

Research on the Mechanisms and Pathways for Digital Economy Empowerment in Human Resource Management

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Abstract:

The development of the digital economy is a strategic choice for grasping new opportunities presented by the latest technological revolution and industrial transformation. A robust digital economy is instrumental in driving the formation of new development patterns, fostering the construction of a modern economic system, and building new competitive advantages for the nation. In the era of the digital economy, corporate human resource management faces new opportunities and challenges. The evolution of information technology and digitalization compels continuous transformation and environmental adaptation in human resources. Thus, innovating and exploring effective mechanisms and pathways for digital empowerment in human resource management is not only aligned with the trends of our times but also crucial for enhancing corporate efficiency and keeping pace with modern developments. This paper discusses the characteristics of the digital economy era and analyzes the mechanisms and pathways faced by enterprises under digital empowerment in human resource management, providing insights and reference for further analysis and study.

Keywords: Digital Economy, Human Resource Management, Digital Empowerment, Mechanisms and Pathways

1. Introduction

In the current era marked by rapid technological advancements such as the Internet, Internet of Things, big data, and cloud computing, the field of human resource management (HRM) is witnessing transformative shifts. As the digital economy unfolds, it demands that enterprises re-evaluate their strategic frameworks, placing a heightened emphasis on innovation as a means to secure a sustainable competitive advantage. This document explores the imperative for businesses to realign their HRM strategies to thrive under the new paradigms shaped by digital influences. Traditional research on HRM strategies often revolves around conventional economic models, predominantly analyzing the impact of distinct innovation strategies on a company's competitive edge. Yet, literature that specifically addresses HRM within the digital economy is less frequent and tends to polarize between technology-oriented and market-oriented strategies. This study addresses this lacuna by investigating how enterprises can harmonize these two orientations to optimize their innovation efforts effectively [1]. Through detailed theoretical analysis and the development of a model for

acquiring competitive advantages, this paper delves into strategic innovation choices in HRM. Employing a contemporary enterprise as a case study, it seeks to identify practical strategies that merge technological and market innovations. This exploration aims to broaden the research perspective on enterprise innovation within the digital economy and provides a structured approach for strategic decision-making in HRM [2].

2. Concepts and Understanding of the Digital Economy

To comprehend digitalization, we must first understand what "digitalization" entails. In 1996, American scholar Nicholas Negroponte published "Being Digital," where he envisioned a future where humans could utilize technology to create a virtual, digital space for activities involving digits, information, communication, dissemination, and work—sparking imaginative and fanciful ideas akin to the now-popular concept of the metaverse, proposed by Neal Stephenson in his 1992 novel "Snow Crash" as a fictional probability of virtualizing and digitizing real-time events. Over the years, digitalization has evolved from information technology, enhancing our understanding

of production efficiency and the acceptance level of corporate information data processing. Some believe it has re-empowered the core competitiveness of business models, indicating the recognition of digital empowerment and transformation.

Having grasped what “digitalization” is, we can better understand what the “digital economy” involves. According to the information above, the digital economy is inseparable from information, electronic levels, and a series of economic activities. The “China Digital Economy Development White Paper” defines it as economic activities where digitized knowledge and information are key production elements, digital technology innovation is the core driving force, and modern information networks are crucial carriers. These activities deeply integrate digital technologies with the real economy, continuously enhancing the digitalization and intelligence level of traditional industries and accelerating the restructuring of economic development and government governance models [3].⁰

From various industrial and economic perspectives, others have pointed out that the digital economy involves economic activities where digitized knowledge and information serve as key production elements, modern information networks are essential carriers, and the effective use of information and communication technologies enhances efficiency and optimizes economic structures. Thus, the essence of digitalization is to visualize information, allowing data to be transformed into quantifiable and qualitative expressions, presenting problems and solving them through technology. The key factors in this transformation include data as the foundation, technology as the core driving force, and demand as the objective of digital transformation [4].

In summary, the digital economy and digital empowerment aim to meet people’s needs through scientific and technological means, processing, analyzing, handling, and ultimately utilizing known or existing data to meet user requirements.

3. Concepts and Understanding Related to Corporate Human Resources

After gaining a basic understanding of the digital economy, we now turn to its beneficiaries—the enterprises. Various scholars have provided multiple definitions of corporate human resources. For instance, it is simply defined as “the sum of individuals who can promote the development of an entire enterprise, possessing both physical and intellectual labor capabilities.” Another definition is “corporate human resource management,”[5] which refers to a series of activities undertaken within an organizational system

to achieve set goals such as improving labor productivity, quality of work life, and economic efficiency through planning, organizing, leading, supervising, motivating, coordinating, and controlling [6].

It is apparent that human resource activities are indispensable to the operation of a company. Generally, corporate human resources encompass the intellectual and physical abilities of employees, who typically possess the level and quality of skills required to serve the enterprise and utilize their potential to create value and propel enterprise development.

Enterprises are among the primary beneficiaries of digitalization in the digital economy, serving as fundamental carriers for digital transformation and empowerment. The large-scale realization of digitalization is most likely to occur within enterprises. Combining previous definitions and contexts, the digital transformation and empowerment of an enterprise involve leveraging known digital technologies (such as big data, artificial intelligence, cloud computing) to fulfill production and operational goals and needs, aligning with modern science and technology to transform enterprise operations and business models, and innovating to adapt production patterns and organizational structures that do not meet productivity demands, thus achieving digital transformation.

Therefore, enterprise digital transformation and empowerment are not just explorations and integrations of current technologies and business models but also affirmations and pursuits of the digital trend. Most of these transformations involve mining useful customer information to determine needs, innovate service models, and content, thereby achieving beneficial interactions between enterprises and customers.

Central to enterprise digitalization and empowerment is the human resource sector. The core of enterprise digitalization is people—deeply mining customer and talent data using big data to create a new digital system that meets enterprise development needs. This means that under the mechanisms of digital economy transformation and empowerment, human resources will undergo relevant business, management, and organizational structure reforms. Human resources form an essential part of an enterprise’s core competitiveness, and with the addition of digital applications and empowerment, the digitalization of human resources is an inevitable trend, essential for meeting the development needs of enterprises.

4. Mechanism Analysis of Digital Economy Empowering Human Resources

Opportunities come with challenges. It is well known

that in the management and operation of enterprises, human resource management is an inseparable part and a critical link in corporate survival and development. (It is well known that human resource management forms an inseparable part and a critical link in the management and operation of enterprises, essential for corporate survival and development.) To keep pace with the times, enterprises may leverage mechanisms like big data and other digital empowerment tools to innovate in human resource management, ensuring the development of the enterprise. However, aspects of corporate human resource management might have a “ripple effect,” with opportunities and challenges coexisting. Addressing and solving problems requires enterprises to focus on current trends, expedite innovation and reform, meet the demands of the times, enhance core competitiveness, and provide effective support for enterprise development.

4.1 Legal Mechanisms for Steady and Long-Term Progress

President Xi Jinping emphasized during the 34th collective study of the Political Bureau of the CPC Central Committee that “it is necessary to improve the digital economy governance system, enhance laws, regulations, and policy systems, perfect institutional mechanisms, and elevate the modernization level of China’s digital economy governance system and capabilities.” [7] Currently, China’s digital economy is thriving, and to achieve high-quality economic development, the digital foundation of the digital economy must be secured, which is inseparable from the standardization and guidance of laws. Related laws develop alongside China’s digital economy, from small to large, from weak to strong, in a continuous improvement process. Facing future challenges, it is crucial to perfect related legal mechanisms, providing a stable and sustainable model for the development of the digital economy. (Facing future challenges, perfecting related legal mechanisms is crucial to provide a stable and sustainable model for the development of the digital economy.)

The healthy and stable development of the digital economy cannot occur without the continuous improvement and regulation of the legal system. (Without the continuous improvement and regulation of the legal system, the healthy and stable development of the digital economy cannot occur.) Currently, China’s digital economy legal provisions are being continuously perfected, covering administrative, civil, and intellectual property law, among other fields. Enhancing the perfection and regulation of related laws, ensuring coordination and complementary

explanations among them, is essential for aligning different domains and standards within digital economy development, providing a favorable environment and unified guidelines, enhancing judicial and law enforcement efficiency, and supporting the high-quality development of the digital economy.

4.2 Technological Mechanisms as Endless Driving Forces

The digital economy is the trend of the future. Facing its demands, digital transformation cannot proceed without the support of technological mechanisms. The digital economy plays an increasingly significant role in economic development and serves as a model for competition and cooperation on the international stage. Well-known technologies can generally be summarized with the acronym 5BASICED: 5G, Blockchain, AI, Security, Internet of Things (IoT), Cloud Computing, Edge Computing, and Big Data, especially the integration of big data, cloud computing, artificial intelligence, and blockchain, which will bring substantial changes and impacts to life, industry, and society; (Prominent technologies can be summarized by the acronym 5BASICED: 5G, Blockchain, AI, Security, Internet of Things (IoT), Cloud Computing, Edge Computing, and Big Data. The integration of these technologies—big data, cloud computing, artificial intelligence, and blockchain—will bring substantial changes and impacts across life, industry, and society.) not only quantitatively but also qualitatively, fundamentally improving and promoting economic and social development. The continuous exploration and application of technological mechanisms under the digital economy have enhanced the efficiency of digital economy empowerment of human resources, injecting ceaseless momentum into enterprise development [8]. The rational application of scientific and technological concepts is crucial, allowing everyone to perform their roles, help and complement each other, and undertake corresponding responsibilities and obligations, providing a feasible security foundation for the sustainable development of the digital economy.

4.3 Development Mechanisms for Long-Term Security

With the support of law and technology, what remains is to provide a viable ecological development mechanism for the digital economy. With its own development soil, the digital economy will inevitably continue to grow like bamboo shoots after rain, provided that this soil offers a “sense of security” that everyone can feel. In such an ecological environment, the digital economy can utilize its various strengths, establish its advantages, and through

ecological interaction, achieve efficiency improvements. In terms of human resources, if enterprises have such ecological technology, they can serve human resource development in great detail, providing a widely recognized ecological environment for the convenience and timeliness of corporate human resources [9].

5. Pathways for Digital Economy Empowerment of Human Resources

As internet technologies continue to evolve, the digital economy era offers modern enterprises enhanced daily production, business operations, and management, along with greater developmental opportunities. However, the growth of the digital economy also poses increasingly stringent challenges to the field of human resource management. For human resource managers broadly, the era demands not only a shift from traditional views but also an active engagement with the impacts of the digital economy on human resource management. This involves incorporating more sophisticated digital and informational methods into the human resource management process, including recruitment, training, and assessment, thereby innovating HR management work and promoting high-quality development to enhance efficiency and facilitate enterprise progress and convenience, ultimately powering sustainable, high-quality development.

5.1 Differences Between Human Resource Management in the Digital Economy and Traditional Human Resource Management

In the digital age, enterprises that possess a modern human resource management system have a distinct advantage. First, they can proactively plan and allocate resources from a broader perspective to better face future challenges. Second, once the system is established, internal pressures within the enterprise can be alleviated, resulting in a more organized and orderly operation, ultimately aimed at enhancing the market competitiveness of both the employees and the enterprise itself. Thus, the impact of a human resource management system under the digital economy is profound. But what exactly distinguishes it from traditional human resource management systems?[10]

5.1.1 The breadth of one's perspective varies

Expanded Perspective Traditional human resource management focuses on personnel management itself, whereas modern systems pay more attention to enterprise management related to human factors, incorporating elements previously external to HR such as "strategic positioning," "corporate culture management," and "process management." This shift expects HR departments to engage

more with macro-level issues and participate in broader enterprise management and system construction, not just passively adapting to strategies after they are formulated but actively contributing to the strategic positioning and management of the company [11].

5.1.2 Viewing issues from different angles

Different Approaches to Problem-Solving Modern HR systems focus more on building management structures rather than on transactional tasks, addressing macro-management issues and optimizing management mechanisms with a long-term impact on the enterprise. As noted in "Built to Last" by James C. Collins and Jerry I. Porras (1994), the role of a manager should be to "build clocks, not tell time." The value of HR departments extends beyond mere hiring, training, and payroll; it lies more significantly in establishing a robust and sustainable operational mechanism for the enterprise.

5.1.3 Differences in other aspects

Other Differences Significant changes are also evident in the scope of HR management, such as corporate culture, compensation and performance, work environment and space, and labor relations, all of which show considerable variation from traditional HR management. From the perspective of corporate culture, digital economy HR places greater emphasis on employee experience, focusing more on employees' mastery and application of digital technologies and allowing more flexibility in work environments, not limited to confined spaces. Regarding labor relations, efforts are aimed at enhancing employee efficiency and profits, fostering harmonious company-employee relations, increasing job satisfaction, sense of achievement, and belonging, thus indirectly facilitated by the digital economy[12].

5.2 Positive Impacts and Analysis of Human Resource Management Empowered by the Digital Economy

Digital empowerment has become a core strategy for many enterprises, with data showing that 67% of the top 1000 global companies and 50% of the top 1000 Chinese companies regard digital empowerment as central to their strategies. The speed of digital transformation in HR is accelerating. What are the positive factors driving enterprises to vigorously enhance their digitally empowered HR management?[13]

5.2.1 Enhanced the efficiency of human resource management

Increased Efficiency in HR Management Traditionally, HR management in many enterprises has been inefficient,

characterized by a paper-based system prone to data loss due to human error, leading to time-consuming and inefficient staff allocation, assessment, and mobility processes. Digital empowerment, particularly through big data, optimizes and simplifies these processes, enhancing the efficiency of HR tasks with data preservation and extraction capabilities, quickly accessing and utilizing important information, facilitating management, and providing competitive advantages.

5.2.2 Reduced the costs of human resource management

Reduced Costs of HR Management Uneven distribution of staff and unscientific job matching increase HR management costs and employee dissatisfaction, potentially leading to increased turnover and loyalty issues. By leveraging big data, enterprises can match employees more scientifically to their roles, reducing wastage and saving costs. Additionally, big data aids in streamlining recruitment, easing the workload of HR departments, and lowering recruitment costs.

5.2.3 Made human resources more transparent and reliable

Increased Transparency and Reliability in HR Digital empowerment enhances the transparency and reliability of HR management, preventing the unprofessional and opaque practices that lead to unfairness and nepotism within enterprises. By making HR processes more transparent, digital tools allow employees to better understand HR decisions and their own roles within the company, thereby increasing their engagement and efficiency.

5.2.4 Increased the company's competitiveness in human resource management

Enhanced Competitive Edge in HR Management In the knowledge economy, finding the right talent is challenging for many enterprises, often leading to a "talent panic." Digital tools facilitate more precise recruitment and training, saving time and allowing for the cultivation of talent to meet specific job requirements, thereby enhancing the overall competitive edge of the company's HR management.

5.3 Implementing Digital Economy Empowerment in Human Resources

Traditional HR management includes recruitment, performance, management, planning, training, compensation, benefits, and employee relations, each with specific requirements and focus areas. With societal progress, the support and efficiency provided by digital tools have made them a popular choice, enabling data-driven, transparent,

and standardized enterprise operations, saving labor costs, and enhancing corporate benefits [14]. So, what are the specific mechanisms and pathways of digitally empowered HR management?

5.3.1 Ensure the digital transformation and upgrade of human resource management

Transformation is both a process and an essential component. As enterprises undertake digital empowerment transformations, they must also consider the dual needs of talent and the business, aligning purposes and synchronizing steps. What feasible plans might we consider for transformation and upgrading? This paper proposes a set of transformation and upgrading objectives termed "more, faster, better, save" to ensure the digital empowerment transformation and upgrading of human resources within enterprises.

"More" signifies the enhancement of innovative thinking. By liberating thought and adhering to pragmatic realism, human resource management can gain a certain flexibility in handling new issues, not rejecting them blindly but instead learning from and applying their benefits. This drives the entire enterprise's management innovation through digital empowerment and, in turn, promotes the progress of digital empowerment. Thus, HR departments should foster a mindset enriched with innovative thinking, quantitatively and qualitatively aligning outstanding employees with superior technology to maximize their potential.

"Faster" refers to the swift application of technology. Enterprises must be courageous in embracing new entities, whether hiring exceptional talent, employing new technology, or adopting new information. As mentioned previously, talent is a primary factor in business development and a core component of HR management. Therefore, the application of talent and new technology must be rapid to align with and support the company's strategic goals for sustained development.

"Better" involves managing the relationship between employees and new technologies effectively, reflecting the "people-oriented" philosophy of HR management. As the digital era progresses, enterprises increasingly elevate their informatization levels, inevitably changing employees' work environments due to new technologies. To push forward with HR management under digital economy empowerment, it is crucial to align HR operations with the strategic goals of the enterprise, encouraging employees to embrace the changes brought by new technologies. This approach aims to make HR management more scientific, standardized, and efficient, increasing employees' accep-

tance of new technologies and gradually implementing digital and intelligent applications within the enterprise to enhance employee productivity and capability with efficient platform resources.

“Save” utilizes the technological features of big data to make enterprise operations more convenient and cost-effective. In this new era, big data serves as a management tool within HR, capable of analyzing and processing large volumes of complex data and integrating key information, undoubtedly saving the enterprise considerable time and energy while also enhancing labor productivity. Moreover, the application of big data in collecting and analyzing employees’ work data provides a true reflection of performance, enhancing the accuracy of job assessments and the fairness of evaluations. This not only saves time and management effort in understanding employees’ work conditions but also achieves optimal placement and motivation of employees, unlocking their potential and thus fulfilling the company’s developmental objectives.

5.3.2 Create a favorable digital workspace

The establishment of a digital workspace is anchored on modern high-tech technologies such as the Internet, Internet of Things, big data, and cloud computing, providing employees with a data-driven work environment and space. Digitalization is essential in this context as it transcends the limitations of time and space for employees, facilitating their convenient application of digital technologies. This advancement aims to achieve efficient human resource management, seamless information sharing, information security, and smart office operations within enterprises [15]. Consequently, companies must prioritize the construction of digital workspaces, invest adequate funds for optimization and improvements, and sensibly advance the application and feedback of technologies. This approach fosters a positive work environment, breaks down barriers to teamwork, and leverages modern technology to build a proprietary online team.

5.3.3 Establish a comprehensive management system for digital empowerment

To align with the evolution of the era, enterprises must undertake appropriate reforms to ensure the company’s strategic direction and adopt a proactive approach to potential challenges. This necessitates the establishment of specific management systems at the outset of any digitalization initiative. Realistically, companies must base their management policies on their actual conditions, integrating the organization’s developmental goals and corporate culture. It is crucial to prioritize both the development needs of employees and the growth requirements of the enterprise,

thereby navigating a path that suits their unique digital empowerment strategy.

5.3.4 Transform thinking and cultivate corporate culture

In the digital economy, the development of the internet has driven transformation and growth across many industries. In such an era, clinging to so-called “old” ways of thinking is impractical. Therefore, before implementing digital transformation, it is critical to cultivate an internet mindset and literacy among managers and employees. Within human resource management, it is essential not only to master traditional HR practices but also to actively integrate new innovative technologies. This necessitates that companies provide reasonable information technology training for managers and employees, enabling everyone to embrace the technological changes brought about by the digital economy and subsequently enhancing work efficiency and quality.

Corporate culture is the essence of an enterprise, and successful businesses are always evolving. Therefore, as part of the digital economy’s growth, it is vital for enterprises to focus on establishing and nurturing a digital economy culture. This allows employees to fully understand how the company can develop better under this cultural framework and recognize their roles in contributing positively within this environment. Managers should acknowledge and incentivize employees who master and are adept at learning about the digital economy, encouraging all to actively embrace the aspects of corporate culture that exemplify the digital economy. This approach not only better serves the enterprise but also allows individuals to grow their value alongside the digital economy.

5.3.5 Enhance and train employees’ skills with technology

In the digital age, human resource management in enterprises requires the potential for multi-skilled development. Therefore, in this era of digital empowerment, the demands on human resources involve both people and technology. In addition to possessing a high level of HR management knowledge and core skills, individuals should also have the capability to address unexpected situations and make judicious decisions. With the support of digital empowerment technologies, employees’ work must become more proactive. Let us discuss how to enhance employees’ competencies from the perspective of HR competencies:

(1) Lifelong Learning: Regardless of location, continuous learning is a fundamental competency requirement and a driving force that continually adds value to employees.

Given the rapid pace of societal development and the era of information overload, our knowledge and abilities must continuously adapt to new changes, especially under the influence of the digital economy. Market conditions change rapidly, and without continuous upgrading of knowledge and skills, individuals will eventually be left behind by the times, and this is particularly true for HR professionals. Thus, HR managers need to continually update their knowledge and enrich their understanding based on their industry and circumstances, delve into their roles, serve the business needs effectively, and fully realize their potential.

(2) **Innovative Ability:** In the context of digital empowerment, innovation is an indispensable skill, although not everyone possesses it. Like the competency described above, HR managers must innovate through learning and continue learning post-innovation to master the innovative capabilities enabled by digital technologies. In essence, HR managers need to possess digital management skills, effectively use digital software, and innovate HR systems and management policies to meet the developmental needs of the enterprise. Most importantly, they should maintain a mindset open to innovation, continually explore new ideas, and effectively use digital empowerment to enhance their management level and core competencies.

(3) **Proactive Communication and Coordination Skills:** As HR work becomes increasingly digitized and technologized, the coordination and communication abilities of HR managers become more critical. Machines require human operation, and errors in machine operation can significantly impact the work atmosphere. Technology does not hinder communication between individuals; rather, HR managers must effectively bridge communications, ensuring that human warmth reaches others, misunderstandings are cleared, effective management is conducted, trust within the team is fostered, and team cohesion is enhanced.

(4) **Advanced Technological Proficiency:** As technology evolves, so do people, and enterprises increasingly require multifaceted talents. For digital empowerment, individuals skilled in data analysis, mathematical statistics, and algorithmic calculations are highly sought after. Many enterprises and organizations prioritize training in relevant digital empowerment technologies due to their popularity. Therefore, HR managers need not only be proficient in their enterprise's operations but also possess analytical abilities related to digital empowerment, as the data presented by systems are not absolute and require HR managers' analysis for final decisions. Furthermore, if there are issues with the system, it also tests the HR manager's ability to operate and resolve these issues.

(5) **Robust Professional Competency:** The fundamental requirement for any position is strong professional capability, and this is true for HR practitioners. Whether in traditional HR or in the increasingly prevalent digital empowerment context, the ability of HR managers encompasses managing and operating enterprises within legal and regulatory frameworks effectively, using HR-related knowledge appropriately in areas such as compensation management, performance evaluation, organizational behavior, recruitment, and employee training. Although digital empowerment has resolved many issues in HR, enterprise managers cannot be reassured without HR managers' in-depth professional knowledge in these areas.

6. Conclusion

Technology is the primary productive force, endowing the digital economy with formidable capabilities, which in turn empower various industries. The empowerment of human resources represents a liberation for enterprise development. In the new era, the wise decisions of the Party Central Committee have allowed enterprises to feel the dividends of the times in the era of the digital economy, thereby promoting the digital transformation of human resource management. In the digital economy era, enterprises must adapt to the development of the times, gradually align with the digital economy, and recognize the shortcomings and associated disadvantages of traditional human resources. To change this unfavorable situation and enhance the efficiency and quality of enterprise development, it is essential to have the courage to reform and innovate human resource management. Through the adoption of new technologies, talent acceptance, the cultivation of corporate culture, and employee training, enterprises can optimize human resource allocation, enhance the overall digital literacy of the company, and stimulate the enthusiasm and initiative of employees, thus enabling human resources to shine in the digital economy. Although different enterprises vary in their degree of digital transformation—with some becoming excellent examples of digital empowerment, others gradually entering the transformation and upgrading of digitally empowered human resources, and still others exploring the relevant mechanisms and pathways of digital empowerment in human resource management—digital empowerment is an inevitable trend. We must conform to the development of the new era, keep pace with the progress of social science and technology, and promote the advancement of societal development.

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