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Research on Optimization Strategy of Enterprise Cost Management under Digital Transformation

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Abstract. With the rapid iteration of big data, machine learning, and generative artificial intelligence technologies, traditional enterprise management models, which rely on manual experience, hierarchical supervision, and static data analysis, are gradually unable to adapt to the dynamic, personalized, and high-efficiency market competition environment. AI technology, with its advantages of autonomous learning, intelligent prediction, high-speed computing, and scenario-based decision-making, comprehensively penetrates enterprise organizational management, human resource management, financial management, operational management, and strategic management. It fundamentally optimizes enterprise resource allocation, improves operational efficiency, and promotes the innovative upgrading of management logic. However, while AI empowers enterprise management, it also creates practical challenges, including pressure for organizational restructuring, mismatches in employee competencies, data security risks, and ethical dilemmas in management. Drawing on authoritative research in China and abroad as well as enterprise digital transformation case studies, this paper systematically analyzes the positive impact of AI on modern enterprise management, sorts out the key difficulties in the current intelligent management transformation process, and proposes targeted optimization strategies. The research aims to provide a theoretical reference and practical guidance for enterprises to realize intelligent, refined, and modern management in the AI era.

Keywords: Artificial Intelligence, Enterprise Management, Digital Transformation, Organizational Reform, Intelligent Operation

1. Introduction

In the context of the global digital economy, artificial intelligence has become a key strategic technology leading industrial reform and organizational innovation. According to research published in Administrative Sciences, artificial intelligence is profoundly changing workplace practices, organizational culture, and management paradigms in modern enterprises, and the intelligent transformation of enterprise management has become an irreversible industry trend [1]. Different from traditional information technology tools that only realize data statistics and simple auxiliary office work, modern AI technologies represented by machine learning algorithms, predictive analysis models and large language models can realize automatic identification of management

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problems, intelligent prediction of operational risks, dynamic optimization of resource allocation and intelligent assistance of strategic decision-making [2].

Traditional enterprise management is a closed-loop management mode centered on manual supervision and hierarchical management, with obvious limitations such as lagging decision-making, high management cost, low resource utilization rate and strong subjectivity of management behavior [3]. In the current complex and changeable market environment, enterprises face massive market data, diversified consumer demands and intensified industrial competition, and the experience-based management model can no longer support the high-quality development of enterprises. The integration of AI and enterprise management overcomes the temporal and spatial limitations of traditional management, transforms enterprise management from experience-driven to data- and intelligence-driven, and greatly improves the scientific rigor, accuracy, and efficiency of management decisions [4]. At the same time, many enterprises still face many obstacles in the process of intelligent management transformation. Problems such as insufficient enterprise digital infrastructure, insufficient professional AI management talents, rigid organizational management systems, and imperfect data security supervision mechanisms restrict the deep application of AI in enterprise management [5]. Therefore, on the basis of clarifying the empowering value of AI to enterprise management, it is necessary to objectively analyze existing challenges and formulate feasible optimization strategies, so as to help enterprises upgrade their management and gain core competitive advantages in the digital era.

This paper systematically analyzes the positive impact of AI on modern enterprise management and identifies key issues and difficulties in the current intelligent management transformation.

2. The positive impact of artificial intelligence on modern enterprise management

2.1. Optimizing organizational structure and management efficiency

Traditional enterprise organizations mostly adopt vertical hierarchical structures with multiple management levels, which leads to long information transmission chains, serious information distortion and low organizational operation efficiency. AI technology promotes the flattening and networking transformation of enterprise organizational structures [6]. Intelligent office systems and automated process management platforms can replace repetitive manual supervision and information transmission work, reduce redundant middle management links, and realize direct information interaction between enterprise decision-making layers, executive layers and grassroots employees.

Research shows that AI-enabled flat organizational management can shorten enterprise decision-making cycles by 30%–50% and significantly reduce internal management costs [7]. At the same time, AI-based employee profiling and team-matching algorithms can enable precise division of labor and dynamic team scheduling based on employee competencies, job skills and work performance, effectively solving the problems of unreasonable human resource allocation and low team collaboration efficiency in traditional management. This organizational innovation completely changes the rigid management mode of traditional enterprises and builds an efficient, flexible and adaptive modern organizational management system.

2.2. Innovating human resource management mode

Human resource management is a core component of internal enterprise management, covering recruitment screening, employee training, performance appraisal, and talent incentives. Traditional human resource management relies on manual screening and subjective evaluation, which has

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problems such as low efficiency and strong subjectivity [8]. The application of AI technology realizes the intelligent upgrading of the whole process of human resource management.

In terms of talent recruitment, AI resume screening algorithms can quickly screen massive resumes, accurately match candidate skills with job requirements, eliminate human subjective bias, and improve recruitment efficiency and accuracy. In terms of employee training, large language models can build personalized training systems according to employee post characteristics and ability deficiencies, realize customized learning and real-time skill assessment, and improve the effect of enterprise talent training [9]. In terms of performance management, AI can automatically collect employee work data, establish scientific performance evaluation models, realize objective and quantitative performance assessment, and provide accurate data support for enterprise talent incentive, promotion and elimination.

2.3. Realizing intelligent financial and operational risk management

Financial management and operational risk control are the key guarantees for the stable operation of enterprises. Traditional financial management relies on manual bookkeeping and regular auditing, which is prone to human error and cannot provide real-time risk warnings [10]. AI financial management systems based on big data analysis can realize automatic accounting, intelligent reimbursement, real-time financial data monitoring and dynamic capital scheduling.

More importantly, AI predictive algorithms can mine potential operational risks through massive enterprise operation data, realize early warning of financial risks, supply chain risks and market fluctuation risks, and help enterprises take preventive measures in advance [7]. Different from the post-event supervision mode of traditional management, AI realizes pre-prediction, in-process monitoring and post-analysis full-cycle risk management, which greatly improves an enterprise's ability to withstand operational risks and ensures stable, sustainable business operations.

2.4. Promoting data-driven strategic decision-making

Enterprise strategic management determines the long-term development direction of the enterprise. Traditional strategic decisions are often influenced by managers' personal experience and subjective judgment, resulting in high uncertainty [11]. AI technology has powerful data mining and analysis capabilities, which can integrate internal operation data and external market data, consumer demand data and industry competition data of enterprises, build scientific decision-making models, and provide accurate data support for enterprise market positioning, product innovation and strategic layout.

Under the AI management model, enterprise strategic decisions no longer rely on subjective speculation but on objective data analysis results, which effectively reduces decision-making risks and improves the scientificity and forward-looking of enterprise development strategies [4]. This fundamental change has completely subverted the traditional experience-based strategic management mode and helped enterprises adapt to the rapidly changing market environment.

3. Challenges of artificial intelligence in enterprise management application

3.1. Rigid organizational system and resistance to management reform

The long-term hierarchical management model has formed solid organizational inertia for most traditional enterprises. The intelligent transformation of management requires enterprises to

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dismantle the original management system, adjust organizational structures, and change management processes, which inevitably affects established interests and triggers internal resistance to reform [2]. Middle managers worry that intelligent systems will replace management functions and reduce management authority, while grassroots employees worry that intelligent technology will replace basic posts, resulting in widespread resistance to intelligent transformation within enterprises. At the same time, the rigid management system of traditional enterprises is difficult to adapt to the flexible and intelligent operation mode, which restricts the deep application of AI technology.

3.2. Insufficient professional compound talents

AI intelligent management is a cross-disciplinary work involving artificial intelligence technology, enterprise management, data analysis and other fields, which requires compound talents who are familiar with both enterprise management business and AI technology [8]. At present, most managers lack adequate AI literacy and data analysis skills, while technical personnel lack systematic management thinking. This serious shortage of interdisciplinary talent prevents enterprises from fully leveraging AI's technical advantages; most intelligent management systems are used only in shallow scenarios and fail to empower management in depth.

3.3. Data security and privacy management risks

The application of AI management is based on massive enterprise operation data, employee personal information and user consumer data. In the process of data collection, storage, analysis and application, there are potential risks such as data leakage, data tampering and illegal data use [12]. At present, many enterprises have imperfect data security management systems, lack professional data supervision mechanisms and technical protection measures, and cannot effectively prevent data security risks. In addition, the intelligent evaluation algorithm of AI may involve employee privacy and user privacy, which brings ethical dilemmas and management risks to enterprise human resource management and customer management.

3.4. Algorithm dependence and management subjectivity loss

Excessive reliance on AI algorithms and intelligent decision-making systems will lead to the loss of human subjectivity in enterprise management [9]. AI decision-making is based on existing data and fixed algorithms, lacking human flexible thinking, emotional judgment and crisis response capabilities. In the face of unexpected market changes, complex interpersonal management and emergency crisis events, single algorithm decision-making is prone to rigidity and one-sidedness. Excessive dependence on intelligent systems will make enterprise managers lose their independent judgment and management ability, which is not conducive to the long-term development of enterprise management capabilities.

4. Optimization strategies for AI empowering modern enterprise management

4.1. Promote organizational system reform and resolve reform resistance

Enterprises should take intelligent transformation as the core, actively promote the reform of organizational management system, break the rigid hierarchical management model, and build a flat, flexible and intelligent modern organizational system [7]. Enterprises should strengthen internal

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communication and training, help employees understand the value of intelligent transformation, alleviate their fear of technological replacement, and guide them to adapt actively to new management models. At the same time, establish a matching intelligent management assessment mechanism and incentive system, link intelligent transformation results with department performance and employee rewards, and mobilize the internal initiative of organizational reform.

4.2. Build a compound talent training and introduction system

Enterprises should attach importance to the construction of intelligent management talent teams and build a dual talent training system of internal training and external introduction [3]. For internal employees, carry out regular AI literacy training, data analysis training and intelligent system operation training, improve the digital management capabilities of existing management personnel. For external introduction, focus on attracting interdisciplinary talent with expertise in both AI technology and enterprise management, and build a professional intelligent management operations team. In addition, establish long-term school-enterprise cooperation mechanisms with universities and scientific research institutions to reserve high-quality talents for enterprise intelligent transformation.

4.3. Improve data security and intelligent supervision mechanism

Enterprises should establish a perfect data security management system, clarify the standards of data collection, use and storage, and formulate standardized data management processes [10]. They should deploy professional data security technologies and firewall systems to prevent data leakage and tampering. At the same time, they should build an AI algorithm supervision mechanism, conduct regular audit and optimization of intelligent evaluation algorithms and decision-making algorithms, avoid algorithm discrimination and ethical risks, and balance the efficiency of intelligent management and the security of privacy information. Government departments should also improve relevant laws and regulations to provide institutional guarantees for enterprise data security management.

4.4. Adhere to human-machine collaborative management and maintain management subjectivity

Enterprises should establish a human-machine collaborative intelligent management model, clarify the division of labor between AI systems and human management [9]. AI technology is responsible for repetitive data statistics, risk monitoring, routine decision-making assistance and other mechanical work to improve management efficiency. Human managers are responsible for strategic decision-making, emotional management, emergency crisis handling and innovative management work that requires flexible thinking. They should maintain the central role of human management, avoid excessive dependence on algorithms, and realize the organic integration of intelligent technology advantages and human management wisdom.

5. Conclusion

This paper synthesizes the positive impacts, practical challenges and corresponding countermeasures of artificial-intelligence applications within modern enterprise management. Artificial intelligence facilitates organizational flattening, optimizes human-resource workflows, enables full-cycle risk control, and supports data-driven strategic decision-making to upgrade overall management

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efficiency. Nevertheless, its implementation is hindered by organizational inertia, shortages of interdisciplinary talent, data privacy risks, and the potential erosion of human managerial subjectivity caused by overreliance on algorithms. To address these bottlenecks, enterprises need to advance institutional reform to mitigate internal resistance, develop composite-talent pipelines, strengthen data security and algorithm supervision, and implement human-machine collaborative governance that preserves human managerial agency. Future enterprise digital transformation should avoid blind technological substitution; instead, it should combine algorithmic strengths with human judgment to unlock AI's potential for sustainable enterprise development.

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