

Transformation in Organizational and Human Resource Management in the Digital Intelligence Age

Zhengyu Yang ^{1*}

¹Zhejiang Gongshang University Hangzhou College of Commerce, Hangzhou, Zhejiang, China. 311599

Abstract. This article explores the revolutionary impact of digital technology and artificial intelligence on organizational and human resource management in the era of digital intelligence. Confronted with challenges in industrial evolution, technological innovation, and customer-centric dynamics, businesses are urged to embrace innovation and instill a culture of transformation. The pivotal focus lies in propelling the transformation of organizational and human resource management in six key dimensions. Firstly, organizational systems evolve to become more open, interconnected, flexible, and adaptive. Secondly, human resource allocation diversifies, emphasizing collaborative synergy among team members. Thirdly, performance management methods underscore alignment with organizational strategy and culture, emphasizing the improvement of employees' perspective and competence. Fourthly, values management signifies a shift towards intrinsic motivation and cultural consistency in personnel management. Fifthly, leadership styles stress motivation, empowerment, and support, prioritizing an employee-centric approach. Sixthly, it underscores the value of human capital as the cornerstone of innovative incentive strategies, advocating for sustained investment in key talent. In summary, the framework advocates for innovation as a strategic imperative, recognizing the intrinsic value of individuals as the driving force behind organizational success and underscoring human resources as a pivotal driver of organizational development in the era of digital intelligence.

*Corresponding author: 172010068@zjhzc.edu.cn

1 Introduction

The progress of information technology, internet, and artificial intelligence has profoundly reshaped the interactions between customers and organizations, relationships among different organizations, and the dynamics among individuals within and outside the organizations. The widespread reach of the internet and information dissemination has fostered transparent communication, decentralized authority, and participative decision-making. In this era, every unit and individual within an organization can, to some degree, become willing innovators and entrepreneurs [1]. This empowerment equips them to respond more adeptly and adaptively to customer needs and competitive challenges. For businesses, the pivotal question revolves around their ability to employ innovative human resource management and organizational strategies to efficiently harness emerging production elements such as digital technology, knowledge, and data. The effective utilization of these elements should drive ongoing innovation and evolution across organizational culture and values, technological systems, business models, production processes, and service systems. Ultimately, this will determine whether an enterprise prospers or declines.

In a period where knowledge and innovation are increasingly acknowledged as the source of value creation, and in an era where digital technology establishes ever-closer connections between businesses and their clientele, we are witnessing a surge of entrepreneurial ideologies and business form. These encompass concepts such as "autonomous business unit," "amoeba operating," and "platforms with small teams." At their essence, these initiatives for organizational transformation aim to reshape businesses into platforms that nurture internal entrepreneurial enthusiasm. The objective is to ensure that each unit and every individual within the organization can assume the role of innovators and entrepreneurs[2]. Through this transformation, organizations seek to make the most of the novel productivity tools facilitated by innovations in information technology, enabling them to respond with greater agility, flexibility, and speed to the needs of customers and competitive pressures. In doing so, they create value for both their customers and themselves.

Organizational and human resource management now grapple with a pressing demand for metamorphosis and ingenuity to accommodate the transition from the industrial age to the digital intelligence age[3]. This paper is formulated to outline a framework and trajectory for the transformation of organizational and human resource management within the context of the digital intelligence age. Its purpose is to empower enterprises to unlock the full potential of individuals and organizations as they pursue innovation-driven, high-quality development.

2 Transition from the Industrial Age to the Digital Intelligence Era

In contrast to the industrial age, the rise of information technology and the dawn of the digital intelligence era have triggered profound transformations in societal production, lifestyles, socioeconomic development, and organizational operational paradigms. The digital intelligence era transcends the limitations of physical factors on economic progress and fundamentally reshapes the operational principles and methods of value creation in the business world[4]. In the domain of organizational and human resource management, several new challenges demand attention, particularly pertaining to industrial evolution, technological innovation, and customer-centric dynamics.

2.1 Challenges of Industrial Evolution

By early 2023, the utilization of AIGC (Artificial Intelligence and General Cognitive) productivity tools was witnessing an explosive surge. In just two months, the monthly active user count for ChatGPT had surpassed 100 million, establishing it as the fastest-growing consumer application in history. Over the past few decades, the information revolution has enriched human cognitive capabilities. In the digital intelligence age, the core of business success pivots on adaptability and innovation. The encouragement of innovation, the cultivation of a culture of perpetual transformation, and the exploration of extensive innovative potential through an all-encompassing inventive spirit have emerged as the primary focal points for organizations [5,6]. Given the necessity for agility and innovation, novel collaborative work models such as team-based production are gaining dominance in the landscape of production organization. The challenge lies in how to empower teams with responsibilities and rights, ignite the flames of innovation, and render them more agile, efficient, and responsive.

2.2 Challenges of Technological Innovation

The ramifications of technological progress (including manufacturing technologies, information technology, information management systems, and digital intelligence technology) on human resource management activities and processes have aroused significant scholarly interest[7]. Digital technologies have reconstructed the interactions between customers and organizations, as well as those within organizations and among individuals. The reduction in costs related to information exchange and storage, facilitated by digital intelligence, has paved the way for transparent information flow both inside and outside the organization. This, in turn, encourages a shift towards a more flexible and agile organizational structure. Nevertheless, it also imposes fresh requisites for the renovation of organization and employee management.

2.3 Challenges of Customer-Centric Dynamics

In the digital intelligence era, the influence of cross network externalities has driven two fundamental forces behind the transformation of enterprise management: a focus on customer value and the dynamics of alternative competition[8]. Customers, as external stakeholders, are increasingly integrated into the business service process[9], aiding organizations in harnessing and efficiently utilizing consumer-derived information. This, in return, bolsters innovation in product and service offerings and instigates comprehensive transformations within enterprises. Customers stand as the impetus for organizations' perpetual adaptation to market shifts, compelling the workforce to adopt a proactive and innovative mindset. From the perspective of human resource management, faced with the complexity and variability of customer demand and market competition environment, how to enhance the links inside and outside the organization, improve the degree of incentive and authorization of individual employees, and promote employees to constantly innovate and serve customers has become a new challenge for HR roles and responsibilities.

3 Transformation in Human Resource Management in the Era of Digital Intelligence

In response to the core demands of fostering innovation within enterprises during the digital intelligence era, the functions of organizational and human resource management must extend across various tiers, encompassing the organization, teams, and individual employees. This extension necessitates a structured reevaluation of resource allocation within and outside the organization and the numerous interactions between enterprises and their employees, as well as between managers and the workforce. Drawing upon an analysis of pertinent literature, the transformation of organizational and human resource management in the digital age manifests primarily in six key aspects:

3.1 Evolution of Organizational Systems

3.1.1 Creating an Open Organization

Scholars of organizational theory are shifting their gaze from the rational systems and interpersonal dynamics within an organization's confines to the broader realm of customers and the organization's competitive strategies in the outside world. In the age of networks, with the diminishing costs of information, transactions, and collaboration, organizations are actively embracing enhanced information exchange and close collaboration as new strategic choices. This shift is fostering the development of open systems and the emergence of ecosystem-like structures. Thanks to the advancement of digital intelligence technology, platform-based organizations continue to expand in

scale. Networked organizational models, emphasizing participation, shared efforts, cooperation, decentralization, flexibility, trust, and learning, are seeing increasingly widespread adoption[10]. As a result, organizational management is transitioning to be more externally oriented, with a sharp focus on customers, markets, alliance partners, and the environment. This movement marks a shift away from hierarchical command-and-control structures to market-driven, cooperative ecosystems, and self-evolving organizations.

3.1.2 Fostering an Empowering Organization

Secondly, organizational roles are transitioning from control to empowerment. Fueled by information and digital technologies, employees now possess a substantial informational edge when dealing with customers amidst swiftly evolving external landscapes and shifting customer expectations. Consequently, organizations must empower both individuals and entities at the forefront of customer service, amplifying employees' self-motivation and propelling them to autonomously innovate and align actions with the company's values[11]. Organizational structures are morphing into interconnected and organic cooperative systems. Modes of directive communication within these organizations are shifting from predominantly top-down to multi-directional, embracing employee-authorized autonomy, cultivating fresh collaborative partnerships between companies and employees, and fostering an environment conducive to innovation.

3.2 Transformation in Human Resource Acquisition

3.2.1 Evolving Workforce Models

In the context of diverse employment strategies [12], a plethora of labor resource types has surfaced, including specialized core personnel, outsourced labor, gig workers, cooperative think tanks, independent intellectual property contributors, and consumer labor. This diversity empowers companies to make choices. They can opt to hire and maintain top-tier talent to construct their core competitiveness and fortify their position, while simultaneously outsourcing non-core functions or improving operational efficiency through algorithmic management. This approach facilitates business agility, innovation, and competitive advantages characterized by cost-efficiency and differentiation. Organizations increasingly prioritize the perpetual development of their core talent pool through initiatives such as organizational and talent development. They create environments and mechanisms that kindle their employees' entrepreneurial spirit. This transformation significantly drives the restructuring of the labor composition within companies, presenting profound challenges to the organization's management systems. This encompasses incentive and management methods, leadership

activities, organizational communication networks and work patterns, and team collaborations.

3.2.2 Shifts in Team Configuration

Team models that fuel employee vitality and boost entrepreneurial capabilities are fostering customer-centricity and the exploration of more value creation opportunities. This transition necessitates organizations to allocate personnel, establish objectives, and offer dynamic incentives at the team level. It inspires teams to work autonomously and self-motivate. For instance, during the recruitment process, candidates' suitability for the position, the organization, their future roles within work teams, and compatibility with other team members must all be considered. This transformation reframes the recruitment process from an individual-centric approach to one that also evaluates team roles and collaborative fit [13].

3.3 Transformation in Performance Management

3.3.1 Evolving Performance Management Concepts and Methods

In the digital intelligence era, the factors contributing to an organization's success have shifted, challenging the control systems that were vital for success in the traditional industrial age. The success in industrial age relied on factors like scale production, role clarity, specialization, and uniformity. Many companies are making the transition from Key Performance Indicator (KPI)-centered performance management to Objectives and Key Results (OKR) management[14]. This shift encourages employees to become "all-around active participants" in business activities, fostering a sense of self-management and individual initiative in value creation. The achievement of organizational and employee performance will increasingly depend on how organizations can discover, utilize, and develop their employees' creativity and potential. It entails boosting employee enthusiasm, nurturing a sense of responsibility and dedication, and empowering front-line personnel who possess real-time information with decision-making and action authority. This approach mobilizes and guides organizational resources to accomplish the organization's objectives.

3.3.2 Changes in Performance Management Tools

Propelled by digital technology, algorithmic management has supplanted manual management in some easily standardized and quantifiable roles, such as delivery drivers and ride-sharing drivers. Internet platform companies have elevated organizational efficiency and performance output by fortifying on-site data collection, process analysis, and efficiency management[15,16]. Algorithms have enabled

organizations to achieve an unprecedented scope, depth, and intensity in performance management.

3.4 Transformation in Cultural Values Management

3.4.1 The Rise of Values Management

Amid the escalating complexity and unpredictability of corporate management, the concept of Managing by Values (MBV) was first introduced over a decade ago by Garcia and Dolan[17]. Dolan astutely pointed out that traditional management models, such as directive management and goal-based management like Management by Objectives (MBO), often fall short of their objectives. This shortfall doesn't result from overly challenging goals but rather from the unforeseeable shifts in the external environment. Values management, on the other hand, cultivates a shared set of values among employees, providing them with a guiding compass for their work behaviors.

3.4.2 Values Management: Paving the Way for an Evolution in Performance Management

In the era of digital intelligence, the process-based system is no longer compatible with the requirements of innovation stimulation. Performance management needs to change from a top-down, directive approach to a bottom-up, commitment-driven approach. The manner in which employees are guided will shift from external institutional restrictions to internalized identification and guidance embedded within the company's culture, mission, and values. The human resources management model will shift from exclusively focusing on HR processes, technology, and systems to also encompass value concepts and cultural development. It will transition from relying solely on rules and regulations for employee governance and management to adopting a more democratic and humanistic approach. This strategy aims to kindle the intrinsic potential of employees, enhance their identification with and sense of belonging to the company, and cultivate their spirit of innovation [18].

3.5 Transformation in Leadership Styles

3.5.1 Evolving Employee-Centric Leadership Styles

In the era of digital intelligence and innovation-driven business, the younger workforce places a premium on individualism, self-fulfillment, and the significance of their work. This shift has given rise to changes in leadership styles. The development of shared leadership, servant leadership, and humble leadership models signifies a shift from a leader-centric perspective to an employee-centric approach[19]. Management behavior should be centered on employees, shifting from a top-down power-centric

approach to bottom-up empowerment. Vibrant and entrepreneurial organizations thrive when they foster cultures of equality, democracy, responsibility, action, and results. Leaders in such organizations aim to create an environment that encourages proactive responsibility and spontaneous innovation. They increasingly lead employees through communication, negotiation, motivation, and empowerment, respecting employees' responsibilities and values while nurturing their initiative and creativity[20].

3.5.2 Changes in Team Management Approaches

Management models centered around teams necessitate the establishment of motivating goals that encourage teams to operate autonomously. They seek to create a working environment where teams self-manage and boost innovation by proactively connecting with external resources and information. Managers need to provide resources, eliminate obstacles, and facilitate progress to enable teams to continually innovate and respond to external market and customer needs with greater flexibility and agility [21].

3.6 Transformation in Incentive Strategies

3.6.1 Heightened Focus on Human Capital Value and Returns

In the context of the digital intelligence era, individuals retain their central role, with technology serving as a complementary structural component. Human resources are pivotal in orchestrating resource integration and value creation[22]. This innovative and entrepreneurial human capital represents a scarce resource that many companies emphasize nurturing, sustaining, and continually motivating from a long-term perspective. This strategy constructs a core competitive advantage that is challenging to replicate. Compensation incentives will increasingly become integrated into the full lifecycle management of talent, with a focus on innovative capabilities, the willingness to innovate, and entrepreneurial spirit shaping. For example, many entrepreneurs grant their human capital similar equity status as investment capital. Companies must make continuous investments in key human capital and maintain them over the long term to ensure ongoing value creation.

3.6.2 Teams as the Cornerstone for Compensation Incentives

As tasks grow more intricate, team members increasingly rely on each other, and breakthroughs in technology and business innovation are achieved through cooperation and collaboration. Compensation allocation will increasingly revolve around teams, based on the innovation and entrepreneurial outcomes and value creation of those teams.

4 Conclusion

In today's business landscape, embracing innovation and change is not just an option; it's a fundamental survival rule for companies. Organization and allocation of various production resources, the pursuit of innovation, and ultimately the driving force to promote the continuous development of the company is "people". The management and motivation of "human resources" have evolved to become the wellspring of core competitive capabilities for enterprises in the era of knowledge and innovation. Human resources management has transformed from a focus on individual growth and talent development to the art of effectively organizing and inspiring these resources [23].

We must place our faith in the spirit of innovation, cultivating it within each employee. This approach further underscores our reverence for human values in this new era, shining a light on the brilliance of our shared humanity. Through this, we can steer our development forward via the vessel of innovation.

References

1. A. Nicolás-Agustín, D. Jiménez-Jiménez, F. Maeso-Fernandez. *INT J MANPOWER*. **43** (2), 395-410(2021)
2. Liu, Gordon, K. Rong, and W. W. Ko. *INT J HUM RESOUR MAN*. **31**, 2695-2713(2020)
3. Stone, D. L., Deadrick, D. L., Lukaszewski, K. M., & Johnson, R. *HUM RESOUR MANAGE R*, **25** (2), 216-231(2015)
4. Goldfarb, A. and R. C. Tucke. *J ECON LIT*. **57** (1): 3-43(2019)
5. Cai Li, Zhang Yuli, Chen Jin, Wei Jiang, Jing Runtian, Lu Jiangyong, Liu Zhiyang. *Foreign Economics & Management*. **45**(1) (2023)
6. Turner T, Pennington W. *SMALL BUS ECON*, **45**(2): 447-463(2015)
7. Stone, D. L., Deadrick, D. L., Lukaszewski, K. M., & Johnson, R. *HUM RESOUR MANAGE R*, **25** (2), 216-231(2015)
8. Qi Yudong, Xiao Xu. *Management World*. **6**:135-152(2020)
9. Thomas A. D. *J BUS RES*, **86**(5): 269-280(2018)
10. Ciborra C U. *OS*, **7**(2):103-118(1996)
11. LUO Zhong-wei, LI Xian-jun, SONG Xiang, LI Ya-guang. *Chin Ind Econ*. **9**:174-192(2017)
12. Puranam P, Alexy O, Reitzig M. *AMR*, **39**(2): 162-180(2014)
13. Bantel, Karen A., and S. E. Jackson. *SMJ*. **10**:107-124(2010)
14. Engelhardt, Philipp, and K. Müller. "OKRs - Objectives and Key Results." (Controlling, 2017).
15. Waldkirch, Matthias. *IJHRM*. **1**:1-36(2021)
16. Zhang, Yucheng, et al. *JBR*. **133**:34-50(2021)

17. Dolan S L , Garcia S . J Man Dev, **21(2)**:101-117 (2002)
18. Iivari, J., & Iivari, N. **53**(5), 509-520(2021)
19. H Tang, L Long, R Zhou. J. Membr. Sci. **28**: 377-8. (2015)
20. Tang, G. Academy of Management Annual Meeting Proceedings 1:15207-15207. (2013)
21. Harsch K , Festing M. HRM, **7**(2019)
22. Leonardi, P., and Contractor, N. HBR, **96(6)**, 70~81.(2018)
23. Chadwick C, Dabu A. OS, **20**(1): 253-272.(2009)