

The Study on Enterprise Management Innovation under the Industrial Transformation

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Abstract. In the rapidly changing global economic environment, industrial transformation has become the norm. Against the backdrop of the industrial revolution, innovative management has emerged as a crucial component for the high-quality development of enterprises. This article outlines the essence of innovative management in enterprises and the necessity of implementing it. It mainly explores the paths influencing innovative management in enterprises, focusing on digital transformation, flexible organizational structures, human resource management strategies, sustainable development, and leadership innovation.

Keywords: Enterprise; management innovation; industrial transformation.

1. Introduction

Innovation management is the primary concept of transforming and innovating businesses to gain global recognition.^[1] According to Birkinshaw, management innovation involves implementing and utilizing innovative management practices, processes, structures, or technologies to enhance the achievement of organizational objectives in a more effective manner^[2]. In the rapidly changing global economic environment, industrial transformation has become the norm. The widespread adoption of Industry 4.0 technologies has led to machines replacing manual labor, increasing production efficiency, reducing costs, lowering production waste and resource intensity, and enhancing corporate social responsibility. This transformation not only raises living standards but also stimulates the demand for human creativity and intellectual potential. Against this backdrop, innovative corporate management is not only crucial for enhancing competitiveness and achieving sustainable development but also a necessary condition for the survival and growth of businesses^[3].

This article will explore the new pathways of corporate management innovation under industrial transformation from five aspects: the impact of digital transformation on management innovation, flexible organizational structure, innovative human resource management, sustainable development, and leadership innovation.

2. The effect of digital transformation on enterprise management innovation

In today's rapidly evolving technological landscape, businesses are increasingly turning to digital transformation as a necessary strategy for staying competitive and ensuring their survival. By harnessing the power of digital technologies, organizations are able to adapt and evolve their business models and ecosystems, positioning themselves to not only navigate the ever-changing business environment but also to excel within it^[4]. Digital transformation encompasses the utilization of technologies like big data analysis, artificial intelligence, cloud computing, and more to streamline business operations, improve productivity, and innovate new business models. It represents a significant and comprehensive shift that organizations undergo as they incorporate digital technologies into their fundamental processes, business structures, and customer engagements^[5]. E-commerce, originating from the initial phases of digital transformation (2000-2010), refers to the electronic conduct of trade activities. It encompasses the exchange of goods and services, encompassing both the physical delivery of products and the transfer of digital goods from one location to another^[6]. Marketers view the internet as an optimal direct response platform that facilitates personalized communication with customers, enabling the monitoring of their interactions

and enabling precise targeting like never before.^[7] Through an examination and analysis of the value creation strategies employed by 59 e-commerce companies newly listed in the United States and Europe, a theoretical framework has been established for understanding value creation within the e-commerce sector. The study highlights that no single entrepreneurial or strategic management theory can completely elucidate the vast scope of value creation potential in e-commerce.^[8]

By examining the implementation of the Customer Relationship Management (CRM) system by a petrochemical company in Malaysia, data from 295 managers at all levels was collected through surveys and interviews. Research findings indicate that corporate governance significantly influences the cognition, implementation, and quality of digital transformation. The findings underscore the significance of corporate governance in guiding strategic decisions aimed at driving the digital transformation of manufacturing enterprises in emerging economies^[5]. Companies have the potential to leverage digital technology to enhance existing internal and external processes or create new ones, which can then be integrated into innovative business models^[9]. Nonetheless, digital transformation poses both opportunities and challenges for enterprise management, as the process is complex and risky, with the potential for significant investments in both material and human resources, making failure potentially detrimental to enterprises^[10]. Research by Indonesian experts suggests that accelerating digital transformation policies can promote the growth of the creative sector, but it must address challenges related to technology accessibility, such as limited infrastructure^[11].

3. The effect of flexible organizational structures on company management innovation

Organizational flexibility pertains to an organization's capacity to swiftly adjust and react to shifts in both internal and external environments. This encompasses elements such as adaptability in structure, agility, and innovation capabilities to address changes in market dynamics^[12]. In today's dynamic and highly competitive business environment, innovative management is crucial for companies. One significant outcome is the emergence of flexible organizational structures, enabling companies to adapt to constantly changing environments and market demands. Traditional company structures may constrain innovation and quick decision-making. In contrast, innovative companies are more likely to take planned risks, have management dedicated to entrepreneurial and innovative activities, effectively integrate talents within teams and task groups, emphasize group and collective orientation, and have a systematic reward system to reinforce entrepreneurial behavior^[13]. Small and medium-sized enterprises particularly benefit from flexible organizational structures as they are more adaptable to changes and can facilitate both internal and external open innovation^[14]. A study conducted through a survey questionnaire based on Likert-type scales targeting 306 tourism company managers in the Arequipa region of Peru revealed that organizational flexibility and managerial support have a positive and significant impact on innovation performance. Furthermore, managerial support plays a crucial role in positively moderating the relationship between organizational flexibility and innovation performance^[15]. Aiken and Hage argue that technological gaps represent organizational disparities, thus proposing an organic organizational structure as a solution to the "American challenge."^[16] The flexibility, innovation, and competitiveness of an organization are interconnected elements that play a crucial role in its success. By nurturing a culture of flexibility, embracing innovation, and continuously adapting to market dynamics, an organization can enhance its competitiveness and achieve sustainable growth^{[14][18]}. By conducting individual interviews, data was gathered from 160 technology companies in Europe to examine the effects of technical support and technical skill enhancement on organizational performance. The findings suggest that technological resources improve both potential and realized absorptive capacity, influencing internal labor flexibility and organizational innovation, consequently enhancing organizational performance. In the context of rapidly evolving technological landscapes, technological assets create opportunities for organizational innovation and flexibility by providing in-depth contextual knowledge and tools^[18].

4. The effect of innovative human resource management on corporate management innovation

An examination of data from 180 Spanish companies utilized a Structural Equation Model (SEM) based on Partial Least Squares to demonstrate that knowledge-based Human Resource Management (HRM) practices impact a company's intellectual capital, leading to improved innovation performance^[19]. The adoption of Green Human Resource Management (GHRM) has been identified as essential for enhancing a company's green innovation capabilities. A regression analysis and moderation test on data from 143 Chinese companies revealed that GHRM positively influences green innovation, with green human capital acting as a moderator in the relationship between GHRM and green innovation. Moreover, the level of attention to the management environment also influences the impact of GHRM on green human capital^[20]. Data collected from 129 diverse businesses in Italy through standardized surveys were analyzed using the OLS regression model to test a hypothesis. The results indicate that knowledge acquisition positively impacts innovation, with Human Resource Management (HRM) playing a moderating role in the relationship between knowledge acquisition and innovation performance^[21].

In societies with high power distance, such as the United Arab Emirates, green transformational leadership and green human resource management practices significantly influence the green innovation and performance of small and medium-sized enterprises. By leveraging a resource-based view and the capability-motivation-opportunity theory, it is possible to elucidate how green transformational leadership and green HRM practices aid in attracting, developing, retaining, and supporting employees, thereby fostering green innovation and environmental performance. Employees' green motivation and opportunities indirectly impact environmental performance through green innovation^[22]. Effective implementation of human resource management strategies can enhance employee productivity, mental well-being, job satisfaction, and contribute to workplace safety and health^[23]. A survey involving 309 small and medium-sized manufacturing enterprises indicated that utilizing Structural Equation Modeling (SEM) reveals that green HRM can moderate the influence of green transformational leadership on green innovation, subsequently improving environmental performance through green innovation. This highlights the importance of reinforcing green HRM practices to enhance a company's green capabilities^[22].

5. The effect of sustainable development on corporate management innovation

Silvestre and Țîrcă discussed the crucial role of innovation in advancing society and communities towards a sustainable future, emphasizing the significance of innovation for sustainable development^[24]. Carley and Christie also point out that sustainable development has influenced the thinking of business management and organizational development, leading to significant innovations in environmental management^[25]. Boons and his colleagues have outlined the connection between sustainable business models, innovation, and economic performance, emphasizing the challenges and opportunities brought about by sustainable development^[25]. This indicates that businesses need to adopt innovative approaches that align with sustainable development goals to enhance economic performance while contributing to environmental and social well-being. Kleef argues that over the past thirty years, people's lifestyles have significantly harmed natural systems. Businesses play a crucial role in production and consumption systems, driving change through technological innovation. However, to alleviate environmental pressures, there is a need to realign the focus of innovation by integrating the economic, social, and ecological impacts into a form of long-term sustainable development^[26].

Starting from the theoretical perspective of Supply Chain Innovation (SCI), Kusi-Sarpong, Gupta, and Sarkis discuss the significance of Sustainable Innovation Management in manufacturing sustainable supply chain management. They propose a sustainable innovation standard framework that utilizes a "best-worst" multi-criteria decision-making model for evaluation, with a specific focus on the financial feasibility of innovation and the sustainability criteria of manufacturing supply

chains^[26]. Leveraging the principles of the dynamic capabilities approach and utilizing data from 176 small and medium-sized enterprises in key economies across sub-Saharan Africa, the study demonstrates that green process innovation acts as a mediator between corporate social responsibility and the performance of small and medium-sized enterprises^[27].

6. The effect of leadership innovation on enterprise management innovation

Leadership plays a vital role in shaping organizational outcomes such as innovation and performance. Transformational leadership, known for motivating and inspiring followers towards a shared vision, is closely associated with organizational innovation and performance^[28]. The correlation between leadership style and the culture of innovation within an organization is a critical aspect to consider. Research indicates that transformational leadership, along with other leadership styles, can foster a positive innovative environment within a company, leading to enhanced innovative activities and results^[29]. Exploring the significance of management innovation as a competitive edge at the organizational level, it has been observed that senior management wields substantial influence due to their pivotal position within the organization. Both transformational and transactional leadership behaviors contribute to driving management innovation. Smaller organizations with lower complexity tend to benefit more from transactional leadership, while larger organizations require transformational leadership to propel management innovation^[30]. A study involving 280 senior managers from 106 companies in Iran with a staff of over 50 employees employed structural equation modeling to investigate the impact of leadership on organizational dynamics. The findings suggest that transformational leadership directly influences organizational learning and knowledge management, subsequently impacting innovation and performance in manufacturing firms. Furthermore, transformational leadership indirectly influences organizational innovation through organizational learning and knowledge management, while organizational innovation indirectly affects organizational performance through knowledge management and organizational learning^[31].

Kathrin Rosing, Michael Frese, and Andreas Bausch proposed the Dual Agility Theory of innovative leadership, which involves two sets of complementary leadership behaviors—open and closed leader behaviors—that facilitate exploration and exploitation at both individual and team levels. A singular leadership style may not effectively foster innovation; instead, flexibly applying leadership behaviors to evolving needs proves more effective. Agile leadership entails toggling between reducing and increasing follower behavior differences to cultivate followers' ambidexterity^[32]. Innovation serves as a pivotal driver of organizational performance, as it entails the creation and implementation of novel ideas or processes that add value to the business. Utilizing structural equation modeling and data from three sources within the UK local government, research findings indicate that the impact of managerial innovation on performance is not direct; rather, it is mediated by performance management^[33]. The relationship between leadership, innovation, and performance is complex and multifaceted. Findings from a survey conducted with 155 participants in the for-profit service sector in Pakistan suggest that transformational leadership exerts a stronger impact on organizational learning when compared to transactional leadership. Moreover, organizational learning has the capacity to enhance organizational performance^[34]. Understanding consumer behavior and preferences is crucial for companies seeking management practice innovation. By adopting a consumer-centric perspective, companies can adjust their strategies to meet the evolving needs of their target markets, thereby enhancing marketing effectiveness and overall business success^[35].

Analyzing innovation product data from 187 high-tech enterprises in China revealed that customer-oriented learning is positively associated with new product creativity, whereas competitor-oriented learning shows a negative correlation. Furthermore, the capability of new product development positively impacts creativity, whether through independent development or in collaboration with customer learning^[36]. In highly competitive markets, placing customers at the forefront is crucial. Management innovation involves strategies to better address customer

requirements, such as conducting market research, designing user experiences, and providing personalized services. A study involving 400 participants utilized frequency, reliability, effectiveness, adaptability, and path analysis within a structural model. The results suggest that the cultural market orientation and functional coordination of consumer focus in sharing economy enterprises have a significant impact on product innovation, while the influence of competitive orientation on product innovation is deemed insignificant.^[37]

7. Conclusion and future outlook

This article delves into the importance of management innovation in the current era of industrial transformation. It begins by introducing the concept of management innovation and its crucial role in the growth of enterprises, highlighting its essential nature in fiercely competitive markets. The article then discusses the factors influencing management innovation across five dimensions: digital transformation, adaptable organizational structures, innovative human resource management, sustainable development, and leadership innovation.

In conclusion, several areas for future research are identified. Firstly, there is a need to explore strategies for overcoming constraints like technological accessibility and inadequate infrastructure during digital transformation to enhance the efficacy of management innovation. Secondly, there is a call for the development of management innovation models tailored specifically for small businesses. Lastly, there is a recommendation to investigate the link between knowledge acquisition, human resource management, and innovation performance through the lens of open innovation.

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