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Research on the Path of Enterprise Management Innovation under Digital Transformation

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Abstract: Digital transformation has become an important strategic choice for enterprises seeking to improve efficiency, resilience, and competitiveness. However, digital transformation is not merely the application of digital technologies, but also a comprehensive change involving management concepts, organizational structures, business processes, data governance, talent systems, and risk control mechanisms. Many enterprises still focus mainly on technology investment while neglecting management innovation, which weakens the value creation effect of digital transformation. Based on literature review and normative analysis, this paper examines the necessity, major problems, and implementation path of enterprise management innovation under digital transformation. The study proposes a multidimensional framework including managerial mindset renewal, organizational structure optimization, business process reengineering, data governance enhancement, talent development and incentive improvement, digital risk control, and innovation-oriented organizational culture. The findings suggest that management innovation is the key organizational mechanism for transforming digital technology investment into sustainable enterprise performance. This study provides a systematic reference for enterprises to promote high-quality development in the digital era.

Keywords: Digital transformation; Enterprise management; Management innovation; Organizational change; Data governance.

1. Introduction

With the rapid development of big data, cloud computing, artificial intelligence, the Internet of Things, and platform technologies, enterprises are facing profound changes in their external environment and internal operating logic. Market demand has become more personalized, competition has become more dynamic, and organizational decision-making increasingly depends on data and digital systems. Digital transformation has therefore become an important strategic direction for enterprises seeking sustainable development.

Digital transformation refers to a process in which digital technologies trigger significant organizational changes and improve an entity's operation and value creation (Vial, 2019). This definition shows that digital transformation is not only a technical issue, but also a managerial and organizational issue. In practice, however, many enterprises still understand digital transformation narrowly as the introduction of information systems, digital platforms, or intelligent equipment. As a result, they often invest in digital tools but fail to redesign management systems, leading to weak coordination, fragmented data, low employee participation, and limited transformation performance (Verhoef et al., 2021).

Management innovation is the introduction and implementation of new managerial practices, processes, structures, or techniques intended to further organizational goals (Damanpour et al., 2018). Compared with technological innovation, management innovation focuses more on the renewal of management concepts, organizational arrangements, administrative processes, coordination mechanisms, and control systems. In the context of digital transformation, management innovation is particularly important because traditional hierarchical and experience-based management models are often unable to support rapid response, cross-functional collaboration, and data-driven decision-making (Hanelt et al., 2021).

Although existing studies have discussed digital transformation, digital strategy, and organizational capability, the integrated path of enterprise management innovation under digital transformation still needs further discussion (Kraus et al., 2022). To fill this gap, this paper adopts a conceptual research approach based on literature review and normative analysis. It analyzes the necessity of enterprise management innovation, identifies the main management problems faced by enterprises, and proposes a multidimensional path framework.

The contribution of this paper is threefold. First, it clarifies the relationship between digital transformation and management innovation from an organizational management perspective. Second, it identifies typical management bottlenecks in enterprise digital transformation. Third, it constructs a practical framework for enterprise management innovation, which can provide guidance for managers and a basis for future empirical research.

The remainder of this paper is organized as follows. Section 2 reviews the related literature and theoretical basis. Section 3 explains the research method and analytical framework. Section 4 analyzes the necessity of management innovation. Section 5 identifies the major management problems. Section 6 proposes the path of enterprise management innovation. Section 7 discusses theoretical and practical implications. Section 8 concludes the paper.

2. Literature Review and Theoretical Basis

2.1. Digital Transformation

Digital transformation is generally considered to be more than digitization or informatization. Digitization mainly refers to converting analog information into digital form, while informatization focuses on using information systems to improve operational efficiency. Digital transformation goes

further by reshaping value creation, organizational processes, and business models. It affects enterprise strategy, organization, operations, marketing, and customer interaction at the same time.

At the strategic level, digital transformation has changed the relationship between business strategy and information technology. Digital technologies are no longer merely supportive tools, but have become embedded in strategic decision-making and value creation activities (Gong & Ribiere, 2020). Therefore, enterprises must treat digital transformation as a strategic and organizational transformation rather than a simple IT project.

2.2. Management Innovation

Management innovation refers to the creation and implementation of new management practices, structures, processes, or techniques that are new to the organization and help achieve organizational objectives. It may include changes in organizational structure, leadership systems, performance evaluation, decision-making processes, incentive mechanisms, and control methods.

Managerial innovation is closely related to organizational change and administrative renewal. In the digital era, this relationship becomes more evident because digital technologies require enterprises to adjust decision-making modes, workflow structures, data-sharing mechanisms, and employee collaboration patterns. Without corresponding management innovation, digital technologies may not produce expected organizational value.

2.3. Dynamic Capability Theory

Dynamic capability theory provides an important theoretical basis for analyzing enterprise management innovation under digital transformation. Dynamic capabilities refer to a firm's ability to integrate, build, and reconfigure internal and external competences in rapidly changing environments. Since digital transformation increases technological uncertainty and market complexity, enterprises need dynamic capabilities to adjust management systems and organizational resources continuously.

In the process of digital transformation, enterprises must sense digital opportunities, seize transformation opportunities, and reconfigure resources and processes. Building dynamic capabilities is therefore an ongoing process of strategic renewal during digital transformation (Warner & Wäger, 2019). From this perspective, management innovation is a key mechanism through which enterprises build and apply dynamic capabilities.

2.4. Research Gap

Existing studies have provided valuable insights into digital transformation, digital business strategy, and organizational capabilities. However, three research gaps remain. First, many studies focus on digital technologies or business model innovation, while management innovation is often discussed in a fragmented way. Second, the connection between digital transformation pressures, enterprise management problems, and innovation paths is not sufficiently integrated. Third, practical guidance on how enterprises can systematically promote management innovation under digital transformation is still limited.

Based on these gaps, this paper develops a multidimensional framework for enterprise management innovation. The framework links digital transformation with managerial cognition, organizational structure, business processes, data governance, talent systems, risk control, and organizational culture.

3. Research Methodology and Analytical Framework

3.1. Research Methodology

This paper adopts a conceptual research method based on literature review and normative analysis. Conceptual research is suitable for clarifying core concepts, integrating existing theoretical insights, and constructing an analytical framework. Since the purpose of this study is to explore the path of management innovation under digital transformation rather than test a specific empirical hypothesis, a conceptual and normative method is appropriate.

The research process includes three steps. First, representative literature on digital transformation, management innovation, organizational change, and dynamic capability is reviewed. Second, major management problems in enterprise digital transformation are summarized according to theoretical logic and practical observations. Third, a multidimensional path framework is proposed to explain how enterprises can promote management innovation.

3.2. Analytical Framework

The analytical logic of this paper follows a progressive structure from digital transformation pressure to management problems, and then to management innovation paths and expected outcomes. Digital transformation creates new pressures on enterprises, including technological change, market uncertainty, customer demand personalization, and data-driven competition. These pressures expose the limitations of traditional management systems, such as rigid hierarchy, fragmented processes, weak data governance, insufficient digital talent, and inadequate risk control.

To respond to these challenges, enterprises need to promote management innovation from multiple dimensions. These dimensions include managerial mindset renewal, organizational structure optimization, business process reengineering, data governance enhancement, talent development and incentive improvement, digital risk control, and innovation-oriented organizational culture. The expected outcomes include higher operational efficiency, stronger organizational resilience, better decision-making quality, and more sustainable competitiveness.

This analytical framework emphasizes that digital transformation should not be treated as a one-dimensional technology project. Instead, it should be regarded as a comprehensive management transformation process. The core logic is that technology creates transformation opportunities, while management innovation determines whether these opportunities can be converted into organizational performance.

4. Necessity of Enterprise Management Innovation under Digital Transformation

4.1. Responding to Environmental Uncertainty

Digital technologies have accelerated changes in market structure, customer behavior, and competitive dynamics. Enterprises face more frequent strategic adjustments and

more complex decision-making situations. Large incumbent firms often need to redesign organizational arrangements and governance mechanisms to navigate digital transformation successfully. Therefore, management innovation is necessary for improving organizational flexibility and responsiveness.

Traditional management systems usually emphasize stability, hierarchy, and procedural control. Although these systems may improve order and predictability, they may also slow down organizational response when the external environment changes rapidly. Through management innovation, enterprises can establish more flexible coordination mechanisms and improve their ability to respond to uncertainty.

4.2. Overcoming the Limits of Traditional Management Models

Traditional enterprise management models are often characterized by functional segmentation, hierarchical authority, and experience-based decision-making. These characteristics may cause communication delays, departmental barriers, and low resource allocation efficiency. Digital transformation strategy requires coordinated changes in technology, organization, and management. This means that enterprises cannot achieve transformation by simply purchasing digital systems.

Management innovation can help enterprises overcome the limitations of traditional models by reducing unnecessary hierarchy, strengthening cross-functional coordination, and promoting data-driven management. It also helps enterprises shift from control-oriented management to empowerment-oriented management, which is more suitable for digital and uncertain environments.

As shown in Table 1, digital management models differ significantly from traditional management models across multiple dimensions, including decision-making basis, organizational structure, communication mode, response speed, and innovation mechanism. This comparison illustrates why management innovation is an indispensable component of digital transformation.

Table 1. Comparison of Traditional Management and Digital Management Models

Dimension	Traditional Management Model	Digital Management Model
Decision-making basis	Experience and intuition	Data-driven analysis
Organizational structure	Hierarchical and functional	Flat and cross-functional
Communication mode	Top-down instruction	Multi-directional collaboration
Response speed	Slow and procedural	Rapid and iterative
Performance evaluation	Result-oriented	Process and data combined
Resource allocation	Planned and centralized	Dynamic and decentralized
Innovation mechanism	Incremental improvement	Continuous innovation

4.3. Realizing the Value of Digital Technology Investment

Many enterprises invest heavily in digital platforms, enterprise resource planning systems, customer relationship management systems, data warehouses, and intelligent equipment. However, technology investment does not automatically generate organizational value. Digital transformation strategies should align technological adoption with broader organizational objectives. If digital tools are embedded in outdated processes and rigid management systems, their value may be limited.

Management innovation provides the institutional conditions for realizing digital technology value. For example, data analytics can support better decisions only when data standards, decision processes, and authority structures are properly designed. Similarly, intelligent manufacturing can improve efficiency only when production processes, performance evaluation, and employee skills are aligned with digital systems (Matarazzo et al., 2021).

4.4. Promoting High-Quality Enterprise Development

Digital transformation is reshaping innovation activities and entrepreneurial processes across organizations. This means that enterprises need not only to improve operational efficiency, but also to enhance innovation capability, organizational learning, and sustainable competitiveness. Management innovation can support high-quality development by improving strategic agility, internal coordination, and resource integration.

In the digital era, enterprise competitiveness increasingly depends on how quickly firms can learn, adapt, and innovate. Management innovation helps enterprises build a learning-oriented and innovation-oriented organizational system, which is essential for long-term development.

5. Major Management Problems Faced by Enterprises during Digital Transformation

Although many enterprises have started digital transformation, their transformation outcomes vary significantly. The main reason is that digital transformation often encounters multiple management problems, including weak digital awareness, rigid organizational structure, fragmented business processes, poor data governance, shortage of digital talent, and inadequate risk control.

5.1. Weak Digital Awareness and Strategic Understanding

Some enterprises still regard digital transformation as a technical task led mainly by the IT department. This narrow understanding makes it difficult to integrate digital transformation into enterprise strategy, organizational design, and performance management. Digital transformation is a deep organizational change process rather than isolated technology application. Therefore, weak digital awareness is one of the primary obstacles to transformation.

When senior managers lack a systematic understanding of digital transformation, transformation projects may be fragmented and short-term oriented. Departments may introduce separate systems according to their own needs, while the enterprise as a whole lacks unified goals and coordination mechanisms.

5.2. Rigid Organizational Structures and Departmental Barriers

Traditional enterprises often adopt hierarchical and function-based organizational structures. Such structures may

create clear responsibilities but may also lead to slow information transmission and poor cross-departmental cooperation. Digital transformation requires more flexible organizational arrangements to support rapid iteration and cross-functional collaboration.

Successful digital transformation depends on an ongoing process of strategic renewal supported by dynamic capabilities. However, rigid organizational structures weaken resource reconfiguration and reduce organizational adaptability. Therefore, organizational structure reform is a key issue in enterprise management innovation.

5.3. Fragmented Business Processes and Data Systems

In many enterprises, digital systems are built separately by different departments, resulting in isolated databases, inconsistent standards, and disconnected processes. This problem reduces the overall efficiency of digital transformation and weakens data-based decision-making. Digital transformation should be understood as a systemic change affecting multiple organizational functions.

Fragmented processes also make it difficult to achieve end-to-end management. For example, sales, production, finance, logistics, and customer service may use different systems and data standards. As a result, managers cannot obtain timely and accurate information about enterprise operations.

5.4. Shortage of Digital and Composite Talent

Digital transformation requires employees who understand both business and technology. However, many enterprises lack composite talent with digital skills, management knowledge, and industry experience. Managerial innovation depends heavily on organizational support and administrative readiness. If enterprises do not establish effective training and incentive systems, digital transformation may lack sufficient implementation capability.

The shortage of talent is not only a recruitment problem but also a management system problem. Enterprises need to create learning mechanisms, career development channels, and incentive systems that encourage employees to acquire digital skills and participate in transformation.

5.5. Inadequate Internal Control and Risk Governance

Digital transformation brings new management risks, including cybersecurity risks, data privacy risks, algorithmic decision-making risks, system dependence, and compliance risks. As digital technologies become embedded in enterprise strategy and operations, technology-related risks also become strategic management issues.

If enterprises focus only on transformation speed and neglect risk control, they may face data leakage, system interruption, regulatory penalties, and reputational damage. Therefore, risk governance must be integrated into the management innovation process.

Table 2 summarizes the five major management problems and their impacts on digital transformation, providing a structured overview of the key challenges that enterprises must address through management innovation.

Table 2. Major Management Problems and Their Manifestations during Digital Transformation

Problem Category	Main Manifestations	Impact on Transformation
Weak digital awareness	IT-department-led projects; lack of strategic integration	Fragmented transformation goals
Rigid organizational structure	Slow information flow; poor cross-departmental cooperation	Weakened resource reconfiguration
Fragmented business processes	Isolated databases; inconsistent data standards	Reduced decision-making quality
Shortage of composite talent	Lack of business-technology integration skills	Insufficient implementation capability
Inadequate risk governance	Cybersecurity gaps; compliance deficiencies	Increased operational and reputational risks

6. Path of Enterprise Management Innovation under Digital Transformation

Based on the above analysis, this paper proposes a multidimensional path for enterprise management innovation. As presented in Table 3, enterprises should promote innovation in managerial mindset, organizational structure, business process, data governance, talent and incentive systems, digital risk control, and organizational culture. Each dimension addresses specific management problems and contributes to distinct expected outcomes.

Table 3. Multidimensional Path Framework for Enterprise Management Innovation

Innovation Dimension	Core Content	Expected Outcome
Managerial mindset renewal	Develop digital awareness and data-driven thinking	Stronger strategic alignment
Organizational structure optimization	Reduce hierarchy; strengthen cross-functional teams	Higher organizational flexibility
Business process reengineering	Integrate end-to-end digital workflows	Improved operational efficiency
Data governance enhancement	Establish unified data standards and authority structures	Better decision-making quality
Talent development and incentive improvement	Build training systems and career development channels	Enhanced implementation capability
Digital risk control	Integrate cybersecurity and compliance into management	Reduced transformation risks
Innovation-oriented organizational culture	Encourage learning, experimentation, and knowledge sharing	Sustained competitive advantage

6.1. Renewing Managerial Mindsets

Management innovation first requires the renewal of managerial thinking. Enterprises should recognize that digital transformation is not only an IT project, but a comprehensive reform of strategy, organization, process, and culture. Management innovation involves the introduction of new

managerial practices and structures to support organizational goals. Therefore, managers should actively develop digital awareness, data-driven thinking, customer orientation, and change leadership.

Senior managers should play a leading role in digital transformation. They need to clarify transformation goals, allocate resources, design governance mechanisms, and communicate transformation value to employees. Middle managers should act as coordinators who connect strategic objectives with operational implementation.

6.2. Optimizing Organizational Structures

Enterprises should optimize organizational structures to support digital transformation. This may include reducing unnecessary hierarchy, establishing cross-functional project teams, creating digital transformation offices, and building platform-based coordination mechanisms. Large firms often need to redesign organizational structures and governance arrangements during digital transformation.

Organizational structure optimization should focus on improving collaboration and flexibility. For example, enterprises can form project teams involving employees from marketing, production, finance, IT, and human resources. Such teams can shorten decision-making chains and improve problem-solving efficiency.

6.3. Reengineering Business Processes

Business process reengineering is an important part of management innovation. Enterprises should not simply digitize existing inefficient processes. Instead, they should redesign processes according to digital logic and customer value. Transformation strategy should include coordinated organizational and process change.

In practice, enterprises can start from core processes such as procurement, production, sales, logistics, finance, and after-sales service. They should identify duplicated links, unclear responsibilities, manual approval bottlenecks, and data discontinuities. Then they can redesign processes based on automation, standardization, and data integration.

6.4. Strengthening Data Governance

Data has become an important production factor and management resource. However, data can create value only when it is accurate, standardized, integrated, and accessible under proper authorization. Data and digital technologies are deeply embedded in enterprise-wide transformation processes. Therefore, data governance is a key foundation of management innovation.

Enterprises should establish unified data standards, clarify data ownership, improve data quality management, and strengthen data security classification. They should also develop data-sharing mechanisms between departments while protecting privacy and compliance requirements. With effective data governance, enterprises can improve forecasting, decision-making, performance evaluation, and risk monitoring.

6.5. Improving Talent Development and Incentive Systems

Digital transformation requires a talent system that supports continuous learning and cross-functional collaboration. Enterprises should improve digital training programs, recruit interdisciplinary talent, and establish incentive mechanisms that encourage employees to participate in transformation. Managerial innovation is influenced by organizational support systems.

Specifically, enterprises can set up digital skills training, internal knowledge-sharing platforms, innovation project rewards, and career development channels for digital talent. Performance appraisal should also include innovation contribution, data application ability, process improvement, and collaboration performance.

6.6. Enhancing Internal Control and Digital Risk Prevention

Enterprises should balance digital innovation with risk control. Digital transformation may increase risks related to data security, privacy protection, system reliability, algorithm use, and regulatory compliance. Digital transformation strategies should align technological adoption with organizational objectives and governance conditions.

To strengthen risk prevention, enterprises should establish cybersecurity management systems, data authorization mechanisms, compliance review procedures, emergency response plans, and digital audit trails. Internal audit and risk control departments should participate in digital transformation projects from the early stage rather than only after problems occur.

6.7. Fostering an Innovation-Oriented Organizational Culture

Management innovation also depends on organizational culture. Enterprises should encourage openness, learning, experimentation, and cross-departmental cooperation. Incumbent firms often need to balance competing organizational concerns when embracing digital innovation. A supportive culture can reduce resistance to change and improve employee participation.

In practice, enterprises can promote an innovation-oriented culture through leadership communication, pilot projects, fault-tolerant mechanisms, knowledge-sharing activities, and recognition of innovative behavior. Culture is not a substitute for systems, but it can strengthen the effectiveness of management systems.

7. Discussion

7.1. Theoretical Implications

This study contributes to the literature by linking digital transformation and management innovation within an integrated framework. Unlike technology-centered views, this paper emphasizes that management innovation is the organizational mechanism through which digital transformation creates value. The study also extends the application of dynamic capability theory by showing that dynamic capabilities can be developed through managerial mindset renewal, organizational restructuring, process reengineering, data governance, talent development, risk control, and cultural support.

7.2. Practical Implications

For enterprise managers, this study suggests that digital transformation should be promoted as a systematic management project. Enterprises should avoid the misunderstanding that transformation can be achieved only through technology investment. Instead, they should coordinate digital strategy with management reform.

First, senior managers should establish a clear digital

transformation strategy and communicate it across the organization. Second, enterprises should optimize organizational structures and reduce departmental barriers. Third, they should redesign business processes and improve data governance. Fourth, they should develop digital talent and establish appropriate incentive mechanisms. Finally, they should strengthen risk control to ensure secure and sustainable transformation.

7.3. Limitations and Future Research

This study is conceptual in nature and does not conduct empirical testing. Future research can use case studies, questionnaires, or quantitative models to examine the relationships proposed in this paper. In addition, future studies can compare management innovation paths across industries, ownership types, firm sizes, and digital maturity stages. Further research may also explore how artificial intelligence, generative AI, and platform ecosystems influence enterprise management innovation.

8. Conclusion

Digital transformation is reshaping enterprise strategy, organization, operation, and value creation. In this context, management innovation has become a necessary condition for enterprises to realize the value of digital technologies. This paper analyzes the necessity and main problems of enterprise management innovation under digital transformation and proposes a multidimensional path framework.

The study finds that enterprises should promote management innovation from seven dimensions: managerial mindset renewal, organizational structure optimization, business process reengineering, data governance enhancement, talent development and incentive improvement, digital risk control, and innovation-oriented organizational culture. These dimensions are interrelated and jointly support the transformation from technology adoption to organizational value creation.

Overall, digital transformation provides enterprises with new technological opportunities, while management innovation determines whether these opportunities can be transformed into sustainable competitiveness. Enterprises should therefore regard management innovation as a core task in the digital era and continuously improve their management systems to support high-quality development.

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