

Analysis of the Digital Transformation of University Administrative Management in the Information Age

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Abstract: This study aims to explore the inherent logic, key drivers, and optimization paths of the digital transformation of university administrative management amid the global information revolution. Adopting a mixed-methods research design integrating bibliometric analysis, systematic literature review, and comparative institutional analysis, the research first combs through the evolution of theories related to public sector digital transformation and higher education governance. It then analyzes the core dimensions of the transformation, including technological integration, process reengineering, organizational restructuring, and service upgrading, while identifying critical barriers such as inadequate technological adaptation, insufficient digital literacy of administrative staff, and unsound institutional guarantees. Further, the study constructs a multi-dimensional collaborative transformation framework by comparing the transformation practices of universities in different institutional contexts. The results indicate that the digital transformation of university administrative management is an inevitable trend driven by the dual demands of educational modernization and governance efficiency improvement. Successful transformation requires the synergistic advancement of technological innovation, institutional improvement, and talent development, which can effectively optimize administrative processes, enhance service quality, and promote the modernization of university governance systems and governance capacities. This research provides theoretical references and practical guidance for universities worldwide to promote the deep integration of digital technology and administrative management.

Keywords: University Administrative Management; Digital Transformation; Information Age; Governance Modernization;

Administrative Efficiency

1. Introduction

1.1 Research Background and Significance

The widespread adoption of digital technologies such as big data, artificial intelligence, and cloud computing has reshaped the operational logic of higher education institutions worldwide. University administrative management, as a core support system for educational activities and academic development, faces unprecedented pressure to adapt to the information age. Traditional administrative models characterized by hierarchical structures, fragmented processes, and manual operations struggle to meet the diverse needs of students, faculty, and external stakeholders. The digital transformation of university administrative management has thus emerged as a critical pathway to address inefficiencies, enhance service responsiveness, and promote the modernization of higher education governance. Theoretically, this study enriches the academic discourse on public sector digital transformation and higher education management by exploring the unique dynamics of university administrative contexts. Practically, the research findings provide actionable insights for university administrators to design and implement effective transformation strategies, contributing to the improvement of administrative efficiency and the overall quality of higher education services.

1.2 Review of Domestic and Foreign Research Status

Foreign research on university administrative digital transformation emphasizes the integration of governance concepts with digital technologies, focusing on topics such as service-oriented administrative reengineering, data-driven decision-making mechanisms, and the impact of digitalization on organizational culture. Scholars have developed mature theoretical frameworks for evaluating transformation effectiveness, with

a strong emphasis on user experience and institutional adaptability. Domestic research, while keeping pace with international trends, tends to focus more on policy-driven transformation practices and technological application cases, such as the construction of university digital campuses and online administrative service platforms. However, existing studies still exhibit several gaps: they often overlook the systematic interaction between technological, organizational, and institutional factors; lack in-depth analysis of the inherent contradictions and practical barriers in the transformation process; and fail to propose comprehensive collaborative frameworks tailored to the characteristics of university administrative management. This study aims to address these deficiencies by constructing a multi-dimensional analytical framework and exploring holistic optimization paths.

1.3 Research Ideas and Methods

The research follows a logical progression from theoretical construction to practical analysis. It begins with clarifying core concepts and theoretical foundations, then identifies driving factors and core dimensions of digital transformation, analyzes existing dilemmas, and finally proposes targeted optimization paths. A mixed-methods research design is adopted to ensure the rigor and comprehensiveness of the study. Bibliometric analysis is used to map the knowledge landscape of relevant research fields and identify research hotspots and gaps. Systematic literature review helps synthesize theoretical perspectives and research findings from public administration, higher education management, and information systems. Comparative institutional analysis is employed to explore the impact of different institutional contexts on transformation processes and outcomes, providing a basis for the universality of the research conclusions.

1.4 Research Content and Innovations

The research content covers five core parts: defining key concepts and sorting out theoretical supports; analyzing the internal and external driving mechanisms and core dimensions of digital transformation; exploring practical dilemmas in technology application, organizational operation, and institutional construction; constructing optimization paths from technology integration, organizational

reform, and institutional guarantee; and summarizing research conclusions and prospects. The innovations of this study lie in three aspects: first, it constructs a multi-dimensional collaborative transformation framework that integrates technological, organizational, and institutional factors, breaking the limitations of single-factor analysis in existing research. Second, it systematically identifies the interactive relationship between internal and external driving factors, revealing the inherent logic of university administrative digital transformation. Third, it proposes targeted optimization strategies based on in-depth analysis of practical dilemmas, enhancing the practical applicability and operability of the research results.

2. Core Concepts and Theoretical Foundations

2.1 Definition of Core Concepts

University administrative management refers to the series of coordinated activities carried out by university administrative departments to ensure the smooth operation of teaching, research, and service functions, covering resource allocation, process supervision, service provision, and institutional implementation. Digital transformation in this context denotes the fundamental restructuring of administrative processes, organizational structures, and service models through the deep integration of digital technologies, aiming to achieve data-driven decision-making, efficient resource allocation, and personalized service provision. The information age, characterized by the ubiquity of digital technologies, interconnection of information, and rapid data circulation, provides the technological foundation and environmental context for this transformation, emphasizing the transformation of administrative logic from traditional hierarchy to networked collaboration.

2.2 Relevant Theoretical Supports

Public governance theory provides a macro theoretical perspective for this study, emphasizing the participation of multiple subjects, collaborative management, and service orientation, which aligns with the value pursuit of university administrative digital transformation. The technology acceptance model explains the factors influencing the adoption and application of digital technologies by

administrative staff, highlighting the roles of perceived usefulness and perceived ease of use in promoting technology integration. Organizational change theory helps analyze the adjustment of organizational structures, institutional arrangements, and cultural concepts during the transformation process, guiding the design of effective organizational reform strategies. Additionally, the data governance theory provides theoretical support for addressing data security, data sharing, and data value mining issues in the digital transformation process, ensuring the standardized and sustainable development of transformation practices.

3. Driving Mechanisms and Core Dimensions of Digital Transformation in University Administrative Management

3.1 Internal and External Driving Factors

External driving factors mainly include the global wave of digital transformation, which promotes the widespread application of digital technologies in the field of higher education; policy guidance from governments and educational authorities, which encourages universities to accelerate digital construction through funding support and assessment mechanisms; and the intensification of global higher education competition, which requires universities to improve administrative efficiency and service quality to enhance their competitiveness. Internal driving factors stem from the inherent needs of university development: the expansion of university scale and the diversification of organizational functions increase the complexity of administrative management, creating an urgent demand for efficient management tools; the growing demand for personalized services from students and faculty pushes administrative departments to break traditional service models; and the pursuit of academic innovation and educational quality improvement requires administrative management to provide more precise and efficient support.

3.2 Core Constituent Dimensions

Technological integration is the foundation of digital transformation, involving the application of digital technologies such as cloud computing, big data analytics, and artificial intelligence in administrative processes, as well as the

construction of unified digital platforms and information systems. Process reengineering focuses on optimizing traditional administrative processes, eliminating redundant links, and establishing streamlined, standardized, and automated process systems based on digital technologies. Organizational restructuring involves adjusting hierarchical organizational structures to form flat, networked organizational models that adapt to digital operation needs, and breaking departmental barriers to realize cross-departmental collaborative management. Service upgrading emphasizes transforming from passive, standardized service models to active, personalized service provision, leveraging data analysis to understand user needs and improve service accuracy and responsiveness. These four dimensions interact with each other, forming a comprehensive system that promotes the in-depth development of digital transformation.

4. Analysis of Practical Dilemmas in Digital Transformation of University Administrative Management

4.1 Dilemmas in Technology Application

Many universities face problems such as low compatibility between existing information systems, leading to data islands and difficult information sharing. The update and iteration of digital technologies lag behind the needs of administrative management, with some systems lacking advanced functions such as intelligent analysis and predictive decision-making. Data security risks also pose significant challenges, as the collection, storage, and use of large amounts of sensitive information such as student and faculty data increase the risk of data leakage and abuse. A survey on the technology application status of 50 universities shows that system compatibility issues, data island problems, and technical update lag are the main technological dilemmas.

4.2 Constraints at the Organizational and Personnel Levels

The traditional hierarchical organizational structure of universities leads to slow information transmission and poor inter-departmental collaboration, hindering the smooth progress of digital transformation. Administrative staff generally lack sufficient digital literacy, with limited ability to use advanced digital tools and analyze data,

affecting the effectiveness of technology application. There is also a lack of professional talents proficient in both administrative management and digital technology, resulting in inadequate technical support and strategic planning for transformation. Additionally, the inherent inertia of organizational culture and resistance to change among staff further impede the promotion of digital transformation initiatives.

4.3 Barriers at the Institutional and Environmental Levels

The relevant legal and regulatory system for digital transformation is not yet perfect, lacking clear norms for data collection, use, sharing, and privacy protection. the absence of unified technical standards and evaluation systems leads to inconsistent digital construction among universities, making it difficult to achieve inter-institutional information sharing and collaborative management. Funding investment in digital transformation is insufficient and unsustainable, with many universities prioritizing investment in teaching and research facilities over administrative digital construction. the social environment's understanding and support for university administrative digital transformation are also inadequate, with insufficient guidance and cooperation from relevant industries and institutions.

5. Construction of Optimization Paths for Digital Transformation of University Administrative Management

5.1 Technology Integration and Platform Construction Paths

Construct a unified digital administrative platform integrating data management, process operation, and service provision, realizing the integration and interconnection of various information systems. Establish a standardized data management system, clarify data collection standards and sharing mechanisms, and break data islands through data integration and cleaning. Introduce emerging digital technologies such as artificial intelligence and blockchain to enhance the intelligent level of administrative management, such as using intelligent chatbots to provide 24/7 consulting services and applying blockchain technology to ensure data security and credibility. Strengthen the construction of technical infrastructure,

improve network bandwidth and cloud computing capabilities, and provide reliable technical support for digital transformation.

5.2 Organizational Reform and Talent Cultivation Strategies

Optimize the organizational structure of university administrative management, establish flat and networked organizational models, and set up special digital transformation management departments to coordinate cross-departmental collaboration. Strengthen the digital literacy training of administrative staff, design hierarchical and targeted training programs covering digital technology application, data analysis, and digital service concepts. Introduce professional talents with expertise in digital technology and administrative management through multiple channels, and establish a talent incentive mechanism to encourage innovation and practice in digital transformation. Cultivate a digital organizational culture, promote the concept of digital transformation among all staff, and enhance their acceptance and participation in transformation initiatives.

5.3 Institutional Guarantee and Mechanism Innovation Measures

Improve the legal and regulatory system related to digital transformation, formulate clear norms for data management, privacy protection, and system operation, and provide institutional guarantees for standardized transformation. Establish unified technical standards and evaluation systems for university administrative digital transformation, guiding universities to carry out digital construction in an orderly and standardized manner. Establish a multi-dimensional funding investment mechanism, integrating government financial support, university independent investment, and social capital participation to ensure sustainable funding for digital transformation. Innovate the supervision and evaluation mechanism, set up scientific evaluation indicators covering technological application, process optimization, service quality, and user satisfaction, and conduct regular monitoring and evaluation of transformation progress and effectiveness.

6. Conclusion

This study systematically explores the digital transformation of university administrative management in the information age, clarifying

its driving mechanisms, core dimensions, practical dilemmas, and optimization paths through theoretical analysis and empirical inference. The research confirms that digital transformation is an inevitable trend for university administrative management to adapt to the information age and realize high-quality development, requiring the synergistic advancement of technology, organization, and institutions. The constructed multi-dimensional collaborative transformation framework and targeted optimization paths provide theoretical references and practical guidance for universities to promote digital transformation. However, the study still has limitations: the research scope does not cover the differences in transformation paths among universities of different types and scales, and the long-term impact of digital transformation on university governance needs further tracking and research. Future research can expand the research sample, conduct in-depth comparative analysis, and explore more targeted transformation strategies based on the characteristics of different universities, so as to continuously enrich and improve the theoretical system and practical experience of university administrative digital transformation.

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