Journal of Electronic Research and Application, 2025, Volume 9, Issue 2
http://ojs.bbwpublisher.com/index.php/JERA
ISSN Online: 2208-3510
ISSN Print: 2208-3502

Application of Resource Orchestration Theory in the Research of AI and HI to Achieve Value Creation

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Abstract: This paper grasps the research theme of artificial intelligence (AI) and human intelligence (HI) synergy to create value, and analyzes the development status of AI and HI in the current context of digital intelligence, as well as the significance of their synergy to empower value creation. At the same time, the theory of resource arrangement is introduced, and the connotation and composition of the theory are summarized, as well as the development in the field of research and application. This paper focuses on revealing the intrinsic relationship between resource orchestration theory and AI and HI collaborative work, aiming to fully explore the potential of resource orchestration theory in the collaborative innovation of AI and HI, and put forward practical suggestions based on this.

Keywords: Resource arrangement theory; Artificial intelligence (AI) and human intelligence (HI) synergy; Value creation.

Online publication: February 24, 2025

1. Introduction

In the era of digital intelligence, artificial intelligence (AI) as a disruptive emerging technology, has become the core driving force for the vigorous development of the digital economy [1]. The rapid development of AI technology not only provides unprecedented opportunities for China's economic transformation and relay innovation but also profoundly changes the logic of enterprise value creation [2]. With the continuous improvement of the "human-like" nature of AI and its own algorithm capabilities, coupled with the rapid expansion of AI's commercial application territory, the possibility and necessity of coexistence and collaboration between AI and humans are constantly increasing. The combined effect of human-machine collaboration can realize the two-way reinforcement of the intelligence of both parties, amplify the capabilities of both parties in their respective fields of expertise, and create new work value [3].

As a methodology for managing resources, resource allocation theory clarifies how enterprises allocate resources and establish competitive advantages to obtain maximum value from a dynamic perspective, which provides novel ideas for enterprises to obtain and transform resources and create value [4]. In the collaboration

between AI and HI, it is crucial to strategically allocate resources such as personnel, finances, materials, and information. Resource orchestration theory plays a key role in identifying which resources are essential and effective, as well as in determining how to integrate and utilize them for maximum efficiency. This approach ensures robust support for the collaborative efforts of AI and HI. In addition, the resource allocation theory provides a complete and reasonable explanatory framework for analyzing how enterprises allocate effective resources and develop the ability system in production and operation activities, to build competitive advantages and maximize overall benefits.

Based on this, this paper analyzes the basic principles and theoretical framework of resource orchestration theory, discusses the research progress of resource orchestration theory in the field of enterprise management and innovation, analyzes the internal relationship between resource orchestration theory and AI and HI synergy, clarifies the role of resource orchestration theory in helping to realize the synergistic value creation of AI and HI, and puts forward relevant practical suggestions.

2. AI and HI collaboration to achieve value creation

2.1. AI and HI synergy

AI technologies, especially machine learning and deep learning, are gradually merging with HI to form a new model of human-machine collaboration [5]. This collaborative model not only improves work efficiency and accuracy but also promotes further innovation and development of technology. With the trend of deep integration of AI and HI collaboration, its application scenarios are also deepening and expanding. For example, in sales training, AI can assist sales managers in improving sales agents with top sales performance rankings [6]; The use of emotion recognition software in call service centers can effectively regulate employees' performance in interpersonal emotions and make them obtain higher emotional satisfaction [7]. In the field of knowledge production, such as news writing, artistic creation, education and teaching, the high-density information search and data processing capabilities of AI combined with the advantages of human beings in knowledge, experience, logic, ethics, etc., can play a huge advantage and significantly improve production efficiency [8].

2.2. AI and HI synergistically empower value creation

Through the deployment and application of AI technology, enterprises can reconstruct business value and empower value creation. First, AI and HI working together can significantly improve productivity. AI can take over repetitive tasks, freeing up manpower for more complex and higher-value work. At the same time, the synergy between AI and HI can also optimize workflows, reduce human error, and improve overall work efficiency. Second, AI and HI can work together to drive innovation. By combining human creativity with the computing power of machines, new possibilities can be explored and new products and services can be developed. Finally, AI working in tandem with HI can enhance the adaptability of organizations. In a rapidly changing market environment, AI can quickly respond to market changes and adjust strategies, while HI can judge market trends based on experience and make corresponding decisions, which can enable organizations to be more agile and agile in responding to market challenges. Therefore, enterprises can create new value through the application of AI technology and human intelligence as well as promote the excellent growth and sustainable development of enterprises.

3. Overview of resource allocation theory

Resource allocation theory improves the concept of resource base based on the perspective of action, and explains the process of acquiring, integrating, and utilizing resources to establish competitive advantage and obtain maximum value from the dynamic dimension. Sirmon proposed the resource orchestration theory by combining resource management and asset orchestration. He argued that, guided by strategy, the process through which managers search for and select key resources—along with structuring, bundling, and utilizing them—can be transformed into a competitive advantage for enterprises [9].

3.1. Theoretical composition of resource arrangement

According to existing research, resource allocation theory includes three sub-processes: resource structuring, resource capacity (resource bundling), and resource leverage (resource utilization) [10]. Resource structuring is the basis of enterprise resource management, which refers to the process of acquiring, accumulating, and stripping resources to form a resource portfolio. Resource capability emphasizes the process of forming unique and difficult-to-imitate capabilities through integration and allocation, which are an important source of competitive advantage for enterprises in market activities. Resource leverage refers to making full use of the company's capabilities, as well as specific market opportunities, through the optimal allocation and use of resources, enterprises can continue to improve their competitiveness and market position. In general, the three processes of resource orchestration theory are interrelated and interdependent. Together, these three processes form the core framework of resource orchestration theory, which provides important guidance for enterprises to achieve competitive advantage and sustainable development.

3.2. Research field of resource allocation theory

With the deepening of research, the research field of resource allocation theory has been expanding. Initially, the theory was mainly applied in the field of business management and project management to help organizations better manage and utilize resources, and improve productivity and project success. However, in recent years, the research on resource allocation theory has been expanded to a wider range of fields, such as digital transformation, innovation and entrepreneurship, capacity cultivation, and value creation [11–15]. The research in these fields not only enriches the content of resource orchestration theory but also provides new application scenarios and challenges. In practical applications, such as the green transformation of manufacturing, engineering project management, breakthroughs in key core technologies of enterprises, and digital transformation of education, the practical application effect of resource allocation theory has also been widely recognized. These successful cases provide strong support and reference for the further development and application of resource allocation theory.

4. The role of resource orchestration theory in the synergy between AI and HI to achieve value creation

As mentioned above, the core of resource orchestration theory is to achieve the best benefits and maximize goals through the rational allocation and integration of resources. The essence of AI and HI collaboration is to improve business efficiency, meet the individual needs of users, and promote enterprise innovation and development. From this point of view, there is an intrinsic relationship between resource orchestration theory and AI and HI working together to create value. In the collaborative work of AI and HI, enterprises will give full play to the complementarity and synergy between the two according to business needs, form a resource combination

by considering resource allocation and integration, and give full play to the advantages of the combination to achieve the optimal resource utilization effect. Only by continuously optimizing the allocation of resources and improving the efficiency of resource utilization can AI and HI give full play to their capabilities and maximize complementarity and synergy to promote enterprises to create new business value.

Resource orchestration theory also provides system support and guidance for the collaborative work of AI and HI. Before integrating AI and HI, enterprises need to clarify their requirements and goals as well as analyze and sort out existing problems for business processes. In this case, enterprises can apply resource orchestration theory to conduct detailed analysis and evaluation of various resources (including AI systems, human resources, data resources, etc.), and fully consider factors such as resource availability and utilization efficiency to determine the optimal allocation and allocation mode of various resources. Based on the results of resource analysis, enterprises can formulate a collaborative work strategy between AI and HI as well as consider factors such as the function, performance, compatibility, and ease of use of the AI system. After the AI and HI collaborative work system is built, it is necessary to conduct sufficient testing and optimization, find and solve existing problems in a timely manner, continuously optimize the system, and enhance the effect of collaborative work. In the end, it can help enterprises maximize the use of resources and the successful implementation of projects, create new business value and customer value for enterprises, reshape the status of the industry, and accelerate the iterative upgrading of enterprises.

5. Conclusions and prospects

Resource orchestration theory plays an indispensable role in the synergy between AI and HI to achieve value creation. In the AI and HI collaboration scenario, the application of resource orchestration theory can scientifically identify which resources are most critical to value creation and optimize allocation based on business needs. In addition, in the practice of AI and HI collaboration, enterprises can promote the birth and development of new technologies, new products, and new models through reasonable resource orchestration, accelerate the pace of innovation of enterprises and industries, form stronger comprehensive capabilities, and create greater value.

With the continuous development of AI technology, the application of resource orchestration theory in the collaboration between AI and HI will be more in-depth in the future. Enterprises need to continuously explore the deep integration mode of technology and management to achieve the optimal allocation of resources and the maximization of collaborative efficiency. At the same time, enterprises need to constantly explore new collaboration models and value creation methods to adapt to the changing market environment and customer needs.

Disclosure statement

The author declares no conflict of interest.

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