Research on the Change of Enterprise Strategy Management Mode Empowered by Artificial Intelligence

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Abstract: With the rapid progress of a new generation of information technology, such as artificial intelligence, the traditional management model has been difficult to meet the higher needs of modern enterprises in digital transformation and upgrading, updating and iterative development, and so on, so the financial transformation and change is imperative. Artificial intelligence through data-driven, intelligent optimization and agile implementation, for enterprise strategic decision-making, resource allocation and feedback mechanism provides a new technical support and implementation path. The application of AI is also accompanied by challenges such as technical complexity, data security and ethical issues. The purpose of this paper is to discuss the innovation path and practice cases of enterprise strategy management mode empowered by AI, summarize its role in improving enterprise decision-making efficiency and resource utilization, and analyze the obstacles and coping strategies that may be faced in the process of technology implementation. Artificial intelligence has great potential in enabling enterprise strategic management, but the integration of technology and management needs to be balanced in order to realize sustainable management mode innovation.

1. Introduction

Artificial intelligence, as an important engine of current technological development, is rapidly changing the global economy and the way businesses operate. In the practical exploration, after many visits and research and industry exchanges, it is most important to actively pilot the practice and establish a system suitable for the enterprise itself[1]. With powerful data analysis capabilities, intelligent prediction technology and resource optimization advantages, artificial intelligence gradually penetrates into all aspects of enterprise strategic management, injecting new vitality into the traditional management model. Especially in terms of improving decision-making efficiency, enhancing execution capability and optimizing the use of resources, AI has shown unprecedented potential, providing strong technical support for enterprises to cope with the complex and changing market environment[2].

The application of AI in strategic enterprise management also faces many challenges. The complexity of the technology and the cost of implementation may hinder widespread adoption by enterprises; data privacy and security issues are gradually becoming important topics that enterprise managers must pay attention to[3]. The management of many enterprises is still deficient in AI cognition, technical understanding, and practical application capabilities, which further exacerbates the difficulty of landing the technology.

This study aims to analyze the specific path of AI-enabled enterprise strategic management mode change and explore its innovative practices in strategic decision-making, resource allocation and execution feedback[4]. By combining practical cases, the study will summarize how AI helps enterprises improve management efficiency, optimize resource allocation and achieve agile strategy execution, providing new ideas for the optimization of enterprise management mode[5].

Through an in-depth analysis of artificial intelligence technology and changes in strategic management models, this paper aims to identify the obstacles enterprises may encounter during

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technological implementation and propose targeted solutions, strategic recommendations, and improvement measures. Additionally, it examines the discrepancies between strategic goals and actual outcomes during the monitoring and evaluation process, identifying their underlying causes. Furthermore, it advocates for the transformation of the internal audit function from merely preventing errors and fraud to providing consulting services for managers and value-added services for business objectives [6]. This not only helps to promote the digital transformation of enterprises, but also provides an important reference value for the wide application and theoretical development of artificial intelligence technology.

2. Current status of the application of artificial intelligence technology in enterprise strategic management

The application of artificial intelligence technology in enterprise strategic management is gradually deepening, providing powerful support for enterprises to obtain competitive advantages in the complex and changing market environment. Artificial intelligence helps enterprises extract valuable data from massive information through powerful data analysis capabilities, which in turn supports scientific decision-making, opens up the interfaces of unified construction of group companies and self-built related information systems of service enterprises, establishes the data control relationship of different systems, effectively expands the source of data, and increases the utilization of effective data through sharing with other departments to satisfy the needs of auditing of financial revenues and expenditures of a variety of business scenarios as much as possible, and provides accurate and complete data support for a variety of auditing needs of group companies[7]. It provides accurate and complete data support for various auditing needs of group companies. The prediction model based on machine learning algorithms can provide insight into market trends and provide forward-looking guidance for the strategic adjustment of enterprises. This data-driven decision-making approach significantly improves the ability of enterprises to cope with market fluctuations[8]. Decision-Making Model using AI:

$$D = f(P, T, H) \tag{1}$$

Artificial intelligence also demonstrates unique advantages in resource allocation. Through intelligent optimization algorithms, enterprises are able to achieve precise allocation of resources in a dynamically changing environment, thereby enhancing resource utilization efficiency. Manufacturing companies can use AI to achieve optimization of supply chain management, while retailers can adjust inventory strategies through intelligent algorithms to reduce costs and meet market demand. This improved resource allocation capability enables companies to be more efficient and flexible in strategy implementation. Artificial intelligence also plays an important role in strategy execution and monitoring. Through real-time monitoring and feedback mechanisms, companies are able to accurately track the progress of strategy implementation and make timely adjustments to action strategies based on data analysis results. Intelligent systems can identify potential problems by monitoring key performance indicators (KPIs), prompting management to take quick countermeasures. This agile execution model enhances the efficiency and effectiveness of corporate strategy implementation, showed in Figure 1.

The application of artificial intelligence in strategic enterprise management still faces a number of bottlenecks[9]. Many enterprises have limited reliance on AI technology, mainly due to the high technical threshold, large initial investment costs, and concerns about data privacy and security. Management's lack of awareness of AI technology has made it difficult for the application of the technology to be fully effective. Enterprises need to fully consider these challenges and develop practical strategies to address them as they move forward with AI-enabled strategic management changes[10].

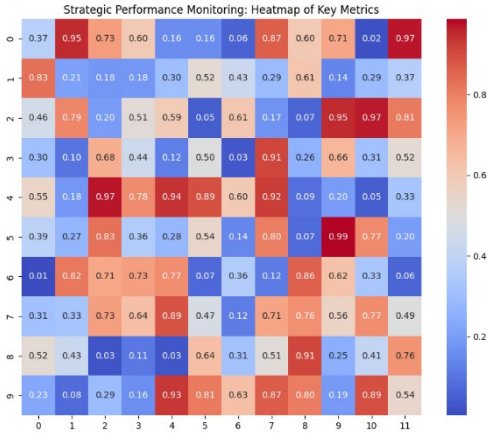

Figure 1 Strategic Performance Monitoring: Heatmap of Key Metrics

3. Artificial Intelligence-driven Innovation in Enterprise Strategy Management Models

Artificial intelligence and enterprise strategic management are closely linked, and enterprises can often reap unexpected results by reasonably utilizing artificial intelligence in strategic management[11]. The innovation of enterprise strategic management mode driven by AI is mainly reflected in three aspects: data-driven strategic decision-making, intelligent resource allocation and optimization, and agile strategic execution and feedback mechanism[12]. By building a management system centered on artificial intelligence, enterprises can gain a more accurate insight into market trends, allocate resources efficiently, and adjust the path of strategy execution in real time, thus realizing a comprehensive upgrade of the management mode and a significant improvement in competitiveness.

3.1 Data-driven strategic decision-making

Empowered by artificial intelligence technology, data-driven strategic decision-making has become an important direction of innovation in the strategic management model of modern enterprises. Through powerful data processing and analysis capabilities, artificial intelligence helps enterprises extract key information from massive data and gain insight into market trends and consumer behavior. This data-based decision-making approach greatly improves the science and precision of strategy formulation, enabling enterprises to better cope with the complex and changing market environment, showed in Figure 2.

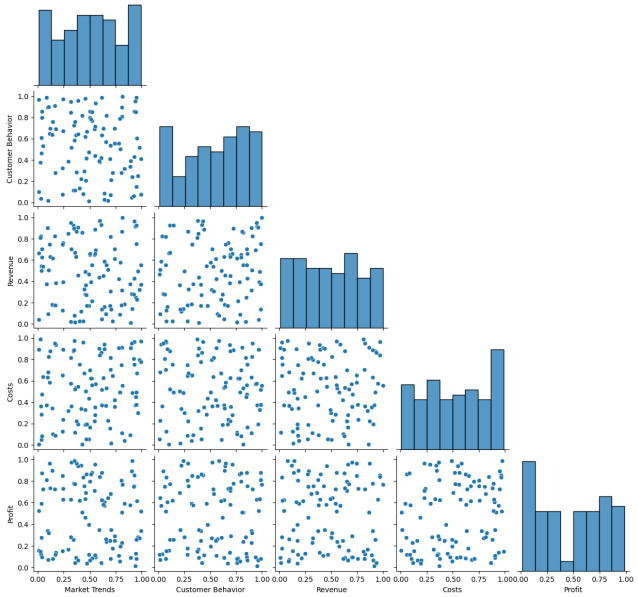

Figure 2 AI-Powered Forecasting: Pairplot of Key Variables

One of the core strengths of AI technology lies in its predictive capabilities. Through machine learning algorithms and big data analysis models, companies can accurately analyze market dynamics, customer preferences, and industry trends. This forward-looking insight provides strong support for enterprises to develop medium- and long-term strategies. Intelligent manufacturing technology can collect real-time data on materials, equipment operation and other systems, intelligently monitor the entire production process through the unified scheduling and arrangement of production resources , and ultimately automatically package and distribute the products produced, avoiding supply interruptions and backlogs.

Data-driven strategic decision-making is also real-time and personalized. Artificial intelligence can integrate data from different sources, such as social media, transaction records and customer feedback, to achieve rapid response to market changes. In the retail industry, AI can dynamically adjust inventory and pricing strategies based on consumer behavior, thus enhancing the competitiveness and market adaptability of enterprises. The application of AI technology can screen candidates and identify those who match the requirements from a large number of resumes, saving screening time and cost.

Data-driven strategic decision-making still faces challenges in practice, such as reliability of data quality and privacy concerns. Enterprises need to ensure the accuracy and integrity of their data, as well as establish sound data protection mechanisms to allay customers' and partners' concerns about privacy breaches. By overcoming these obstacles, organizations can unleash the full potential of AI and turn data-driven decision-making into a tangible strategic advantage.

3.2 Intelligent Resource Allocation and Optimization

Another important application of artificial intelligence technology in enterprise strategic management is intelligent resource allocation and optimization. Through precise algorithms and real-time data analysis, AI can help enterprises allocate resources more efficiently and optimize the operational efficiency of various businesses. In the traditional management model, resource allocation is often limited by human judgment and experience, which can easily lead to resource waste or misallocation. Artificial intelligence can dynamically adjust resource allocation through real-time monitoring of market changes and business needs, thus maximizing resource utilization and improving the operational efficiency of enterprises. Supply Chain Optimization (Cost Function):

$$C = \sum_{i=1}^{n}(c_i x_i + d_i) \tag{2}$$

A typical application of intelligent resource allocation is supply chain management. With the help of AI, enterprises are able to monitor the supply of raw materials, production progress and product inventory in real time on a global scale, and automatically adjust procurement and production plans to ensure production continuity and timely delivery of products. With the help of AI technology, companies can analyze their operational data in real time to improve the efficiency of product production and inventory management. Certain manufacturing companies have begun to apply AI to forecast the demand for parts and components and conduct intelligent procurement based on the production cycle, thereby reducing inventory backlogs and excess costs and ensuring the efficient operation of capital.

Artificial intelligence can also optimize the use of resources within an enterprise, especially in terms of staffing and capital allocation. By analyzing employees' performance, productivity and task completion, AI can provide enterprises with more reasonable staffing suggestions, helping them reduce labor costs while ensuring productivity. Artificial intelligence also plays a role in payroll systems, attendance systems, etc. Enterprises can rely on AI technology to ensure the reasonableness of payroll. The financial resources of enterprises can also be optimized through intelligent algorithms to maximize the efficiency of capital use and reduce financial risks. Resource Allocation (Linear Optimization):

$$\text{Maximize } Z = \sum_{i=1}^{n} a_i x_i \tag{3}$$

Although intelligent resource allocation brings great advantages, its implementation still faces certain challenges. The accuracy and timeliness of data are crucial to the effectiveness of intelligent

decision-making, and enterprises must establish a perfect data collection and analysis system to ensure the scientific and rational nature of resource allocation. When adopting intelligent resource allocation, enterprises need to strengthen their mastery and management of technology to ensure the efficient operation of the intelligent system and effectively support the realization of strategic goals. Strategic Performance Monitoring (KPI Calculation):

$$KPI = \frac{\text{Actual Performance}}{\text{Target Performance}} \times 100 \tag{4}$$

3.3 Agile strategy implementation and feedback mechanisms

With the support of artificial intelligence, the strategy execution of enterprises can not only be more efficient, but also realize a high degree of flexibility and rapid feedback in the implementation process. Traditional strategy execution is often carried out based on fixed plans and goals, making it difficult to adapt to rapid changes in the market environment. Through AI technology, enterprises can monitor the progress of strategy execution in real time and quickly adjust the action plan based on the collected feedback data to ensure the timely achievement of strategic goals, showed in Figure 3:

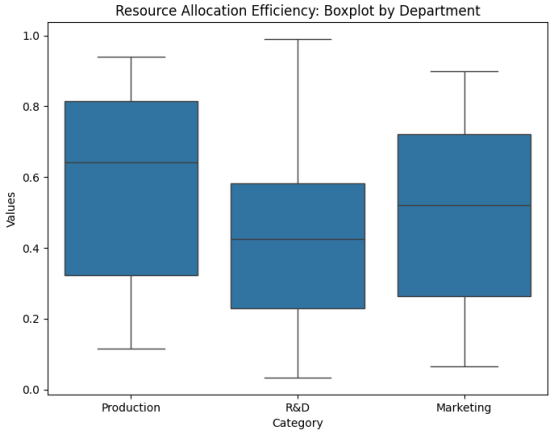

Figure 3 Resource Allocation Efficiency: Boxplot by Department

The real-time data analysis capability of artificial intelligence enables enterprises to dynamically monitor key performance indicators (KPIs) during strategy execution. Through the intelligent system, companies can instantly access various operational data and compare it with the established strategic goals to identify deviations or potential problems in execution. This allows management to make quick adjustments to optimize the strategy implementation process. Certain enterprises monitor sales data through the AI platform and can quickly adjust their sales strategy or product direction when they notice changes in market demand, ensuring that strategy implementation is highly aligned with market demand.

Artificial intelligence also provides an adaptive adjustment mechanism for strategy execution. Based on data feedback, enterprises can continuously optimize the allocation of resources and adjust the action steps in the process of strategy execution to ensure that the strategic objectives are reached flexibly. Enterprises need to formulate relatively perfect internal control and supervision mechanisms to prevent potential pitfalls and risks brought about by AI technology, and effectively avoid negative impacts on the basis of giving full play to the positive effects of AI in strategic management. In project management, AI can adjust task priorities based on real-time project progress data and predict the time and cost of project completion, which can help corporate management identify potential risks in a timely manner and reduce deviations in implementation, showed in Figure 4:

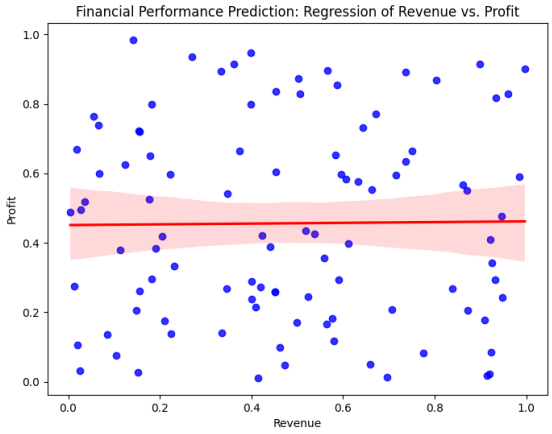

Figure 4 Financial Performance Prediction: Regression of Revenue vs. Profit

Although the agile strategy execution and feedback mechanism can bring significant advantages, the implementation process still needs to solve the problems of technical adaptability and management coordination. Enterprises need to establish a perfect data collection and analysis mechanism to ensure the accuracy and timeliness of data, and strengthen the integration of artificial intelligence systems with existing management processes, so as to achieve the continuous optimization of strategy execution and the flexible achievement of goals.

4. The Challenges and Strategies to Address the Changes in Strategic Management Models Empowered by Artificial Intelligence

Despite the great potential that AI brings to the innovation of enterprise strategic management model, enterprises still face many challenges in the process of practical application. The complexity of technology implementation and high initial investment become the main obstacles for enterprises to adopt AI. Many enterprises lack sufficient technological infrastructure and talent pool, which makes the implementation process of AI difficult.

Data security and privacy protection issues are particularly prominent in AI applications. The effectiveness of AI technology relies on the support of a large amount of data, and enterprises must comply with strict privacy protection regulations when collecting, processing and storing data. Data leakage or misuse not only triggers legal risks, but also damages an organization's reputation. To meet this challenge, enterprises should establish robust data management and security protection mechanisms to ensure data compliance and security, while enhancing the trust of customers and partners in data protection. AI-Powered Forecasting (Time Series Model):

$$\widehat{Y_t} = \alpha Y_{t-1} + \beta X_t + \epsilon_t \tag{5}$$

The proliferation of artificial intelligence requires higher technological awareness and decision-making capabilities from corporate management. However, many managers still have limited understanding and application of AI, which leads to barriers to the integration of technology and strategic management. Employees should be made to deeply realize the impact of AI on themselves and the enterprise, and take the initiative to learn new technologies to better meet the challenges of the new era. To solve this problem, companies can enhance management's level of awareness of AI through continuous training and learning, and encourage them to proactively rely on data and intelligent tools in the decision-making process to promote the deep integration of technology and management. Optimization of Financial Resources:

$$R = \frac{\sum_{i=1}^{n} f_i w_i}{\sum_{i=1}^{n} w_i} \tag{6}$$

The ethical and regulatory issues of artificial intelligence are also challenges that companies cannot ignore as they drive change in their strategic management models. With the widespread

application of AI technology, issues involving decision transparency, algorithmic bias, and social responsibility are gradually emerging. Enterprises should strengthen cooperation with government and industry organizations, and participate in the formulation of relevant policies and regulations to ensure that the application of the technology meets social and ethical standards, and to avoid negative impacts due to the misuse of the technology. Although there are many challenges to the change of AI-enabled enterprise strategic management model, through a series of coping strategies such as technology enhancement, data protection, management training and ethical compliance, enterprises can effectively overcome these obstacles, realize the organic integration of AI technology and strategic management, and lay the foundation for sustainable development of the enterprise, showed in Figure 5:

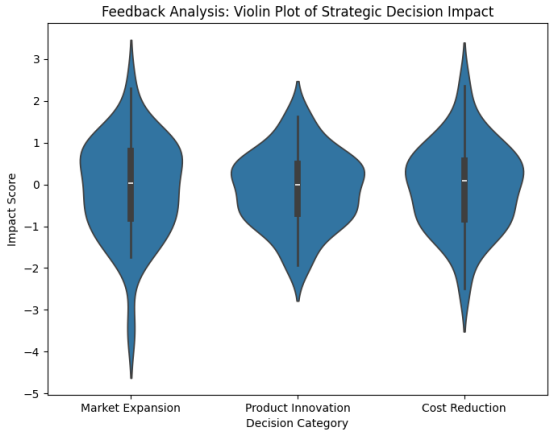

Figure 5 Feedback Analysis: Violin Plot of Strategic Decision Impact

5. Conclusion

The change of enterprise strategy management mode empowered by artificial intelligence is becoming an important driving force for enterprise development. Through data-driven strategic decision-making, intelligent resource allocation and optimization, and agile strategy execution and feedback mechanisms, AI provides enterprises with more precise, efficient and flexible management. These innovations not only enhance the resilience of enterprises in complex market environments, but also optimize the effects of resource allocation and strategy implementation, and strengthen their competitiveness.

Enterprise strategic management is a dynamic and comprehensive system engineering, and the importance of enterprise strategic management is more prominent in the era of artificial intelligence. The application of artificial intelligence also faces challenges in various aspects such as technical complexity, data security, and management perception. In order to ensure the effective implementation of AI technology in the strategic management of enterprises, enterprises need to solve the problems of technical adaptability, data privacy protection, and management capacity improvement, and establish corresponding response strategies. By strengthening technical accumulation, enhancing data protection, improving management cognition, and complying with ethics and regulations, enterprises can overcome these challenges and successfully promote the change of strategic management mode.

Artificial intelligence technology brings far-reaching change opportunities for the enterprise strategic management mode, but enterprises need to balance the application of technology and management integration in the promotion process. With the continuous development of technology and the gradual deepening of its application, artificial intelligence will further promote the innovation of enterprise management mode and inject new momentum into the sustainable development of enterprises. The deep integration of artificial intelligence and enterprise strategic management will provide stronger support for enterprises to cope with the rapidly changing market environment and fierce competition. It is hoped that it will provide useful reference for enterprises to

improve the quality and efficiency of strategic management and help them realize high-quality development in the era of artificial intelligence.

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