

## Dilemmas, Challenges, and Countermeasures in Digital Governance Talent Cultivation

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**Abstract:** Digital governance talent has become a strategic resource for enterprises seeking resilient growth in an economy shaped by data, platforms, and artificial intelligence. Drawing on digital governance theory and collaborative innovation theory, this paper examines enterprise-oriented talent cultivation through a qualitative review of relevant scholarship and common educational practices. It identifies three connected problems: limited understanding of the transition from digital management to digital governance, a persistent gap between management theory and corporate governance practice, and a mismatch between interdisciplinary knowledge requirements and universities' teaching capacity. In response, the paper proposes a coordinated cultivation framework that updates strategic concepts, reconstructs the knowledge system, and develops integrative capabilities through university-enterprise cooperation, project-based learning, faculty development, and authentic governance scenarios. The analysis suggests that effective programs must combine digital literacy with strategic judgment, cross-functional collaboration, compliance awareness, and ethical responsibility, rather than treating technology training as an isolated curricular component. This framework supports adaptation in changing business environments.

**Keywords:** Digital Governance; Talent Cultivation; Collaborative Innovation; Interdisciplinary Education; University-Enterprise Cooperation

### 1. Introduction

With the deep embedding of digital technologies in enterprise operation and management, a new

generation of digital technologies represented by big data, cloud computing, artificial intelligence, and blockchain is reshaping corporate decision-making mechanisms, organizational structures, business processes, and risk control methods, thereby driving a systematic transformation of corporate governance models [1]. Digital governance has gradually become an important governance form through which enterprises achieve high-quality development, enhance core competitiveness, and respond to complex and uncertain environments. Unlike traditional enterprise management, which emphasizes hierarchical control and experience-based decision-making, digital governance stresses data-driven decision-making and the reconstruction of organizational operating logic through platform-based and networked approaches. Therefore, digital governance talent must not only understand the operating logic of digital technologies, but also possess comprehensive capabilities in corporate governance, strategic management, organizational coordination, compliance, and ethical judgment. In other words, such talent must simultaneously possess the dual capabilities of "governance based on digital technology" and "governance of digital technology" [2].

Existing studies mostly discuss digital governance from the perspectives of macro-level national governance or digital government, while insufficient attention has been paid to enterprise digital governance and talent cultivation at the micro level. Existing research tends to emphasize technical competence or information system construction while neglecting the internal logic of corporate governance structures, organizational behavior, and strategic decision-making. Against this background, it is necessary to shift the research perspective down to the micro level of corporate

governance, systematically analyze the practical dilemmas and key challenges faced in digital governance talent cultivation, and explore practicable cultivation paths. Taking digital governance talent as the research object and digital governance theory and collaborative governance theory as the analytical foundation, this paper examines the dilemmas and challenges in digital governance talent cultivation and proposes corresponding countermeasures, with a view to providing theoretical support and practical implications for building a digital governance talent cultivation system.

## 2. Theoretical Foundations

### 2.1 Digital Governance Theory

The two-way embedding of digital technology and governance systems has made governance issues in the digital era more complex, interest structures more differentiated, and requirements for technological adaptability and digital capabilities more demanding, thereby promoting the transformation of the core competence of digital talent from digital management to digital governance. Compared with digital management, digital governance has evolved, in terms of context, characteristics, functions, and technology, from management to governance, from fragmentation to holism, from ends to means, and from reengineering to empowerment. It has also promoted a shift from process-driven to factor-driven logic, from administrative management to demand-oriented services, and from vertical management to multi-actor participation [3]. Digital governance aims to empower governance systems and governance capacity through digitalization and to construct a new type of governance system. It includes both "digitalization-based governance," namely the process of using digital tools, means, and measures to empower existing governance systems and improve governance effectiveness, and "governance of digitalization," namely innovative governance directed at various complex issues in the digital world. In terms of governance scope, digital governance encompasses macro-level national governance, meso-level industrial governance, and micro-level corporate governance [4]. The global and ubiquitous nature of the digital economy has made the digital characteristics of occupational labor increasingly prominent and extensive.

Cultivating workers with digital skills and digital literacy has therefore become an inevitable requirement for adapting to the high-quality development of China's digital economy [5]. It can thus be seen that, in the new era, digital governance talent must possess a macro strategic vision, solid digital technical literacy, and systematic knowledge of industrial innovation, making the requirements for compound literacy more stringent.

### 2.2 Collaborative Innovation Theory

Collaborative innovation originates from synergetics and represents one of the important modes of innovation [6]. Haken, the founder of synergetics, explained that synergetics studies a complex system composed of a large number of subsystems interacting in complex ways; under certain conditions, nonlinear interactions among subsystems generate synergetic phenomena and synergetic effects, enabling the system to form spatial, temporal, or spatiotemporal self-organizing structures with certain functions [7]. By analyzing the collaborative mechanisms among internal innovation elements of enterprises at the micro level, Tidd proposed the theory of collaborative innovation, thereby effectively integrating synergy theory with innovation theory [8]. The proposition that "the value of an enterprise as a whole may exceed the sum of the values of its parts, and the effectiveness of collaborative innovation partly stems from the benefits brought by economies of scale" reflects the economic significance of collaborative innovation [9].

In the current complex innovation environment, individual enterprises face intense external competition. Rapid technological iteration, frequent product updates, and continuous managerial change have increased the difficulty, input, and risk of enterprise innovation. To achieve optimal system-wide objectives, enterprises invest internal organizational elements, draw on diverse collaborative innovation models, and complete broader and more complex innovation processes through nonlinear organic combinations, thereby realizing larger innovation goals [10]. Digital transformation has created new opportunities for enterprises to enhance collaborative innovation capability. On the one hand, datafication breaks down internal information barriers and promotes the efficient flow and integration of information. On the other hand, the high reusability and low

cost of data elements enable them to generate multiplier effects through collaborative innovation with other elements. Consequently, digital governance can improve the efficiency of enterprise collaborative innovation and help enterprises establish strategic advantages.

### **3. Dilemmas and Challenges in Digital Governance Talent Cultivation**

#### **3.1 Insufficient Cognition of the Shift from Digital Management to Digital Governance**

In enterprise digital transformation, universities and enterprises have not yet developed a profound understanding of the core connotation and strategic value of digital governance, and obvious cognitive deviations remain. Digital transformation is often equated with traditional informatization upgrading or confined to the construction of business systems and the launch of system functions. Work priorities are overly focused on superficial objectives such as business process automation, basic data collection, and quantitative improvement of operational efficiency. This cognition ignores the restructuring effect of digital technology as a disruptive force on governance structures, decision-making mechanisms, and systems of powers and responsibilities. It also fails to recognize that the core of digital governance lies in using digital technology to empower the entire governance process, promote the iteration of management models, and achieve a leap in governance capacity.

Cognitive deviations are further transmitted into the construction and implementation of talent cultivation systems, leading to a serious mismatch between the capability structure of digital governance talent and the actual needs of enterprises. In digital governance talent cultivation practice, there is a widespread tendency to "emphasize technical operation while neglecting governance thinking." Excessive emphasis is placed on talent's proficiency in using digital tools such as data analysis software and business management systems, as well as on explicit skills such as daily operation and maintenance and troubleshooting of existing business systems. These operational skills are even regarded as the core of digital governance capability. In sharp contrast, insufficient attention is paid to the core qualities required for the effective implementation of digital governance, including

systematic governance thinking, whole-process risk identification and prevention awareness, the ability to design and optimize digital rules and institutions, cross-departmental and cross-level collaborative governance capability, and value mining of data assets. A systematic and tiered cultivation mechanism has not yet been established.

The imbalance in talent cultivation described above has produced significant negative effects. On the one hand, it directly constrains the steady advancement of enterprise digital governance, preventing deep integration between digital technology and corporate governance and making it difficult to fully realize the maximum value of empowerment and efficiency enhancement. On the other hand, it keeps enterprise digital transformation lingering at the superficial stage of "technology application," unable to break through the primary bottleneck of "business digitalization," achieve a deeper leap toward "digital governance," or drive the enhancement of core competitiveness and long-term development.

#### **3.2 Disconnection between Management Theory and Corporate Governance Practice**

In the current complex innovation environment, individual enterprises face intense external competition, including rapid technological iteration, frequent product updates, and continuous managerial change. As a result, the fit between existing management theories and real management needs has become increasingly insufficient. Past management theories were mostly formed in relatively stable market environments and emphasized standardized and process-oriented management logic. However, contemporary enterprises operate in dynamic, changeable, and highly uncertain development scenarios. Core contents of traditional theory, such as organizational management, resource allocation, and risk control, can no longer precisely address enterprises' decision-making dilemmas during technological iteration, coordination challenges during product updates, or implementation resistance during managerial change.

It is particularly important to note that, with the deepening advancement of information technology, the technological revolution centered on digitalization and intelligence has become a key force reshaping industrial structures. Digital governance has gradually

shifted from an "optional item" to a "mandatory item," becoming deeply integrated into enterprise strategic planning, daily operations, risk prevention and control, and other management processes. However, textbooks, as the core carriers for the inheritance and dissemination of management theory, still largely build their content systems on mature classical management theories. Whether in principles of management, organizational behavior, or strategic management, the core frameworks and viewpoints are centered on management practices from the industrial era or the early stage of the information revolution, with insufficient attention to the new digital governance dilemmas faced by enterprises in the digital economy era. Specifically, existing textbooks neither sufficiently cover practical issues such as organizational digital restructuring, data asset control, and cross-departmental digital coordination barriers during enterprise digital transformation, nor do they deeply analyze management decision-making logic, talent cultivation requirements, and risk prevention and control mechanisms in the context of digital governance. The lag of textbook content has caused a serious disconnection between the management problems discussed in textbooks and the digital governance challenges actually faced by enterprises, making it difficult for such content to be effectively implemented in real enterprise management practice. The new contradictions and problems encountered by enterprises in advancing digital governance often lack corresponding theoretical support and solutions in textbooks, revealing a pronounced phenomenon of theoretical lag. Traditional management textbooks and teaching content can no longer meet the practical needs of enterprise digital transformation and high-quality development, and to some extent they even constrain the coordinated advancement of management talent cultivation and enterprise management improvement.

### **3.3 Contradiction between Interdisciplinary Knowledge Demand and Insufficient Educational Capacity**

Enterprise digital governance is not a simple extension of a single field, but a highly complex systematic project. Its effective advancement depends on the deep integration and collaborative support of knowledge from

multiple fields. It requires corporate governance theory as the foundation to clarify the core governance framework and the boundaries of rights and responsibilities; strategic management thinking as guidance to ensure that the governance direction aligns with enterprises' long-term goals; data science and information systems knowledge as technical support to build a stable and efficient technological foundation; and solid data analysis capability as a guarantee, covering key links such as data collection, data modeling, and data analysis. Only through the organic integration of knowledge from multiple fields can a complete digital governance capability system be constructed to effectively address the various complex challenges in enterprise digital transformation.

However, the current talent cultivation system in universities finds it difficult to adapt to this demand for interdisciplinary integration. Existing curriculum design is still generally based on traditional disciplinary divisions, with relatively rigid disciplinary barriers and a serious lack of curricular coordination and cross-disciplinary integration among different majors. For example, management-related majors often focus on the teaching of theoretical knowledge such as corporate governance and strategic management, but lack systematic coverage of technical knowledge such as data science and information systems. In contrast, computer science and data science majors place excessive emphasis on the cultivation of technical skills, with little attention to corporate governance logic, strategic management thinking, and related content. More importantly, the supply of compound faculty is seriously insufficient. There are only a limited number of teachers who are simultaneously proficient in management theory and digital technology and who possess interdisciplinary teaching capabilities, making it difficult to support the development and delivery of interdisciplinary integrated courses. The dual shortcomings in curriculum design and faculty supply directly lead to insufficient university capacity for interdisciplinary education, preventing the systematic cultivation of digital governance talent with the ability to integrate knowledge across multiple fields. As a result, enterprises' high-level and comprehensive demand for interdisciplinary knowledge cannot be adequately met, further intensifying the imbalance between supply and demand for digital governance talent.

#### **4. Countermeasures for Digital Governance Talent Cultivation**

##### **4.1 Innovation of strategic Concepts for Digital Governance**

Cultivating digital governance talent with strategic vision and collaborative thinking is the core key to ensuring the effective implementation of enterprise digital governance. Digital governance is not an isolated technical application or management link, but a strategic initiative that runs through the entire life cycle of enterprise development. This requires digital governance talent to possess forward-looking strategic vision. Such strategic vision is not merely a general awareness of the overall situation, but the ability to deeply understand the internal relationship between digital technology and enterprise strategy, accurately grasp the trend of industrial digitalization, and plan the direction, objectives, and path of digital governance from the perspective of long-term enterprise development. Only in this way can digital governance avoid falling into the fragmented dilemma of "treating the head when the head aches and treating the foot when the foot hurts," ensure that digital governance initiatives resonate with the enterprise's core strategy, provide strong digital support for strategy implementation, and truly become a strategic engine driving the enhancement of core competitiveness. Collaborative thinking is also an indispensable core quality for digital governance talent. The core logic of digital governance lies in breaking through information barriers among departments and links within enterprises through data, thereby realizing the optimal allocation of resources and the maximized release of value. This process depends on efficient collaboration and linkage. Digital governance talent must possess mature collaborative thinking, take the initiative to break down departmental barriers and departmentalism under traditional organizational structures, and lead the construction of cross-departmental and cross-level collaborative innovation mechanisms. With data governance as the core link, they should integrate unified data standards, data sharing and circulation, and data value mining throughout the entire process of collaborative innovation, coordinate resources and strengths in different fields such as business, technology, and management, and promote all

departments to work together around common strategic objectives. Through this collaborative innovation model, the potential of various elements such as data, technology, and talent can be fully activated, the precise matching and efficient utilization of factor resources can be realized, and the collaborative value of each element can be maximized. In turn, the overall effectiveness of enterprise digital governance can be enhanced, and digital transformation can move from "single-point breakthroughs" to "overall advancement."

##### **4.2 Reconstruction of the Digital Governance Knowledge System**

The cultivation of digital governance talent must closely align with the actual needs of enterprises and differs significantly from the traditional model of disciplinary division. In cultivating enterprise digital governance talent, particular emphasis should be placed on the cross-integration of the knowledge system by organically integrating corporate governance theory, strategic management knowledge, data science methods, and information systems principles. Corporate governance theory provides the basis for enterprise decision-making structures and operational norms; strategic management knowledge helps enterprises clarify development directions and competitive strategies; data science methods are used to mine and analyze the value behind data; and information systems principles lay the foundation for enterprise informatization construction and operation. Universities can establish long-term and stable cooperation mechanisms with enterprises, research institutions, and other organizations to jointly design curricula and training modules specifically oriented toward enterprise digital governance. Such courses should not be limited to explanations at the level of technical operation or the simple teaching of management theory. Instead, they should closely center on real governance issues faced by enterprises, such as data security management and digital transformation of business processes, and guide learners to gradually build a systematic cognitive framework during the learning process. Through the reconstruction of the knowledge system, compound talent can be cultivated who both deeply understand the logic of corporate governance and skillfully master the principles of digital technology. Such talent will

understand how enterprises make decisions and coordinate the interests of different parties, while also being able to use digital technology to optimize processes and improve efficiency, thereby providing strong support for enterprise development in the digital era.

### **4.3 Cultivation of Integrative Capabilities for Digital Governance**

The current field of digital governance is characterized by complex interdisciplinary knowledge systems and high requirements for practical ability, posing severe challenges to existing education systems in talent cultivation. Faced with the prominent contradiction between the professional knowledge structure required for digital governance and educational capacity, systematic reform is urgently needed from the two dimensions of faculty development and cultivation model innovation. On the one hand, faculty team building must be treated as a core breakthrough point, and teachers' compound professional theoretical level and interdisciplinary teaching capability in the field of digital governance must be comprehensively improved. Through specialized training, academic exchanges, enterprise practice, and other channels, a sound teacher development support system should be systematically constructed to help teachers deeply understand the frontier theories and practical requirements of digital governance, while strengthening their dual capabilities in research innovation and teaching transformation. This will fundamentally ensure the quality of teaching supply and dynamically match faculty professionalism with the knowledge needs brought about by the rapid development of digital governance. On the other hand, the current single cultivation mode dominated by classroom lecturing must be thoroughly changed, and diversified cultivation models such as project-based teaching, simulation of real governance scenarios, in-depth analysis of typical cases, and interactive seminars should be actively explored. Through these innovative teaching approaches, an immersive and open practical cultivation platform can be built for digital governance talent, enabling them to effectively develop core abilities such as interdisciplinary knowledge integration and application and complex problem identification in governance environments close to reality. This will promote the transformation of theoretical knowledge into

practical skills and ultimately cultivate compound and application-oriented professionals who meet the development needs of digital governance.

### **5. Conclusion**

The two-way embedding and deep interaction between digital technology and governance systems have made governance issues in the digital era more complex and promoted the transformation of the core competence of digital talent from digital management to digital governance. The cultivation of enterprise digital governance talent faces multiple dilemmas and challenges, including insufficient cognition of the shift from digital management to digital governance, disconnection between management theory and corporate governance practice, and the contradiction between interdisciplinary knowledge demand and insufficient educational capacity. Based on the practical dilemmas and challenges in enterprise digital governance talent cultivation, this study sorts out the "causes" of the problem and proposes future countermeasures for digital governance talent cultivation from three aspects: innovation of strategic concepts, reconstruction of the knowledge system, and cultivation of integrative capabilities. It thereby provides a theoretical solution for better promoting the comprehensive empowerment of corporate governance by digital technology. Future efforts in digital governance talent cultivation should also be strengthened in the following two respects. On the one hand, the comprehensive competence of faculty teams should be improved, and an outstanding team of digital governance teachers should be established. On the other hand, the government should provide a series of support measures for digital governance talent cultivation and encourage social forces to participate in talent cultivation.

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