, it becomes evident that a coherent digital transformation strategy necessitates an integrated approach, aligning micro-level ambidextrous IT governance mechanisms with macro-level organizational objectives of digital transformation. This alignment ensures that digital transformation initiatives are not only strategically directed but also operationally effective, fostering a holistic and sustainable transformation journey. The interplay between strategic alignment, digital assets, knowledge and capability, and innovation culture forms the backbone of a resilient and adaptive organization, capable of navigating and thriving in the rapidly evolving digital landscape.

2.3. Measuring success: Organizational performance dimensions

As the transformation outcome displayed in the right area of Fig. 1,

organizational performance is the anticipated positive impact of an organization's use of digital technology (Vial, 2019). The role of micro-foundations in this process ensures that individual and collective actions within the organization effectively contribute to these transformation outcomes, directly influencing capabilities, routines, and strategic decisions that drive successful digital transformation and enhanced organizational performance (Eggers & Kaplan, 2013). Moreover, digital transformation can potentially create a broad spectrum of internal and external performance impacts (Vial, 2019).

The dimensions of organizational performance encompass various facets, each critical in assessing the effectiveness of digital transformation efforts. Operational excellence is paramount, gauging an organization's proficiency in executing business operations efficiently, effectively, and consistently (Ping-Ju, & S., Straub, D. W., & Liang, T.-P., 2015; Vial, 2019). Following this, the customer experience dimension evaluates the organization's capability to meet and surpass customer expectations by delivering high-quality products or services and exceptional customer service (Vejseli, Rossman, & Garidis, 2022; Zhu, Dai, & Wan, 2022).

The third dimension, industry presence, is crucial for evaluating an organization's ability to establish a robust existence and reputation within its industry, country, or regional community (Vial, 2019; Zhu et al., 2022). Lastly, the financial return dimension measures how well the company utilizes its resources to create value and generate a financial return on investment (Ping-Ju, & S., Straub, D. W., & Liang, T.-P., 2015; Vejseli et al., 2022). These dimensions collectively reflect the aggregate performance relative to competition, providing a comprehensive assessment of the organization's success in leveraging digital transformation for strategic advantage.

2.4. Research conceptual framework

Building upon the insights gained from the reviewed literature in Sections 2.1, 2.2, and 2.3, we present the research conceptual framework depicted in Fig. 2. The framework delineates a holistic view of the interplay between key ambidextrous IT governance mechanisms, digital transformation, and organizational performance. In the left part, we outline the key ambidextrous IT governance mechanisms, comprising structures, processes, and relational mechanisms, as pivotal drivers influencing the transformation antecedents. This aligns with the discussions on the imperative of balancing exploration and exploitation for organizational success (March, 1991) and the evolving nature of IT governance in the digital age (De Haes and Van Grembergen, 2005; Peterson, 2004). In the center part, digital transformation emerges as the transformation state, reflecting the profound redefinition of an organization's value proposition in response to technological shifts (Sebastian et al., 2017). This section integrates the dimensions of digital transformation strategy, strategic alignment, digital & IT assets, knowledge and capability, and innovation culture, emphasizing their critical roles in fostering competitive advantages amid disruptive changes (Gurbaxani & Dunkle, 2019). Finally, in the right part, organizational performance

serves as the transformation outcome, encompassing dimensions such as operational excellence, customer experience, industry presence, and financial returns (Ping-Ju, & S., Straub, D. W., & Liang, T.-P., 2015; Vial, 2019). By linking these components cohesively, our conceptual framework provides a comprehensive understanding of how ambidextrous IT governance mechanisms shape digital transformation efforts, ultimately impacting organizational performance. This extended framework builds upon previous research (Mulyana et al., 2021, 2022, 2023), offering a refined perspective on navigating the complexities of the digital landscape.

3. Research Methodology

According to Denscombe (2021), a case study research strategy should be open and flexible to grasp the responses from the participants' experiences, be suitable to address the research questions and consider the resources and ethical points of view. Moreover, the case study offers a more in-depth investigation into a field that can produce a comprehensive and coherent understanding of the selected instance in question and provides insights and explanations that could be challenging to obtain using other research strategies (Denscombe, 2021). The research was conducted from June 2022 to July 2023.

As shown in Fig. 3, the research activities consist of organization selection, interviewees selection, data collection, and data analysis, which will be explained further.

The research process is shown in Fig. 3, *First is the Organization Selection*. Purposive sampling was chosen for this research based on Denscombe (2021), due to its ability to select the suitable organization and participants who have specific knowledge and experience relevant to the study of ambidextrous IT governance. BRI was chosen among other organizations because it has had remarkable success on its digital transformation journey and has been acknowledged by many awards (BRI, 2022; Gartner, 2020; Rosengard, 2022; Supari & Anton, 2022). According to BRI Digital Transformation Performance Report, one of its successful foundation platform is the implementation of ambidextrous IT governance (BRI, 2023).

Second – Interviewees Selection. Beyond merely addressing the research questions, purposive sampling also ensures that the sample is rich with information, which is crucial for a nuanced understanding of how these ambidextrous IT governance mechanisms of BRI are implemented and function in practice. This approach is particularly effective because it targets key stakeholders and experts who can provide detailed, context-specific information, thereby enhancing the validity and depth of the findings (Denscombe, 2021).

We have determined the roles of the respondents required to represent the bank in the interviews. Initially, we began with 16 roles based on the “*Three Lines of Defense*” (TLOD) enterprise risk management best practices (Davies & Zhivitskaya, 2018) and data saturation guide (Fusch & Ness, 2015). According to Davies and Zhivitskaya (2018), the three lines of defense structure helps organizations identify, assess, and mitigate risks while ensuring accountability and transparency in

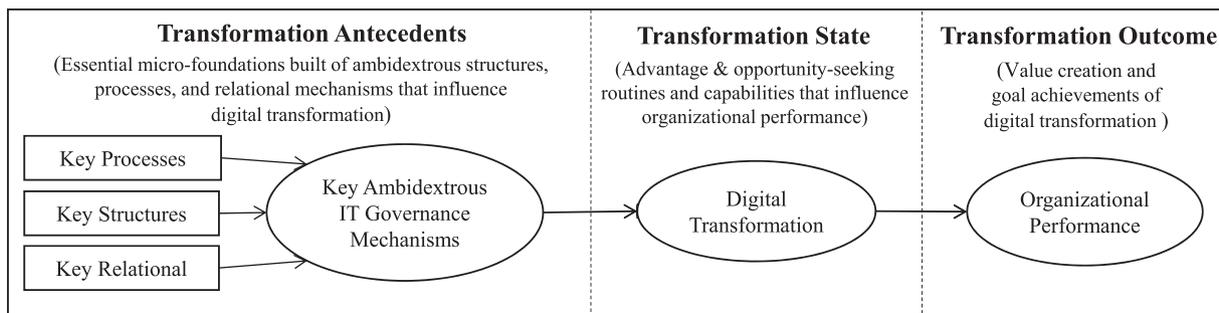


Fig. 2. Research Conceptual Framework

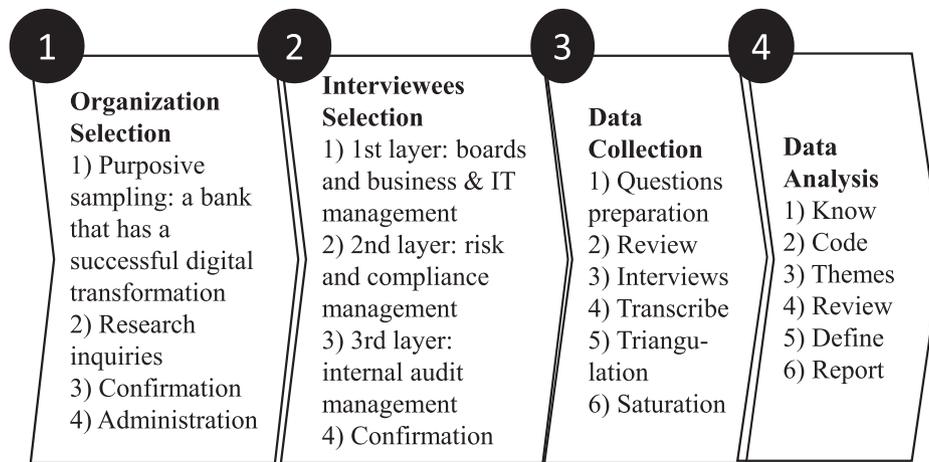


Fig. 3. Research Process.

enterprise risk management as a common Good Corporate Governance practice. The role of the board is represented by interviewee 1, whereas interviewees 2 and 3 embody the roles within executive management. The first line of defense comprises operational units responsible for owning and managing risks on a daily basis, as indicated by the business functions of interviewees 4 through 11 and the digital & IT (DIT) functions of interviewees 12 through 17. Next, the second line comprises risk management and compliance functions responsible for overseeing and supporting the first line, represented by interviewees 18 and 19. Lastly, the third line consists of internal audit and independent assurance functions, which offer objective evaluations of risk management effectiveness, represented by interviewee 20, as shown in Table 2.

Following the ethical considerations from Oliver (2003) and Denscombe (2021), this research has followed the four fundamental good research principles, which are the protection of the participant's interests by ensuring that participation is voluntary and based on informed consent, avoiding deception, operating with scientific integrity, and complying with the laws of the country and internal policy by signing a non-disclosure agreement for sensitive data. High-level executives often possess critical and sensitive information about their organizations, it was guaranteed that their identities and the sensitive data provided were kept confidential. Informed consent was meticulously obtained, clearly explaining the study's purpose, how the data would be used, and the measures taken to protect their privacy. Additionally, any potential

conflicts of interest were managed to establish trust and transparency with the respondents, it was ensured that their contributions were used solely for academic purposes and that findings were reported objectively. These steps helped in addressing the ethical challenges, ensuring that the research adhered to high ethical standards while gaining valuable insights (Denscombe, 2021; Oliver, 2003).

Third – Data Collection. We prepared a list of interview questions as a guidance to gather research data inspired by prior studies on the ambidextrous IT governance mechanisms that influence digital transformation and organizational performance (Mulyana et al., 2021, 2022, 2023). The list consisted of 30 open-ended questions divided into four parts. Part A aimed to understand respondents' profiles. In part B, we identified the key ambidextrous IT governance mechanisms incorporating agile-adaptive and traditional approaches. We explored their influence on BRI's successful digital transformation journey and asked whether they are selected as the most essential (key) IT governance mechanisms. Moving forward to part C, we investigated what are BRI's digital transformation dimensions, and their influence on its organizational performance. Lastly, in Part D, we sought to understand what and how BRI's organizational performance dimensions have been achieved by its digital transformation efforts. The research team and BRI's counterparts evaluated, improved, and validated the instrument.

Afterward, we conducted the semi-structured interviews with all the representatives, as shown in Table 2. Before the interviews, we obtained their consent using an approved form. Interviews were conducted online by the research team, one as the main interviewer, another as a note-taker and reminder, and the last one analyzes the code's similarity. Meetings were recorded for transcription and then translated into English.

Interviews were performed until data saturation was achieved, meaning no new codes emerged, and further coding was impossible (Fusch & Ness, 2015). In achieving data saturation for this research, we conducted multiple rounds of interviews to ensure comprehensive coverage of the topic. To achieve data saturation, we included the boards of commissioner and directors and three layers of interviewees: risk owners from business and Digital & IT, risk management and compliance, and internal audit functions, throughout the data collection and analysis phases, as shown in Table 2.

After completing the first round of interviews, we analyzed the data to identify recurring themes and gaps in information. Subsequently, we conducted additional rounds, refining our questions based on the emerging insights. We reached data saturation after three rounds of interviews, at which point no new significant information was being uncovered. This iterative process ensured that our research was thorough and that the findings were robust and reflective of the participants' perspectives, providing a deep and nuanced understanding of

Table 2 Interviewees' Number, Role, Line of Defense, and Total Duration (minutes).

No	Role	Line	Duration
1.	Board of Commissioner	Board	31
2.	President Director	Bus. Executive	34
3.	Digital & IT Director	DIT Executive	90
4.	Planning, Budgeting & Performance Div.	Bus. 1st Line	43
5.	Micro Business Development Division	Bus. 1st Line	36
6.	Change Management Division	Bus. 1st Line	41
7.	Culture Transformation Division	Bus. 1st Line	44
8.	Procurement & Logistic Operation Division	Bus. 1st Line	36
9.	Project Management Office Division	Bus. 1st Line	37
10.	Human Capital Development Division	Bus. 1st Line	39
11.	Corporate University Division	Bus. 1st Line	36
12.	IT Strategy & Governance Division	DIT 1st Line	87
13.	Application Management & Operation Div.	DIT 1st Line	56
14.	Digital Bank Development & Operation Div.	DIT 1st Line	86
15.	IT Infrastructure & Operation Division	DIT 1st Line	50
16.	Information Security Division	DIT 1st Line	42
17.	Enterprise Data Management Division	DIT 1st Line	37
18.	Compliance Division	2nd Line	35
19.	Digital Risk Division	2nd Line	81
20.	Digital & IT Audit Division	3rd Line	63

Notes: Bus. = Business, DIT = Digital & IT.

ambidextrous IT governance that influence BRI successful digital transformation, including its how they were implemented. Total duration for each interviewee is shown in Table 2.

Lastly, we triangulated the interviews with relevant documents to ensure data validity based on trustworthiness evaluation from Shenton (2004). We employed a rigorous triangulation method to ensure the robustness and reliability of our findings. This involved integrating data from internal and public documents, including interviews, annual report, digital transformation strategy and performance report, IT strategic plan, IT governance maturity assessment, digital transformation maturity, certification, performance reports, to cross-verify and corroborate our results. Subsequently, we meticulously compared and contrasted findings from these various sources, identifying areas of convergence and divergence. By synthesizing insights from different data streams, we were able to attain a more comprehensive understanding of the implemented BRI's ambidextrous IT governance mechanisms, digital transformation, and organizational performance under investigation. The outcome of triangulation was twofold: firstly, it strengthened the validity and credibility of our findings by validating them across multiple data sources, thereby enhancing the overall trustworthiness of our study. Secondly, it enabled us to gain deeper insights into the complexities and nuances of the research topic, uncovering patterns and relationships that might have remained obscured if only one data source had been utilized, as guided by Shenton (2004).

Fourth – Data Analysis. We performed the thematic analysis using Braun and Clarke (2006). This process consists of six steps. First, we reviewed the transcripts. Then, the coding process was carried out to identify the related categories and themes. After that, the theme review process was conducted. Then, the definition and name of each component were given. Afterwards, the relevant coding was selected. An example of thematic analysis activities is shown in Table 3.

As shown in Table 3, according to the English translated transcripts from the Indonesian language interview results, we identified relevant codes that considered as the key ambidextrous IT governance mechanisms that influence BRI's digital transformation, for example: "Digital & IT Executive Governance", "Chief Digital & IT Officer", and "Digital & IT Transformation & Entrepreneurial Leadership". Subsequently, we identified the relevant category for the previously identified codes, namely the key process, structure, and relational ambidextrous mechanisms. Then, finally we identified the relevant theme for each code category.

Table 3
Thematic Analysis Example.

Theme	Category	Code	Transcript
Board & Executive (ITG1)	Key Process (P3)	Digital & IT Executive Governance	Interviewee 12: "We think one of the key <u>structures</u> that play a significant role in the success of our digital transformation is the presence of <u>transformational</u> and <u>entrepreneurial leadership</u> from our <u>executive</u> management, namely the Digital & IT Director, who serves as the <u>Chief Digital & IT Officer</u> of BRI in carrying out the evaluate-direct-monitor <u>process</u> of our good corporate <u>governance in digital and IT.</u> "
	Key Structure (S3)	Chief Digital & IT Officer	
	Key Relational (R1)	Digital & IT Transformational & Entrepreneurial Leadership	

4. Results and discussion

In addressing the main research question, our analysis revealed seven overarching themes of key ambidextrous IT governance mechanisms that significantly influence BRI's successful digital transformation, as illustrated in Fig. 4 (left area). These mechanisms encompass a comprehensive spectrum of organizational processes, structures, and relational dynamics. Specifically, they include the Board and Executive, Strategy and Architecture, Talent and Culture, Data and Information, Development and Operations, Internal and External Collaborations, and Risk and Audit mechanisms. These themes collectively represent fourteen key processes and key structures, alongside four key relational mechanisms, which collectively shape the trajectory of BRI's digital transformation journey. Section 4.1 will delve into a detailed discussion of how these mechanisms impact digital transformation outcomes.

Furthermore, our investigation identified five essential dimensions of digital transformation depicted in Fig. 4 (center area): Digital Transformation Strategy, Strategic Alignment, Digital & IT Assets, Digital & IT Knowledge and Capability, and Digital & IT Culture of Innovation. These dimensions play a pivotal role in shaping BRI's organizational performance, a discussion of which will be presented in Section 4.2.

Lastly, to address the final sub-research question, our analysis delineated four distinct dimensions of BRI's organizational performance, as depicted in Fig. 4 (right area): Operational Excellence, Customer Experience, Industry Presence, and Financial Returns. These dimensions encapsulate the core areas of performance achievements within the organization, which will be comprehensively examined in Section 4.3. Through an in-depth exploration of these dimensions, we aim to provide valuable insights into the multifaceted impact of digital transformation on BRI's overall performance landscape.

Notes: ITG = IT Governance, DT = Digital Transformation, OP=Organizational Performance, P=Process, S=Structures, R = Relational, DIT = Digital & IT.

4.1. Key ambidextrous IT governance mechanisms at BRI leading to successful digital transformation and their implementation

4.1.1. Board and executive mechanisms

As shown in Table 4, the first key ambidextrous mechanism, the Board and Executive, plays a pivotal role in steering BRI's successful digital transformation. By fostering a culture of innovation and digital readiness at the highest levels of leadership, they set the tone for the entire organization. Their commitment to embracing technological advancements enables effective decision-making and resource allocation, ensuring alignment between business goals and digital & IT strategies. Additionally, they encourage collaborative participation and create a supportive environment conducive to change, which is essential for the successful implementation of digital initiatives.

Firstly, interviewee 1, the Board of Commissioners, represents the BRI **Board** that operates within a two-tier board system, comprising the Board of Commissioners as the supervisory board and the Board of Directors as the management board, as commonly practiced by Indonesian companies (Khan, Nosheen, & Ul Haq, 2020). This role performs **Board-level Governance** by evaluating, directing, and monitoring BRI's digital transformation initiatives to optimize resources and risks, realize value, and engage stakeholders. Interviewee 1 also revealed the reason behind BRI's digital transformation journey, stating, "Changed customer behavior should be followed by market response. We need technology innovation to accelerate business model improvements and seize new opportunities."

Moreover, interviewee 2 is the first representative of BRI's management board, the **Chief Executive Officer** (President Director). The CEO performs **Business Executive Governance** by providing leadership and vision for digital transformation initiatives, driving cultural change, and ensuring digital capabilities align with strategic goals. The CEO emphasized, "The rapid innovation in the financial industry has transformed

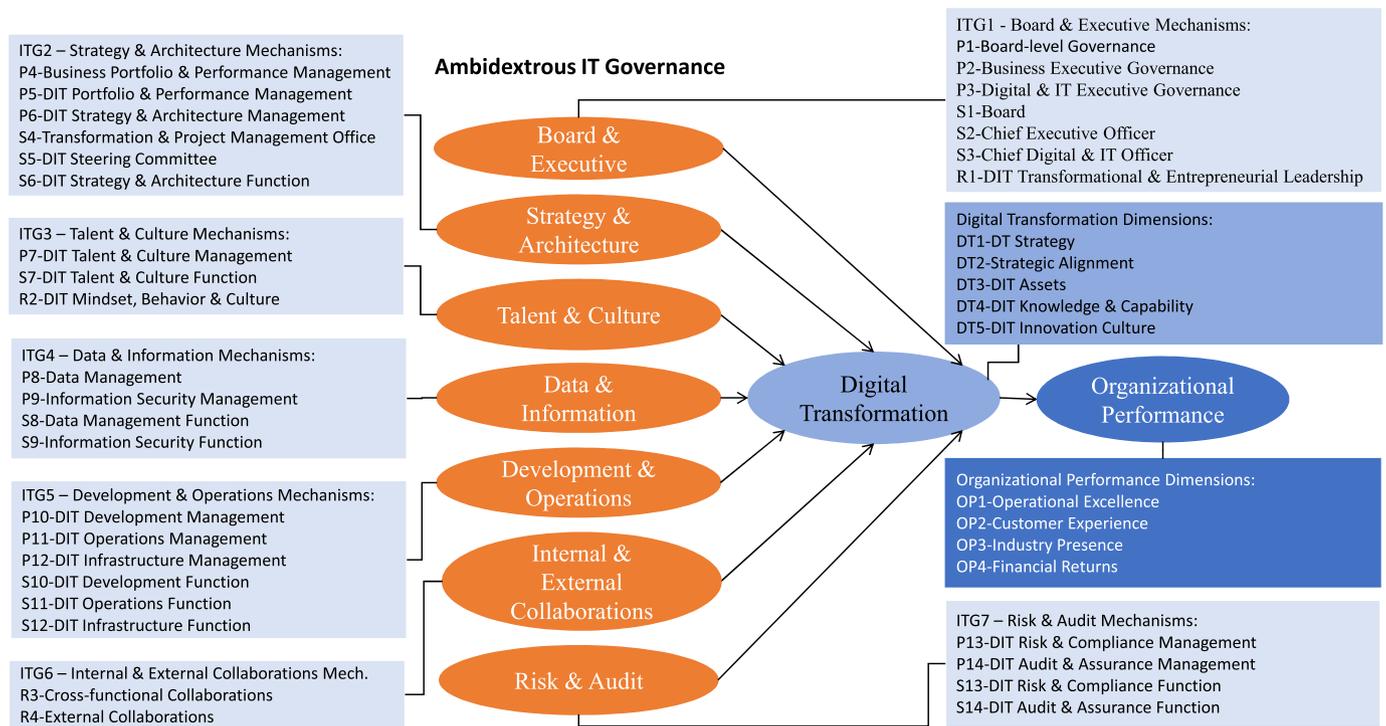


Fig. 4. The Key Ambidextrous IT Governance Mechanisms that Influence BRI's Successful Digital Transformation.

Table 4
Board and Executive Thematic Analysis Result.

Theme: Board and Executive (Key Ambidextrous IT Governance 1)			
Frequency Average: 18.6 out of 20 interviewees			
Cat.	Code	Freq.	Impact on Digital Transformation
P1	Board-level Governance	15	Oversees the evaluation, direction, and monitoring of DT, ensuring resources and risk optimization, value realization, and stakeholder engagement
P2	Business Executive Governance	20	Provides leadership and vision for DT, drives cultural change, and ensures that the organization has the digital capabilities needed to achieve its strategic goals
P3	Digital & IT Executive Governance	20	Provides leadership, guidance, and support in ensuring the leverage of DIT to achieve strategic objectives and stay ahead of the competition
S1	Board	15	Performs the P1-Board-level Governance
S2	Chief Executive Officer	20	Performs the P2-Business Executive Governance
S3	Chief DIT Officer	20	Performs the P3-DIT Executive Governance
R1	Digital & IT Transformational & Entrepreneurial Leadership	20	Communicates a clear strategic vision for DT, inspires and motivates employees to embrace change and drive innovation, think creatively, and take risks to develop new DIT products and services

Notes: Freq. = Frequency, Cat. = Category, P=Process, S=Structure, R = Relational, DIT = Digital & IT, DT = Digital Transformation.

banking, shifting profitability to information-based activities and fee-based income,” as also observed by Van Greuning and Bratanovic (2020). BRI responded with BRIVOLUTION 1.0 in 2016 and 2.0 in 2021 as their digital transformation strategy (BRI, 2021). The CEO also explained that

BRI's digital transformation strategic initiatives comprise breakthrough and business-as-usual streams managed by the ambidextrous governance approaches.

Furthermore, interviewee 3, the Chief Digital & IT Officer (Digital & IT Director), represents the second BRI management board and performs Digital & IT Executive Governance by providing leadership and support to leverage Digital & IT initiatives to stay ahead of the competition. Afterward, the Chief DIT Officer clarified the “digital” term in its title, which represents the agile-adaptive Chief Digital Officer (CDO), and “IT” represents the traditional Chief Information Officer (CIO) and Chief Technology Officer (CTO) roles. The Chief DIT Officer emphasized that the best approach is combining the advantages of start-up mode, like agile, innovation, and experimentation, with corporation mode, like plan & execute, optimized, and business as usual,” as also aligned with prior studies (Jöhnk et al., 2022; Vejseli et al., 2022);(Mulyana et al., 2021, 2022, 2023). The significance of both board-level and executive governance is also confirmed by Caluwe, De Haes, Wilkin, and Huygh (2021), since their roles are essentially contributive to ambidextrous innovation in digital transformation (Ben Rejeb, Berraies, & Talbi, 2020).

Lastly, interviewee 3 emphasized that “All BRI leaders require adequate DIT Transformational & Entrepreneurial Leadership skills to survive the digital transformation journey,” encompassing communication of clear digital transformation strategic vision, inspiring employees to embrace change, driving innovation, and taking calculated risks to develop new DIT products and services that aligned with Utoyo et al. (2020)'s findings. Additionally, leadership and entrepreneurial skills emerge as new essential managerial capabilities in digital transformation (Heubeck, 2023).

To understand how BRI has implemented the Board and Executive key ambidextrous IT governance mechanisms can be seen through BRI organization structure related to its digital transformation in Fig. 5.

4.1.2. Strategy and architecture key mechanisms

As shown in Table 5, the second key ambidextrous mechanism, Strategy and Architecture, is essential for orchestrating a successful

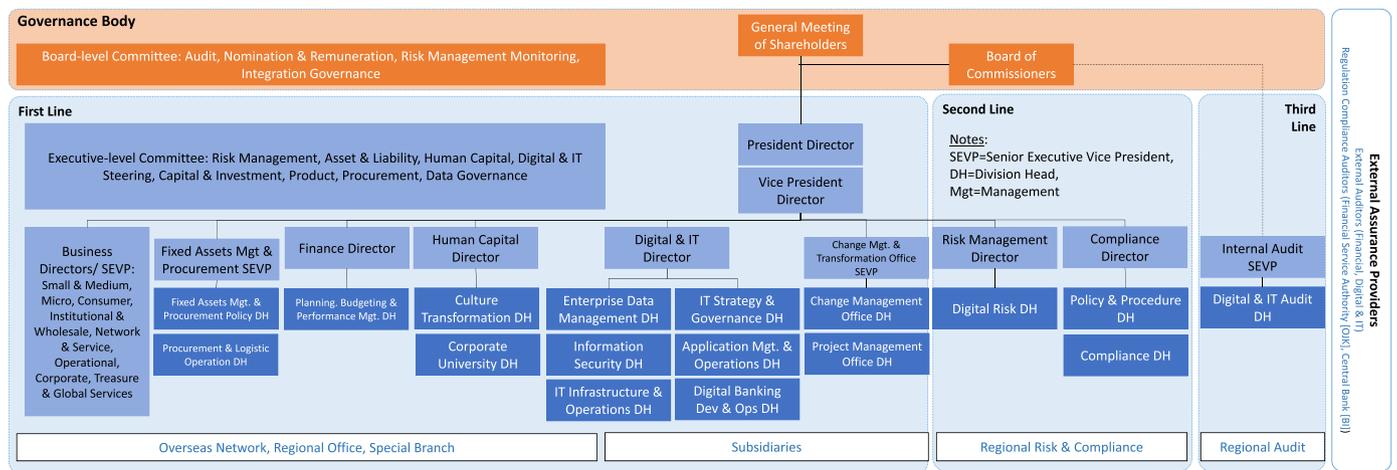


Fig. 5. The Implementation of Key Ambidextrous IT Governance in BRI Three Lines of Defense Structure.

Table 5 Strategy and Architecture Thematic Analysis Result.

Theme: Strategy and Architecture (Key Ambidextrous IT Governance 2)			
Frequency Average: 19.0 out of 20 interviewees			
Cat.	Code	Freq.	Impact on Digital Transformation
P4	Business Portfolio and Performance Management	18	Prioritizes and monitors DT breakthrough strategic initiatives and business-as-usual initiatives, supports championship, and ensures the implementation on time, scope, budget, and quality by monitoring and tracking them
P5	Digital & IT Portfolio and Performance Management	19	Prioritizes and monitors DIT initiatives, ensuring that they align with the organization's overall strategic vision and generate tangible business value
P6	Digital & IT Strategy and Architecture Management	20	Manages DT initiatives to be aligned with the organization's overall business strategy and technical architecture and comply with the detailed governance rules
S4	Transformation and Project Management Office	18	Performs P4-Business Portfolio and Performance Management
S5	Digital & IT Steering Committee	19	Performs P5-DIT Portfolio and Performance Management
S6	Digital & IT Strategy and Architecture Function	20	Performs P6-DIT Strategy and Architecture Management

Notes: Freq. = Frequency, Cat. = Category, P=Process, S=Structure, R = Relational, DIT = Digital & IT, DT = Digital Transformation.

digital transformation within BRI. By developing a clear and adaptive digital and IT strategy, coupled with a robust micro-service architectural framework, organizations can effectively navigate their strategic roadmap. This approach allows BRI to leverage digital technologies to achieve business objectives while remaining responsive to changing market dynamics and emerging opportunities. The combination of strategic clarity and architectural flexibility ensures that the organization can continuously align its digital initiatives with its overarching business goals, facilitating sustained competitive advantage.

Moreover, the representatives from the Change Management Division (interviewee 6) and Project Management Office (interviewee 9) have revealed the **Transformation & Project Management Office** role. The role performs the **Business Portfolio & Performance Management** by prioritizing, monitoring, and tracking the digital transformation breakthrough strategic initiatives (agile-adaptive) and business-as-usual initiatives (traditional), supporting the

championship, and ensuring the implementation is aligned, on time, scope, budget, and quality.

Furthermore, to support the more technical perspective of both initiatives, BRI formed a joint committee between its executive and its line management leaderships called the **DIT Steering Committee**, which performs the **DIT Portfolio & Performance Management** by prioritizing and monitoring their DIT initiatives, ensuring that they align with the organization's overall strategic vision and generating tangible business value. These practices align with the previously discussed ambidextrous concept from Horlach et al. (2017); Lee et al. (2015).

Subsequently, the IT Strategy & Governance Division representative as interviewee 12, revealed the **DIT Strategy & Architecture Function** who leads the **DIT Strategy & Architecture Management** supported by all related BRI components by ensuring that digital transformation initiatives align with the organization's overall business strategy and agile-adaptive enterprise architecture. Interviewee 12 also explained that "To achieve greater speed and adaptability, we have developed the GREAT strategy toward the outcome of groom (G) breakthrough innovation to become the industry leader on digital & IT services in Southeast Asia, that supported by the foundation hold by the resilience (R) IT platform and excellent (E) data-driven organization, governed by the operating model of ambidextrous (A) governance, which is transformed (T) by the digital talent." The overarching digital transformation vision and strategy within BRI GREAT is similar to Chanias, Myers, and Hess (2019) financial services case study. Additionally, the appropriate BRI enterprise architecture management capabilities also beneficial to support the continuous alignment of BRI resources with its strategy along its digital transformation journey, as shown by Pattij, van de Wetering, and Kusters (2022).

In the triangle of Fig. 6, the BRI digital transformation strategy is underpinned by two foundational elements that support the key ambidextrous IT governance mechanisms: the digital and IT platform, and a data-driven organization. The digital and IT platform provides the necessary infrastructure and technological capabilities to enable and sustain digital initiatives. Meanwhile, the data-driven organization ensures that decision-making processes are informed by accurate and timely data, fostering a culture of analytics and insights.

At the center of these mechanisms lies the essential support of business and digital & IT talents. These skilled professionals are crucial for driving the digital transformation forward, as they possess the expertise and innovative mindset required to implement and manage advanced digital solutions. Together, these elements work synergistically to achieve innovation in digital transformation, ensuring that BRI can navigate the complexities of the digital era and maintain a competitive edge. These BRI strategy aligned with Gregory, Keil, and Muntermann (2012)'s study which emphasized the importance of

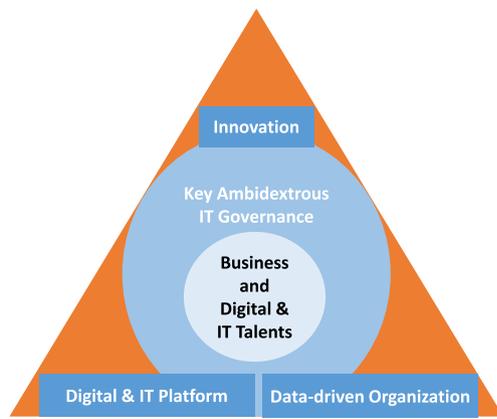


Fig. 6. The Implementation of Key Ambidextrous IT Governance in BRI Digital Transformation Strategy.

ambidextrous strategy as a dynamic balancing act of transformation in the banking industry.

4.1.3. Talent and culture key mechanisms

As shown in Table 6, the third key ambidextrous Talent and Culture mechanism is pivotal in driving a successful digital transformation within BRI. By prioritizing talent development and fostering a culture that values innovation and digital readiness, BRI can unlock the full potential of their workforce. This approach ensures that employees are equipped with the necessary skills and mindset to embrace technological advancements and contribute effectively to digital initiatives, thereby propelling the digital transformation forward.

Interviewees 7 and 10 from the Culture Transformation Division and Human Capital Development Division revealed the **DIT Talent & Culture Management Function** role who performs the **DIT Talent & Culture Management** by developing the DIT skills and competencies and passion for innovation with a rewarding environment for creativity needed to execute digital transformation initiatives successfully.

Moreover, interviewee 10 exposed the BRI talent strategy: “We set up the foundation based on traditional and agile-adaptive governance, remote collaboration, and modern talent strategy, which is supported by the appropriate culture and capabilities.” In addition, interviewee 7 also mentioned, “We also performed the BRI GREAT spirit culture activation toward the performance-driven culture that is simpler but impactful.” Likewise, both interviewees revealed the **DIT Mindset, Behavior, and Culture** mechanism that developed a digital-first mindset, where DIT is integrated into all aspects of the organization's operations, and employees

Table 6
Talent and Culture Thematic Analysis Result.

Theme: Talent and Culture (Key Ambidextrous IT Governance 3)			
Frequency Average: 18.0 out of 20 interviewees			
Cat.	Code	Freq.	Impact on Digital Transformation
P7	Digital & IT Talent and Culture Management	18	Develops the DIT skills and competencies, passion for innovation with a rewarding environment for creativity needed to execute DT initiatives successfully
S7	Digital & IT Talent and Culture Function	18	Performs P7- DIT Talent and Culture Management
R2	Digital & IT Mindset, Behavior and Culture	18	Develops a digital-first mindset, where DIT are integrated into all aspects of the organization's operations, and employees are empowered to use digital tools to work more efficiently and effectively

Notes: Freq. = Frequency, Cat. = Category, P=Process, S=Structure, R = Relational, DIT = Digital & IT, DT = Digital Transformation.

are empowered to use digital tools to work more efficiently and effectively. Those comprehensive talent and culture approach contributes to BRI's capability to innovate new businesses, as illustrated in [Khin and Ho \(2019\)](#) study. As also revealed by [Gulshani \(2019\)](#), talent management becomes critical to achieve sustainable advantage and survive in nowadays complex, volatile, and unstable environments in an ambidextrous organization.

How BRI has implemented the key ambidextrous IT governance in its talent and culture strategy is illustrated in [Fig. 7](#) based on interviewees 7 and 10. According to the Culture Transformation division, BRI culture strategy begin from the mindset of all BRI stakeholders to do the right thing, in a good way, to achieve the beautiful result. Afterward, BRI build the behavior by reimagining the customer solution with empathy toward value creation, which strengthened the risk-driven design by reconfiguring the methodology with discipline and constant learning, toward the riveting automation, integration, and alignment, supported by collaborations. Those integrated mindset and behavior become the foundation of organizational culture of impact to benefit the stakeholders by constant learning and sharing to improve their speed and quality.

Likewise, the Human Capital Development division has revealed the BRI talent strategy that begin from the optimization talents' headcounts and capabilities in business and digital & IT. Afterward, BRI support the talents with physical and digital office management for better collaborations. Then, BRI hones and equips with relevant talent's best practices. Both BRI culture and talent strategy intertwined altogether toward the performance driven, impactful, and full of simplicity value creation.

4.1.4. Data and information key mechanisms

As shown in [Table 7](#), the fourth key ambidextrous Data and Information mechanism is vital for steering BRI's successful digital transformation. By harnessing the power of data to gain valuable insights, BRI can drive strategic decision-making and fuel innovation. Ensuring the accuracy, integrity, and security of data and information assets is crucial. Leveraging advanced analytics and data-driven technologies unlocks new opportunities, drives competitive advantage, and achieves sustainable growth in the digital era.

Moreover, based on the insights from interviewees 16 and 17, the Information Security Division and Enterprise Data Management Division have revealed that BRI has a dedicated **Data Management Function** responsible for executing the **Data Management** process. This function effectively manages data assets and capabilities, ensuring the optimal utilization of data-driven DIT products and services to maintain competitiveness. It comprises various roles, including data management office, data architect, data custodian, data owner, data steward, data producer, and data consumer. Those roles support the GREAT strategy of BRIBRAIN initiatives toward data-driven organization, similar to [Krumay and Rückel \(2020\)](#) case study.

Furthermore, it was also mentioned that BRI has a vital **Information Security Function** responsible for executing **Information Security Management**. This function safeguards BRI's digital assets, including know-how and intellectual property, from security threats. It ensures that security is seamlessly integrated into all digital transformation initiatives, providing a robust protective layer. In addition, the same function also actively supports the latest BRI DevSecOps practice, fostering cross-functional collaboration between development and operations functions with enhanced security measures, as exemplified by [Hemon, Lyonnet, Rowe, and Fitzgerald \(2020\)](#). These BRI mechanisms align with ambidextrous information security approach that focuses on the protection of data, systems, and networks, while fostering the rapid introduction of new digital technology in an organization ([Carayannis, Grigoroudis, Rehman, & Samarakoon, 2021](#)).

How BRI has implemented the Data and Information key ambidextrous IT governance mechanisms is shown in [Fig. 8](#) through the BRI's Digital & IT Directorate Organizational Structure. We can see that there are Enterprise Data Management and Information Security Divisions in



Fig. 7. The Implementation of Key Ambidextrous IT Governance in BRI Talent and Culture Strategy.

Table 7

Data and Information Thematic Analysis Result.

Theme: Data and Information (Key Ambidextrous IT Governance 4)			
Frequency Average: 20.0 out of 20 interviewees			
Cat.	Code	Freq.	Impact on Digital Transformation
P8	Data Management	20	Manages data assets and capabilities, ensuring the leverage of data-driven DIT products and services for staying competitive
P9	Information Security Management	20	Protects the organization's digital assets, including know-how and intellectual property, from security threats and ensures that security is integrated into all DT initiatives.
S8	Data Management Function	20	Performs P8-Data Management
S9	Information Security Function	20	Performs P9-Information Security Management

Notes: Freq. = Frequency, Cat. = Category, P=Process, S=Structure, R = Relational, DIT = Digital & IT, DT = Digital Transformation.

the right area with blue-colored gradation to govern and manage BRI data and information security, representing the traditional approach. Likewise, the hybrid with the agile-adaptive approach by establishing some Center of Excellences (CoEs) can be seen in the center-down area with orange-colored gradation to facilitate the cross-functional collaborations between all related functions to manage the related digital product and service. For example, BRIBRAIN is for artificial intelligence,

blockchain, automation, cloud, and agile CoEs.

4.1.5. Development and operations key mechanisms

As shown in Table 8, the fifth key ambidextrous Development and Operations mechanism is instrumental in driving BRI's successful digital transformation. By adopting a hybrid approach that integrates agile and DevOps practices with traditional system development and operations, supported by a robust infrastructure, BRI can accelerate the pace of innovation and the delivery of digital and IT products and services. This approach balances scalability, flexibility, and resilience with the need for stability, security, and control, ensuring a comprehensive and effective transformation.

Subsequently, based on the insights from interviewees 13 and 14, representing the Application Management and Operations Division and Digital Bank Development and Operations Division, BRI has adopted the **DIT Development Function** and **DIT Operations Function** as the latest embodiment of its ambidexterity of agile-adaptive and traditional approaches. Both teams collaborate in executing the **DIT Development Management** and **DIT Operations Management** by developing and operating secured digital & IT products.

Moreover, interviewee 15 mentioned the utilization of agile-adaptive development and operations practices in BRI, fostering innovation, continuous integration, delivery, and automation to develop digital solutions. Furthermore, interviewee 14 revealed that BRI still operates a traditional development and operations approach, particularly for managing the higher-risk and more stable IT solutions like the core system, similar to the prior study from Mulyana et al. (2022). Interview 14 added, "We have implemented agile-adaptive governance to

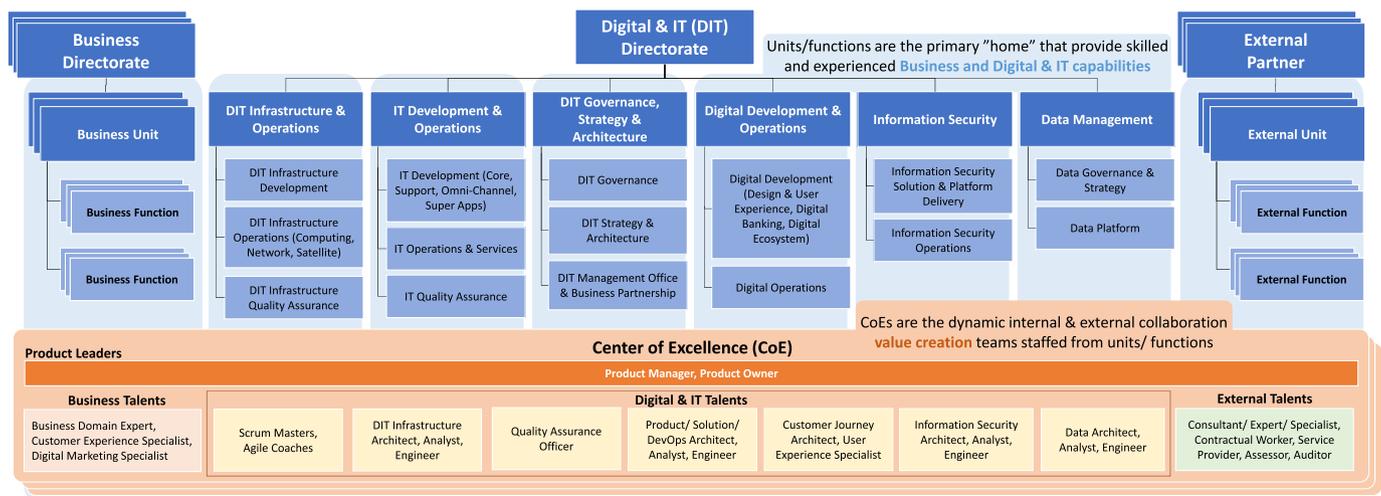


Fig. 8. The Implementation of Key Ambidextrous IT Governance in BRI Internal and External Collaboration Structure.

Table 8
Development and Operations Thematic Analysis Result.

Theme: Development and Operations (Key Ambidextrous IT Governance 5)			
Frequency Average: 17.0 out of 20 interviewees			
Cat.	Code	Freq.	Impact on Digital Transformation
P10	DIT Development Management	18	Develops secured digital & IT products and services, invents innovation, continuous integration and delivery, and automation
P11	DIT Operations Management	18	Operates secured digital & IT products and services, invents innovation, continuous integration and delivery, and automation
P12	DIT Infrastructure Management	15	Provides all infrastructure requirements to support digital transformation initiatives, delivering digital & IT products and services.
S10	DIT Development Function	18	Performs P10-DIT Development Management
S11	DIT Operations Function	18	Performs P11-DIT Operations Management
S12	DIT Infrastructure Function	15	Performs P11-DIT Infrastructure Management

Notes: Freq. = Frequency, Cat. = Category, P=Process, S=Structure, R = Relational, DIT = Digital & IT, DT = Digital Transformation.

work faster, enabled by remote collaborations, supported by composable and highly granular architecture, making it easier to implement innovations.”

In addition, interviewee 15 declared that BRI has a **DIT Infrastructure Function** that performs **DIT Infrastructure Management**. It was explained that “*We supported cross-functional collaborations during server provisioning and capacity planning.*” Interviewee 15 also added that “*our function is to provide the server and network facilities through virtualization, guaranteed by service level metrics behind the applications and hosted with Data Center (DC), secured by Disaster Recovery Center (DRC), and connected to a broad network support, including Indonesian-wide satellite coverage.*” BRI is the only bank with a “BRISat” satellite covering Indonesia and neighboring countries (Leksono, 2016).

To understand how BRI has implemented the Cross-functional Collaboration between the seven key IT governance mechanisms, we can begin with the previous Fig. 8 that mentioned the traditional Digital & IT Directorate organization combined with an agile-adaptive approach facilitated by the Center of Excellences. In the center area of blue-colored gradation, there are IT Ambidextrous structures implemented by combining the Application Management & Operation Division as a traditional mode with the Digital Banking Development & Operation Division as an agile-adaptive mode, supported by the Enterprise Data Management, Information Security Divisions, and Infrastructure & Operations Division to practice DevSecOps approach. Meanwhile, the Digital & IT Director directed and governed the collaboration, supported by the IT Strategy & Governance Division.

To delve into the details regarding the product management process, we can refer to Fig. 8 concerning the collaboration between BRI product leaderships that consists of the product manager and owner, the specialized business resources as business domain experts like Customer Experience (CX), and Digital Marketing Specialist, and the technical resources consist of DevOps Engineer, Scrum Master, Quality Assurance (QA) Engineer, Product Architect, User Experience (UX) Specialist, and Cybersecurity Engineer. These BRI mechanisms are important to enable the organization in reaching an ambidextrous balance in collaborative new product development processes (Hald & Nordio, 2021).

4.1.6. Internal and external collaborations key mechanisms

As shown in Table 9, the sixth key ambidextrous Internal and External Collaborations mechanism is crucial for BRI's successful digital transformation. This mechanism breaks down organizational silos, encourages knowledge sharing, and fosters teamwork across departments. Additionally, it leverages partnerships with technology vendors, industry experts, and other stakeholders to create a dynamic and

Table 9
Internal and External Collaborations Thematic Analysis Result.

Theme: Internal & External Collaborations (Key Ambidextrous IT Governance 6)			
Frequency Average: 20 out of 20 interviewees			
Cat.	Code	Freq.	Impact on Digital Transformation
R3	Cross-functional Collaboration	20	Manages strategic alignment of DT initiatives by bringing together stakeholders from different business units and functions to work toward a common goal
R4	External Collaboration	20	Leverages external expertise, technology, and resources to build a digital ecosystem supporting DT initiatives and develops new DIT products and services

Notes: Freq. = Frequency, Cat. = Category, P=Process, S=Structure, R = Relational, DIT = Digital & IT, DT = Digital Transformation.

supportive ecosystem. This collaborative approach propels BRI's digital transformation journey by integrating diverse perspectives and expertise, driving innovation, and ensuring a holistic transformation.

Moreover, according to interviewee 3, the DIT Director, it was mentioned that the BRI digital transformation team performs the **Cross-functional Collaborations** to ensure strategic alignment of digital transformation initiatives by bringing together stakeholders from different business units and functions to work toward a common goal via cross-functional collaborations. It was also confirmed by interviewee 3 that “*With the help of product owners, scrum masters, and agile coaches, the new items are introduced into the sandbox center of excellences (COEs) of automation, cloud, agile, blockchain, and artificial intelligence (AI),*” which also supported by “*the experts in quality control, solution architecture, customer journey design, advanced analytics, cybersecurity, and data architecture.*”

Furthermore, BRI also performs **External Collaborations** by leveraging external expertise, technology, and resources to build a digital ecosystem supporting digital transformation initiatives and develop new DIT products, added interviewee 8, the Procurement & Logistic Operation Division, which is accountable for acquiring external support. This essential theme of ambidextrous mechanisms is upgraded compared to the traditional collaboration practice mentioned by Weritz, Braojos, and Matute (2020) study.

The previous sections, supported by Fig. 8 have discussed how the Cross-functional (Internal) Collaborations between all seven key ambidextrous IT governance mechanisms are facilitated through the BRI Center of Excellences. Likewise, BRI External Collaboration is implemented through collaborations with other banks, fintech, start-ups, government agencies, rural stakeholders, and other related parties, forming a digital ecosystem. These BRI mechanisms align with Esposito De Falco, Renzi, Orlando, and Cucari (2017)’s study regarding how open collaborative innovation and digital platform affect organization's ambidexterity.

4.1.7. Risk and audit key mechanisms

Finally, as shown in Table 10, the seventh key ambidextrous Risk and Audit mechanism is essential for ensuring BRI's successful digital transformation. By implementing comprehensive risk management and audit practices, this mechanism helps identify, assess, and mitigate potential risks associated with digital initiatives and regulatory requirements. It ensures transparency and accountability, providing a secure environment that supports sustainable innovation and growth. This proactive approach to risk and audit fosters a culture of vigilance and continuous improvement, essential for navigating the complexities of digital transformation.

Interviewees 18 and 19 represented the **DIT Risk & Compliance Function**, responsible for **DIT Risk & Compliance Management**. Their duty is to mitigate potential DIT risks to BRI's assets and intellectual property, including regulatory compliance. Interviewee 18 highlighted,

Table 10
Risk and Audit Thematic Analysis Result.

Theme: Risk and Audit (Key Ambidextrous IT Governance 7)			
Frequency Average: 15.5 out of 20 interviewees			
Cat.	Code	Freq.	Impact on Digital Transformation
P12	DIT Risk and Compliance	16	Mitigates potential DIT risks to their digital assets and intellectual property, including regulatory compliance, by regularly assessing and monitoring the risks and managing measures implementation
P13	DIT Audit and Assurance	15	Evaluates the effectiveness, efficiency, and security of risk-based control adequacy of DIT products and services
S12	DIT Risk and Compliance Function	16	Performs P12-DIT Risk and Compliance
S13	DIT Audit and Assurance Function	15	Performs P13 DIT Audit and Assurance

Notes: Freq. = Frequency, Cat. = Category, P=Process, S=Structure, R = Relational, DIT = Digital & IT, DT = Digital Transformation.

“Considering that digital transformation inherently increases digital risk because moving faster tends to go wrong, in 2021, BRI already has a first-ever dedicated Digital Risk Division (DRD) in an Indonesian bank that guards BRI’s digital transformation.”

Lastly, interviewee 20 serves as the **DIT Audit & Assurance Function**, responsible for **DIT Audit & Assurance Management**. Their responsibility entails safeguarding the effectiveness and efficiency of DIT risk-based control adequacy in digital transformation. They emphasized, “The role of DIT internal audit has been transformed from a watchdog to consulting. We are often invited to consult on control adequacy in digital solution development and operations for traditional and agile-adaptive approaches.” The DIT internal audit is a comprehensive empirical practice compared to [Mkoba and Marnewick \(2020\)](#) auditing agile conceptual framework.

To understand the implementation of Risk and Audit key ambidextrous mechanisms in governing and managing the BRI digital transformation journey, we can refer to [Fig. 5](#). It was revealed that the DIT risk and compliance management and DIT internal audit as the second and third line have adopted the ambidextrous approach through BRI Three Lines Model as the latest enterprise risk management good practice from the Institute of Internal Auditor (IIA), as revealed by [Seidenfuss, Young, & Datwani, 2023](#). This is a recent upgrade from the previously discussed Three Lines of Defense practice as mentioned by [Davies and Zhivitskaya \(2018\)](#). According to [Fig. 5](#), the governing body of BRI (General Meeting of Shareholders, Board-level Committee, and Board of Commissioners) hold the accountability to stakeholders for organizational oversight with integrity, leadership, and transparency principles to govern BRI ambidextrous digital & IT initiatives. In the recent update, the first line management of BRI (Business & Business Support and Digital & IT Directorates/Units/Functions) who provide the risk-based value propositions and collaborate closer with the second line management of BRI (Digital & IT Risk, Compliance, and Policy & Procedure Directorates/Units/Functions) who provide the risk-related matters expertise, support, monitoring, and challenge. Whereas the third line/internal audit of BRI (Digital & IT Audit unit/function) provide an objective and independent assurance regarding the performance and compliance of both previous management lines.

Additionally, as emphasized by [Aditya, Hartanto, and Nugroho \(2018\)](#), it is important to have a strong management commitment to strengthen the DIT audit’s relevance, forward-looking, and risk-focused approach to support digital transformation.

4.2. How BRI’s digital transformation dimensions impact organizational performance

As shown in [Table 11](#), the five BRI digital transformation dimensions—Digital Transformation Strategy, Strategic Alignment, Digital & IT Assets, Knowledge and Capability, and Innovation Culture—profoundly influence BRI’s organizational performance achievements by enhancing BRI’s operational excellence, customer experience, industry presence, and financial returns, culminating in a successful digital transformation.

This section presents how BRI’s digital transformation dimensions impact its organizational performance. Initially, interviewee 3 mentioned that BRI annually assesses their digital transformation maturity, “Since 2017, we have conducted a digital maturity assessment. In 2021, our score was 87.1 out of 100 in four categories, consisting of digital strategy (90), culture (85.5), organization (83.0), and capabilities (86.7).” The digital transformation maturity dimensions used in BRI assessment are similar to [Gurbaxani and Dunkle \(2019\)](#) digital transformation dimensions.

Firstly, according to interviewee 2, the **Digital Transformation Strategy** dimension has been incorporated into BRIVOLUTION 1.0 and 2.0 ([BRI, 2023](#)), governed by the key IT governance mechanisms and influential to BRI organizational performance in [Table 11](#). It was explained that “In 2021, we have upgraded BRIVOLUTION 1.0 into 2.0, continuing the strategic vision toward the most valuable banking group in southeast Asia and refocusing to be the champion of financial inclusion.” All interviewees aligned with [Chanias et al. \(2019\)](#); [Mulyana et al. \(2023\)](#); [Tsou and Chen \(2021\)](#) findings that digital transformation strategy is an important dimension to prioritize DIT investments with a better understanding of customer needs, leading to differentiated offerings and increased profitability. The Digital Transformation Strategy BRIVOLUTION 2.0 can be seen in [Fig. 9](#) in the last part of this section.

Secondly, interviewee 3 revealed the **Strategic Alignment** dimension within BRIVOLUTION 2.0, as shown in The Digital Transformation Strategy in [Fig. 9](#), governed by the key IT governance mechanisms in [Table 11](#). It was mentioned that BRI’s digital transformation Strategy is constantly aligned with its customer’s changing needs and expectations to deliver its DIT products. BRI has responded to emerging trends and opportunities by innovating its digital initiatives to stay competitive and

Table 11
Digital Transformation Dimensions Thematic Analysis Result.

Theme: Digital Transformation Dimensions			
Frequency Average: 19.2 out of 20 interviewees			
Cat.	Code	Freq.	Impacts on Organizational Performance
DT1	Digital Transformation Strategy	20	Prioritizes DIT investments with a better understanding of customer needs toward differentiated offerings, leading to profitability
DT2	Strategic Alignment	19	Enables product, quality, and market alignment from business strategy to personalized services, leading to higher efficiency
DT3	DIT Assets	18	Streamlines business process automation by DIT operation and support, leading to better service delivery and customer experience
DT4	DIT Knowledge and Capability	19	Understands better the customer, product, service, and operations supported by people, process, and technology capabilities, leading to better satisfaction and delivery
DT5	DIT Innovation Culture	20	Encourages new business models and process improvement for better products and services, leading to higher satisfaction and brand value

Notes: Freq. = Frequency, Cat. = Category, DIT = Digital & IT, DT = Digital Transformation.

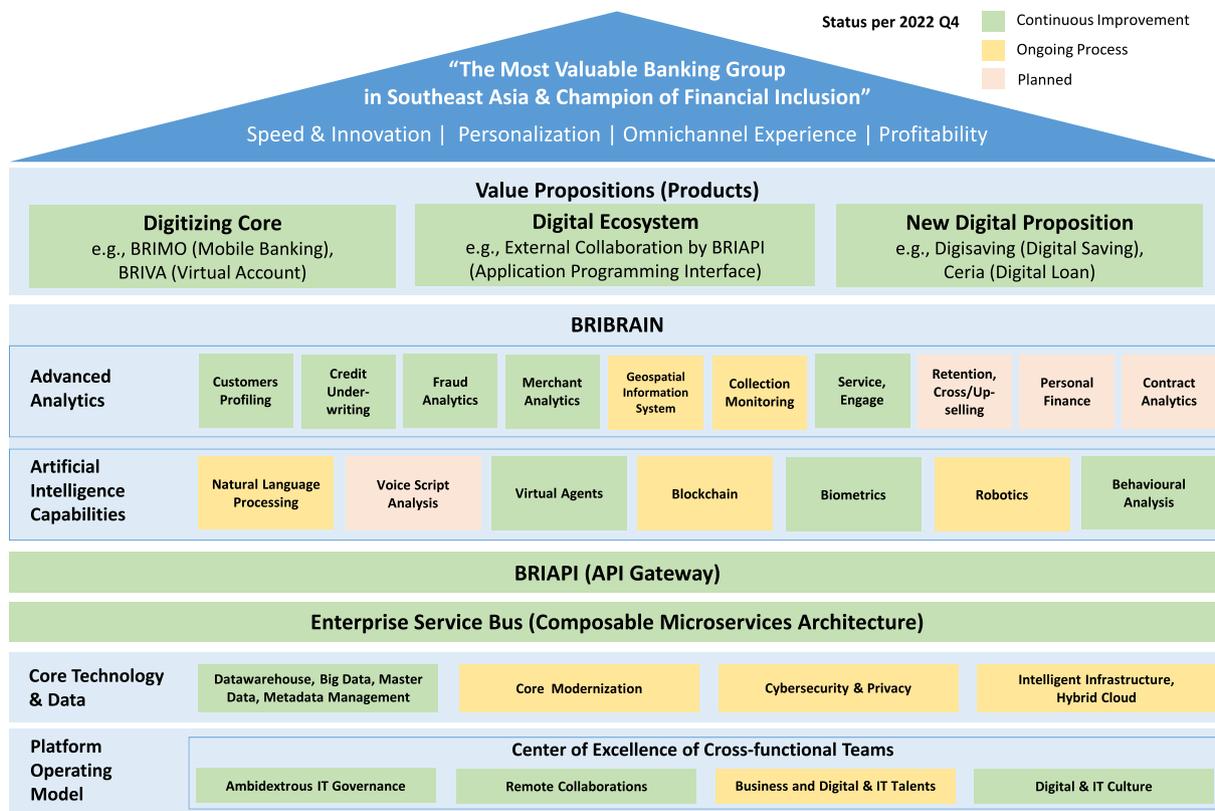


Fig. 9. The Implementation of Digital Transformation Dimensions Through BRIVOLUTION 2.0, adapted from BRI (2023) with permission.

relevant in the fast-changing landscape (BRI, 2023). Most interviewees concurred with the findings of Ping-Ju Wu et al. (2015); Vejseli et al. (2022); Mulyana et al. (2023) that strategic alignment, which includes alignment in terms of products, quality, and market, is a critical factor in enabling the transition from business strategy to personalized services, resulting in increased efficiency.

Thirdly, according to interviewee 12, BRI has established the **DIT Assets** dimension by implementing a resilient Digital & IT platform. The dimension is governed by the key IT governance mechanisms, as shown in Table 11. This DIT assets platform relies on a modern composable microservices architecture, using Enterprise Service Bus (ESB) technology, akin to the approach in Gill (2015) agile-adaptive EA study to support agile solutions development. The services are connected to external applications through BRIAPI as the API Gateway. The BRIAPI is also supported by data technology, including big data mining and analytics, Master Data Management (MDM), and core modernization. It is secured by cybersecurity and data privacy measures and strengthened by intelligent infrastructure and hybrid cloud technology, as shown in Fig. 9. It was elaborated that to drive organization-wide digital and analytics adoption through strong AI capabilities, BRI implemented the BRIBRAIN toward data-driven organization (BRI, 2023). To conclude, most interviewees concurred that DIT assets play a vital role in enhancing performance, which is consistent with the findings of Mulyana et al. (2023); Tsou and Chen (2021). This dimension involves streamlining business process automation through DIT operations and support, resulting in improved service delivery and enhanced customer experiences, as shown in Fig. 9.

Fourthly, the existence of BRI's **DIT Knowledge and Capability** was explained by interviewee 11, governed by the key IT governance mechanisms and later influencing BRI's organizational performance in Table 11. It was revealed that BRI possesses a better understanding of customer preferences, allowing it to tailor its DIT products to meet customer needs. BRI also has DIT channels and collaborations based on mobile and smart devices, integrated into a digital ecosystem with

partners & distributors, supported by smart service and operations, as shown in Fig. 9. Most interviewees concurred that DIT knowledge and capabilities are substantial facilitators in achieving better performance. The dimension is supported by the findings from Cegarra-Navarro, Soto-Acosta, and Wensley (2016); Khin and Ho (2019); Mulyana et al. (2023), which highlight that improved understanding of customers, products, services, and operations, supported by people, processes, and technological capabilities, leads to enhanced satisfaction and service delivery.

Fifthly, interviewee 7 mentioned that BRI has **DIT Innovation Culture** governed by the key IT governance mechanisms and impacted its organizational performance, as shown in Table 11 and depicted in Fig. 9. DIT Innovation Culture's vital role is to encourage DIT product innovation that creates new opportunities and fresh business ideas. It was revealed that BRI is constantly transforming and innovating to provide the best customer service. In the process, BRI's management is committed to always incorporating employees' ideas into executing innovation and transformation. This commitment is rooted in agile principles and an entrepreneurial mindset, exemplified by the EMBRIO innovation management initiative for BRILIAN individuals. The aim is to translate ideas and innovations into tangible results effectively. All interviewees concurred that DIT innovation culture is a crucial element for achieving performance, which aligns with the findings of Kiefer et al. (2021); Mulyana et al. (2023). This culture encourages the development of new business models and process improvements, leading to better products and services, higher levels of satisfaction, and increased brand value.

To understand how BRI designed and implemented the digital transformation dimensions, we can refer to Fig. 9 regarding BRI Digital and IT Capabilities of BRIVOLUTION 2.0, which is executed since 2021 with the latest status per Q4 2022. The previously mentioned capabilities align with the potential banking service domains that used the capacity of FinTechs, as revealed by Hanafizadeh and Amin (2023).

Based on the interview data, which is triangulated with BRI internal documents, there are three main value propositions of BRI digital & IT

capabilities, as shown in Fig. 9. The first value proposition is the **Digitizing Core**, which uses business process reengineering to boost output and efficiency while establishing dependable customer service. This value proposition delivered products/services such as **BRIMO** (Mobile Banking) and **BRIVA** (Virtual Account). The second value proposition is the **Digital Ecosystem**, which seeks to establish a digital platform and engage in extensive cooperation with a digital ecosystem (Bank as a Platform) that provides new services and products beyond the Bank's primary business, supported by the **BRIAPI** (Application Programming Interface). Lastly, the third value proposition is the **New Digital Proposition**, which uses a fully digital approach to establish a new business model, such as **Digisaving** (Digital Saving) and **Ceria** (Digital Loan), supported by **Big Data Analytics** and **BRIBRAIN** (Artificial Intelligence).

4.3. Performance achievements of BRI's digital transformation

As shown in Table 12, BRI's successful digital transformation has significantly bolstered its organizational performance across four key measures: Operational Excellence, Customer Experience, Industry Presence, and Financial Returns.

This section describes how all digital transformation dimensions impacted BRI's organizational performance achievements. According to interviewee 3, it was revealed that BRI has implemented organizational performance management based on the Objective and Key Results (OKR) framework, guided by Doerr (2018). Interviewee 4 also revealed, "There is a digital transformation performance calculation per year, as well as quarterly OKR setting that enables performance adjustment, supported by the weekly performance review and discussion. Through the OKR, the progress is transparent, and everyone is excited about a collaborative digital transformation performance."

Firstly, the **Operational Excellence** dimension was impacted by the successful BRI's digital transformation, as shown in Table 12. This dimension is also present in Mulyana et al. (2023). Interviewees 13 and 14 stated that BRI has been able to automate and streamline many of its internal processes, resulting in faster turnaround times. Moreover, interviewee 17 also managed to enable the collection and analysis of large volumes of data in real time, providing customer behavior, market trends, and operational insights to support data-driven decisions through the **BRIBRAIN** (BRI, 2022). This data-driven decision-making approach fulfilled a paradigm shift within companies which is supported by the BRI board and executives' managerial archetypes, as revealed by Korherr, Kanbach, Kraus, and Mikalef (2022).

Secondly, interviewee 3 disclosed that **Customer Experience** achievement, influenced by BRI's successful digital transformation, garnered agreement from 19 interviewees, as indicated in Table 12. A

Table 12
Organizational Performance Dimensions Thematic Analysis Result.

Theme: Organizational Performance Dimensions			
Frequency Average: 18.5 out of 20 interviewees			
Cat.	Code	Freq.	Performance Achievements of Digital Transformation
OP1	Operational Excellence	20	Automated and streamlined business processes resulting in faster turnaround times that enabled large volumes of real-time data for data-driven decision-making
OP2	Customer Experience	17	Stronger brand image from digitalized omnichannel delivery that attracted new customers and retained the existing ones
OP3	Industry Presence	17	Larger network coverage facilitated by various digital products and services, which is supported by a stronger digital ecosystem
OP4	Financial Returns	20	Increased transaction growth and sales volume

Notes: Freq. = Frequency, Cat. = Category, OP = Organizational Performance.

similar dimension is also used by Mulyana et al. (2023). Subsequently, BRI's brand image is getting stronger because of the delivery of an omnichannel customer experience supported by digital services. The improved image helped attract new customers and retain existing ones, proven by the award achievement of "The Most Valuable Brand," as stated in the Annual Report (BRI, 2022). Interviewee 9 also added the survey conducted by Bank Indonesia (Indonesian Bank Regulatory Body) in 2020, which showed BRI's mobile banking app was ranked first in customer satisfaction among all apps offered by Indonesian banks. The survey assessed various aspects of mobile banking, including ease of use, transaction speed, and reliability (BRI, 2022).

Thirdly, interviewee 5 highlighted BRI's attainment of **Industry Presence**, influenced by its successful digital transformation, a consensus shared by 17 interviewees, as demonstrated in Table 12. Furthermore, this industry presence performance dimension is also measured in Mulyana et al. (2023). Moreover, this dimension is shown through the expansion of BRI's digital network coverage, facilitated by introducing various digital transformation-related products. For example, in 2022, the BRIMO mobile banking service reached over 23.85 million users and became Indonesia's most-used banking application, as triangulated in the Annual Report (BRI, 2022). Subsequently, BRI collaborates with other banks, fintech, start-ups, and government agencies, forming a digital ecosystem. BRI also shows a strong presence in rural areas supported by the branches and digital technology, providing services to unbanked and underbanked populations (BRI, 2022).

Fourthly, interviewee 4 revealed that BRI achieved **Financial Return**, which are impacted by its successful digital transformation, as shown in Table 12. It was revealed that "In 2022, the BRIMO product resulting from digital transformation has increased transaction growth to 210%, achieving 198% increased sales volume by 2,669.09 trillion IDR." The previously boosted sales came from BRI's digital transformation vision and strategic alignment implementation through digital technology product innovation, which was previously mentioned. For instance, the BRIAPI microservices architecture is a digital ecosystem platform used by the BRIMO mobile banking application. The BRIAPI facilitated collaborations with other third parties' applications through virtual accounts and fee-based income, as triangulated with the Annual Report (BRI, 2022) and revealed as a new way to create and capture value based on API-driven business model of self-service platform (Heshmatisafa & Seppänen, 2023).

The previously mentioned operational excellence, customer experience, and financial return dimensions were also presented by Ping-Ju Wu et al. (2015); Vejseli et al. (2022) in the context of business-IT alignment influence on organizational performance. Whereas the industry presence dimension is also presented by Vial (2019); Zhu et al. (2022).

Fig. 10 offers insights into how BRI has implemented its organizational performance management (BRICore) to measure digital transformation achievements based on the Objective and Key Results (OKR) framework. According to Doerr (2018), OKR is a goal-setting methodology used by organizations to define and track objectives and their outcomes. It consists of setting ambitious, qualitative objectives that outline what needs to be achieved and measurable key results that specify how the objectives will be accomplished and measured. As revealed by interviewee 3, BRICore are set at multiple levels within an organization, from top-level company objectives to individual team or employee objectives, to ensure alignment and focus on common goals. The framework encourages transparency, accountability, and agility in goal-setting and execution, making it popular among businesses seeking to drive performance and innovation (Doerr, 2018).

The financial performance measures of the three BRI value propositions are listed in Table 13. The first value proposition is **Digitizing Core** that consists of BRIMO (Mobile Banking) and BRIVA (Virtual Account). In the fiscal year 2021–2022, BRIMO's performance achieved a 198% increase in sales volume in IDR 2669.09 trillion, with transaction

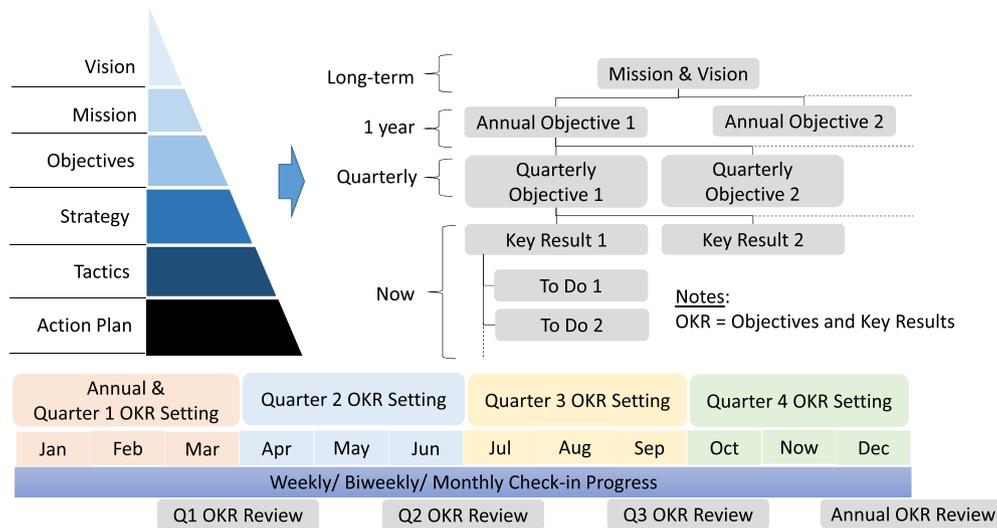


Fig. 10. The Implementation of BRI OKR Organizational Performance Management to Measure Digital Transformation Achievements.

Table 13
BRI Digital Transformation Financial Return Dimension Performance Achievements.

No	Category	Product	Performance Indicator					
1	Digitizing Core	BRIMO	Sales Vol. (IDR Tn)	Ach.	Tr. Freq. (Mio)	Ach.	Users (Mio)	Ach.
		FY-2022	2669.09	198%	1825.40	210%	23.85	169%
		FY-2021	1344.79		869.10		14.15	
		BRIVA	Sales Vol. (IDR Tn)	Ach.	Tr. Freq. (Mio)	Ach.	FBI (IDR Bn)	Ach.
2	Digital Ecosystem	FY-2022	11.10	195%	15.22	107%	3.17	98%
		FY-2021	5.70		14.27		3.22	
		BRIAPI	Sales Vol. (IDR Tn)	Ach.	Tr. Freq. (Mio)	Ach.	FBI (IDR Bn)	Ach.
		FY-2022	468.60	256%	457.10	192%	111.40	236%
3	New Digital Proposition	FY-2021	182.70		238.10		47.20	
		Digisaving	Deposit (IDR Tn)	Ach.	Creditor	Ach.		
		FY-2022	12.10	269%	5189	396%		
		FY-2021	4.50		1311			
		Ceria (Loan)	Outstanding (IDR Mio)	Ach.	Debtor	Ach.	NPL	Ach.
		FY-2022	407.82	504%	251,400	340%	2.9%	94%
		FY-2021	80.95		74,014		3.1%	

Notes: FY=Fiscal Year, Vol = Volume, Tr = Transaction, Freq = Frequency, Ach = Achievement, FBI=Fee-Based Income, NPL = Non-Performing Loan, Tn = trillion, Mio = million.

frequency increased to 210% in amount 1825.40 million and reached 23.85 million users. Moreover, BRIVA has achieved a 195% increase in sales value of IDR 11.10 trillion, with transaction frequency increased to 107% and fee-based income reaching IDR 3.17 billion.

The second value proposition is **Digital Ecosystem** that facilitated by BRIAPI (Application Programming Interface). BRIAPI facilitated collaboration with 475 partners in 2021 and kept increasing to 714 partners in 2022, according to interviewee 3. In the fiscal year 2021–2022, BRIAPI performance has achieved a 256% increase in sales volume of IDR 468.60 trillion, with transaction frequency increased to 192% in amount 457.10 million and reached 111.40 IDR billion fee-based income (FBI).

The third value proposition is **New Digital Proposition** that consists of Digisaving (Digital Saving) and Ceria (Digital Loan). In the fiscal year 2021–2022, Digisaving performance achieved a 269% increased deposit value of IDR 12.10 trillion, with a total creditor of 5189, which increased to 396%. Likewise, Ceria has reached a 504% increase in outstanding loans in IDR 407.82 million, with a total debtor of 251,400, which increased to 340%. The Ceria's Non-Performing Loan (NPL) value was also 94% lower, reaching 2.9%, and remained in line with regulatory standards of <5%.

Summing up, the previously mentioned findings further strengthened prior study results in the context of the Indonesian banking and

insurance industry, which was conducted by Mulyana et al. (2022, 2023). The mentioned prior study demonstrated the moderate influence of ambidextrous IT governance mechanisms on digital transformation dimensions, as well as the strong influence of digital transformation dimensions on organizational performance achievements, based on Structured Equation Modeling Partial Least Squares analysis (Mulyana et al., 2023).

The integration of results from BRI's digital transformation reveals that the implementation of the seven key ambidextrous IT governance mechanisms—Board and Executive, Strategy and Architecture, Talent and Culture, Data and Information, Development and Operations, Internal and External Collaborations, and Risk and Audit—has been instrumental in achieving significant BRI's organizational performance improvements.

These mechanisms, when aligned with the five critical digital BRI's transformation dimensions—Digital Transformation Strategy, Strategic Alignment, Digital & IT Assets, Knowledge and Capability, and Innovation Culture—have driven enhancements in BRI's Operational Excellence, Customer Experience, Industry Presence, and Financial Returns.

The broader implications of these findings underscore the critical role of robust key ambidextrous IT governance that balancing the exploration with exploitation in steering successful digital transformations, particularly in the Indonesian banking sector and similar

emerging market contexts. For practitioners, these insights highlight the importance of a holistic governance approach that balances innovation with risk management while ensuring strategic alignment and leveraging digital assets effectively.

Policymakers can also leverage these findings to develop frameworks and standards that support digital maturity across industries. Additionally, the lessons learned from BRI's successful digital transformation journey can inform future strategies in other sectors or regions, emphasizing the need for adaptable governance structures, investment in talent development, and fostering a culture of continuous improvement and collaboration. These strategies are essential for organizations aiming to navigate the complexities of digital change and achieve sustained growth and competitiveness in the global market.

5. Conclusion

The findings of our study represent a significant contribution to the realms of IT governance and digital transformation research, as they illuminate crucial aspects of organizational success in the digital era. By addressing three key research questions, we unraveled essential insights that can guide both theory and practice in this evolving field. Firstly, our identification of seven key ambidextrous IT governance mechanisms underscores the intricate interplay between governance structures and digital transformation outcomes, offering a nuanced understanding of how these mechanisms drive success, particularly within the context of Bank Rakyat Indonesia (BRI). Secondly, our exploration of BRI's digital transformation dimensions sheds light on the multifaceted nature of digital initiatives and their impact on organizational performance. Notably, our findings elucidate how strategic alignment, digital assets, knowledge, and innovation culture collectively influence operational excellence, customer experience, industry presence, and financial returns. Importantly, our study extends previous research by providing empirical evidence of the mediating role of digital transformation in the relationship between IT governance mechanisms and organizational performance, thus offering a more comprehensive framework for understanding this dynamic interplay.

From a practical standpoint, our study offers actionable insights for organizational leaders embarking on their digital transformation journeys. By delineating the specific IT governance mechanisms that underpin success and elucidating the dimensions of digital transformation that drive performance outcomes, our findings empower decision-makers to strategically allocate resources and prioritize initiatives. Moreover, our research underscores the importance of measuring and evaluating performance across multiple dimensions, providing a roadmap for organizations seeking to gauge the efficacy of their digital initiatives comprehensively.

However, it is crucial to acknowledge the limitations of our study, including its reliance on cross-sectional data and its specific focus on the Indonesian banking industry. Future research endeavors should seek to address these limitations by employing longitudinal data and expanding the scope to encompass a more diverse range of organizations and industries. Additionally, further validation and generalization of our findings could be achieved through more extensive surveys and comparative analyses across different contexts.

In terms of broader implications, our study enriches current theories and practices in digital transformation and IT governance by offering empirical evidence and actionable insights. By elucidating the intricate dynamics between ambidextrous governance mechanisms, digital transformation and organizational performance dimensions, our findings contribute to a more nuanced understanding of the factors driving success in the digital age. Policymakers and industry standards bodies can leverage these insights to inform the development of guidelines and frameworks that support organizations in navigating their digital journeys effectively. Ultimately, our research underscores the transformative potential of strategic ambidextrous IT governance that balance the exploration and exploitation toward digital initiatives in

driving organizational performance and competitiveness in an increasingly digitally transformed world.

CRedit authorship contribution statement

Rahmat Mulyana: Writing – review & editing, Writing – original draft, Visualization, Software, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Lazar Rusu:** Writing – review & editing, Writing – original draft, Validation, Supervision, Resources, Project administration, Methodology, Funding acquisition, Conceptualization. **Erik Perjons:** Writing – review & editing, Writing – original draft, Validation, Supervision, Resources, Project administration, Methodology.

Declaration of competing interest

None.

Data availability

The data that has been used is confidential.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.digbus.2024.100083>.

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