Front. Bus. Res. China 2024, 18(2): 83–94
DOI 10.3868/s070-009-024-0006-8

RESEARCH ARTICLE

Motivations, Mechanisms, and Paths of Business Model Innovation Driven by the Digital Economy*

GU Limin[a], ZHANG Xiao[b]

Abstract

The digital economy, underpinned by fundamental digital technologies such as artificial intelligence, blockchain, cloud computing, and big data, facilitates business model innovation, thereby enabling firms to achieve distinctive competitive advantages. While the digital economy creates more development opportunities for businesses, it also subjects them to higher levels of competitive threats. Therefore, business model innovation is both a proactive choice to perceive and exploit external opportunities and a reactive adaptation to identify and mitigate external threats. The digital economy drives business model innovation through digital information, internet platforms, digital technologies, and new business models and formats. As such, firms should utilize data resources innovatively to update their value logic, build digital ecosystems based on internet platforms, enhance digital technology integration to enable agile responses, and gain insights into emerging economic formats to promote cross-industry integration and innovation.

Keywords digital economy; business model innovation; digital information; internet platform; digital technology

1 Introduction

The *14th Five-Year Plan for the Development of the Digital Economy* released in 2022 suggests that the digital economy is the primary economic paradigm succeeding the agricultural and industrial economies. This new economy is pivotal in reorganizing global factor resources, transforming global economic landscape, and revolutionizing global competitive dynamics. At present, the influence of the digital economy pervades various sectors at an unprecedented scale. Enterprises, as fundamental microeconomic entities, engage in the digital economy either proactively or reactively. Concurrently, innovative business models are proliferating, including community economy, platform economy, sharing economy, short video economy, live streaming economy, and metaverse business models (Guo et al., 2023). These models not only fuel the innovative drive among business practitioners but also facilitate ongoing advancements in management theory. Research on business model innovation within enterprises is robust and generally revolves around three thematic areas: (1) antecedents for business model innovation, including managerial cognition (Mezger, 2014), market demand

* This paper is translated from *Nanjing Journal of Social Sciences* 南京社会科学, 2023, (12), 36–43.
[a] Institute of Regional Modernization, Jiangsu Provincial Academy of Social Sciences, Nanjing 210004, China
[b] Business School, Nanjing University, Nanjing 210093, China

(Ghezzi et al., 2015), organizational learning, and organizational resources and capabilities (Wu & Zhao, 2017); (2) the effects of business model innovation on enterprise performance (Yang et al., 2020) and competitive advantages (Giesen et al., 2007); and (3) the procedural mechanisms underpinning business model innovation (Andersen et al., 2013). Despite the growing scholarly attention to business model innovation within the context of the digital economy in recent years, extant research exhibits notable limitations.

First, while some studies have investigated the implementation strategies and mechanisms of business model innovation in the digital economy, they often focus exclusively on new business phenomena unique to this era. Such focuses underscore the distinctiveness of these models compared to traditional value creation approaches, consequently overlooking the proactive role of enterprises as microeconomic actors in this transformative process. In essence, there is insufficient emphasis on the drivers of business model innovation in the digital economy. Second, although numerous studies address specific facets of business model innovation, such as those based on platforms, big data (Li & Xia, 2013), or artificial intelligence (AI) (Sjödin et al., 2021), it is necessary to recognize that these elements, regardless of their rapid development, fundamentally represent methods and capabilities introduced by the digital economy to enhance enterprise value creation. Scholars have not yet effectively explored the universal principles underlying how the digital economy reshapes enterprise operational logic and compels firms to redesign their entire value networks. Third, the term “digital economy” is ubiquitously employed, which can be reflected by the levels of digitalization at both macro (national and regional) and micro (organizational) scales. This includes the extensive adoption and integration of fundamental digital technologies such as AI, blockchain, cloud computing, and big data within enterprises (Qi & Xiao, 2020). As a result, while many studies recognize the digital economy as a contextual backdrop for examining its relationship with business model innovation, there remains a scant exploration into how the inherent qualities of the digital economy empower enterprises to innovate their business models.

Building on the discussion above, this paper first delineates the internal and external drivers of business model innovation, analyzing them from both proactive and reactive standpoints. Subsequently, it probes into the internal mechanisms at the micro level through which the digital economy drives business model innovation, grounded in the fundamental concepts and essence of the digital economy. Finally, the paper proposes foundational paths for business model innovation in the digital economy era.

2 Motivations of Business Model Innovation in the Context of the Digital Economy

The widespread diffusion and application of new-generation digital information technologies have made business model innovation an increasingly observed phenomenon. While there is no universally accepted definition of business model innovation, it is agreed that its core element is value creation. Business model innovation can be described as the process through which a company adjusts or reconfigures aspects of its operations, structures, and governance to transform the foundational logic of value creation (Amit & Zott, 2012). This transformation often involves exploring novel methods to create and capture value, thus establishing new

paradigms for how value is both created and captured (Casadesus-Masanell & Zhu, 2013). Given the crucial role of knowledge in this process, business model innovation is also viewed as a creative amalgamation and utilization of knowledge across different domains (Foss & Saebi, 2017). It enables companies to explore, learn, and refine their interactions with the environment, thereby enhancing their adaptability to environmental uncertainties (Baden-Fuller & Mangematin, 2013).

Despite its importance in securing sustainable competitive advantages, business model innovation is not a universal imperative for all firms within the digital economy. According to the *China Enterprise Digital Transformation Index 2020* released by Accenture and the China Industrial Control Systems Cyber Emergency Response Team (CICS-CERT), only 22% companies leverage real-time data to adjust and optimize production processes. This raises a question: What does the digital economy fundamentally mean for enterprises as microeconomic entities? This paper argues that the digital economy, as a core external environmental characteristic, fundamentally alters the underlying logic of business competition. On the one hand, it provides new opportunities for development, such as facilitating connections between enterprises and customers in supply-demand scenarios and enhancing precise supply-demand matching (Zheng & Cao, 2023). On the other hand, it exposes many companies to heightened competitive threats. Consequently, the external drivers for business model innovation in the digital economy stem primarily from two sources: the perception and exploitation of external opportunities, and the identification and mitigation of external threats. The former involves proactive strategic actions characterized by extensive planning and significant managerial cognition, while the latter represents a reactive motivation that arises in response to potential or actual losses in value. In this dynamic, external learning and reinvention, predicated on existing organizational resources, capabilities, and structures, assume critical importance.

2.1 External Motivations of Proactive Business Model Innovation: Leveraging Opportunities

The evolution of the digital economy has unveiled numerous market opportunities for enterprises, with business model serving as the practical mechanisms through which companies seize and exploit these external prospects. To merge the logic of the digital economy with traditional paradigms of value creation, delivery, and capture, business model innovation becomes indispensable. The rapid advancement of digital technologies such as big data, Internet of Things (IoT), cloud computing, and AI has facilitated a comprehensive interconnectedness, enabling enterprises to access opportunities across diverse industries and domains. For instance, Zhang et al. (2019) have examined the phenomenon of cross-industry disruption in the internet era, focusing on Shangpin Home Collection (hereinafter referred to as Shangpin). They observe that Shangpin leverages its robust information technology capabilities to continuously assimilate knowledge from various sectors, thus enabling cross-industry operations that exploit external opportunities within the furniture sales, production, and renovation industries. Furthermore, with data emerging as a pivotal resource, companies are now combining this asset with traditional resources such as human and brand resources to forge new opportunities. In the digital economy era, traffic flow has ascended as a critical

medium for value creation. Industries like short videos, news, and film and television are experiencing a "traffic is king" trend. Essentially, traffic flow represents the data assets of a company, with the commercial strategy to convert this traffic into profits delineating a new logic of value creation in the digital economy. Lastly, the rise of new economic models and formats has spurred numerous market opportunities. For instance, China's sharing economy initially takes root in the transportation sector with initiatives like DiDi Chuxing and HelloBike. Promptly, business practitioners have recognized and adapted to this opportunity, thus catalyzing the development of additional business models such as shared power banks and shared office spaces across various sectors, including dining, living, and transportation.

2.2 External Motivations of Proactive Business Model Innovation: Managerial Cognition

An expanding corpus of research underscores that a company's proactive initiatives are significantly influenced by the cognitive orientations of its top management. Particularly, if senior executives, and notably the top leader, lack a strategic understanding of business model innovation, the company is unlikely to engage proactively with the opportunities presented by the digital economy. From a viewpoint of capabilities, managerial cognition encapsulates a company's ability to discern, perceive, and exploit insights from the external environment, which enables continuous scanning and searching of the digital economy landscape from an elevated perspective and wider scope. This allows top management to align these insights with the organization's specific context, and subsequently make informed decisions concerning the logic of value creation. The perceptual and utilization skills of managers are crucial for devising business model innovations. Through cognitive processes such as analogical reasoning and conceptual combination, senior managers are empowered to reimagine and reconstruct the company's business models. In addition, from a psychological standpoint, senior executives characterized by innovativeness and a propensity for adventure are more likely to enact proactive innovation decisions. Their enthusiasm for the possibilities unleashed by the digital economy often drives them to transcend conventional boundaries and pioneer new value creation logics. In their study of the industrial evolution of TAOBAO Villages in China, Liu and Chu (2017) find that attributes such as innovation and risk-taking are pivotal. Pioneering companies frequently spearhead business model innovation, whereas followers typically adopt this innovation through imitative learning.

2.3 External Motivations of Reactive Business Model Innovation: Avoiding Threats

Within the digital economy, companies, particularly those in traditional sectors, often encounter escalating external threats and challenges. One significant risk is technological stagnation, which can relegate a company to a passive stance, potentially culminating in its decline. For instance, in 2010, telecommunications giant Nokia enjoyed approximately 35% of the mobile terminal market, far ahead of other competitors with a market share of 20.6%. However, with the onset of the smartphone era, Nokia rapidly lost its market dominance and eventually abandoned its core operating system. In today's fast-evolving digital landscape, where new technologies, products, and business models emerge with increasing frequency,

companies are compelled to systematically reassess their existing business logics and expedite transformative innovations. Furthermore, the digital economy alters consumer demands and obscures the boundaries between enterprises. This shift necessitates changes in key components of business models, including customer value propositions, value creation, delivery, and capture mechanisms. Such dynamics compel companies to innovate their approaches to value creation. The prevalence of cross-industry operations complicates the identification of competitors, and the competitive frameworks of entire industries or sectors can be swiftly disrupted. To counteract these competitive threats, especially from new market entrants, companies must innovate their business models. For example, traditional retail platforms like Red Star Macalline and IKEA face threats to the core elements of their business models at various levels and to varying degrees in the digital economy, thus catalyzing their impetus for business model innovation and driving the design and implementation of these innovations (Geng & Jing, 2023).

2.4 External Motivations of Reactive Business Model Innovation: Explorative Learning

When companies are driven to innovate by external threats and competitive pressures, they often face constraints on their available resources and capabilities, making it challenging to mobilize and allocate extensive internal and external resources effectively. In such contexts, learning from the practices of emerging and successful companies through imitation and explorative organizational learning becomes a critical strategy for overcoming challenges and surmounting barriers. The ambidextrous innovation theory posits that explorative innovation capitalizes on existing knowledge, enabling firms to continuously innovate by building upon their current knowledge bases. For instance, the traditional e-commerce industry has experienced significant disruption with the rise of live streaming. During the first day of presales at the 2021 Double Eleven shopping festival, a prominent live streaming session generated sales of 10.6 billion yuan, which fundamentally altered people's perceptions of live streaming commerce. However, platforms such as Kuaishou and Douyin, along with e-commerce behemoths like Taobao, JD.com, and Xiaohongshu (also known as Little Red Book), have swiftly adapted by utilizing their platform technologies to assimilate the live streaming model, refine sales strategies, and innovate operational frameworks to generate new value. The inherent digital technology capabilities of many platforms facilitate the rapid emulation of emerging business models. As such, an organization's orientation toward external learning becomes a pivotal internal driver of business model innovation. Shang and Jiang (2021) find that in the context of the industrial internet, innovation learning such as open learning and internet innovation ecological creation exerts a positive influence on business model innovation within manufacturing enterprises.

3 Intrinsic Mechanisms of Business Model Innovation Driven by the Digital Economy

In the digital economy era, enterprises pursue business model innovation to secure competitive advantages, motivated by a blend of proactive and reactive internal and external

drivers. As understanding of the digital economy becomes clearer , it becomes apparent that the digital economy propels business model innovation across various sectors. The digital economy refers to economic activities that capitalize on digital information (including data), as fundamental resources. It harnesses internet platforms as primary vectors for information dissemination, is fueled by advances in digital technologies, and manifests in an array of new business models and formats (Chen et al., 2022). The cornerstone elements of the digital economy, i.e., digital information, internet platforms, digital technologies, and new business models and formats, jointly underpin business model innovation through the following intrinsic mechanisms.

3.1 Digital Information Driving Business Model Innovation

In the digital economy era, the massive generation and strategic use of data have established digital information, as the most crucial factor of production and a vital resource for value creation.

Firstly, harnessing data resources to uncover latent consumer demands is fundamental to innovating business models (Yi et al., 2019). During the nascent stage of general e-commerce platforms like Taobao and JD.com, these enterprises possessed only a basic understanding of user data. This allowed niche e-commerce platforms, such as mia.com for mother and baby products and Dangdang for books, to carve out unique competitive advantages by catering specifically to defined consumer needs, thereby fostering high customer loyalty. However, as general e-commerce companies began to extensively mine their user data, their capacity to accurately discern customer preferences enhanced significantly. They transitioned from generic product recommendations to sophisticated keyword searches that employed rapid analysis of user profiles for precise targeting. This evolution gradually diminished the competitive advantage for specialized e-commerce platforms, thus contributing to their decline and the eventual dissolution of many such entities. In recent years, with the increased refinement of the operation of enterprise data resources, the private e-commerce model has been created with the core objective of increasing the repurchase rate. Private e-commerce model utilizes user data and creates new value for customers by means of the membership system, various interactive platforms, and so on. These evolving business models compel e-commerce enterprises to continually innovate and adapt based on nuanced insights derived from user data.

Secondly, data resources can be stored virtually. They can be stored, copied, and transmitted almost error-free. They have the advantages of being shareable, deliverable, and low-cost, breaking the limited supply constraint of traditional factors and greatly improving the information search efficiency of enterprises. The extensive ability to search for information both within and beyond organizational boundaries enables the creative reallocation of various types of resources, thus fostering business model innovation.

Lastly, compared to other resources, data resources offer substantial advantages in applications across multiple entities, scenarios, and business fields. Data information itself does not create value. Only through the combination of data resources and innovative multi-domain and multi-scenario applications can we realize the strategic value of data resources

and promote enterprise business model innovation. For example, Shangpin has utilized its extensive customer data to offer customized home solutions. By partnering with renovation companies, it has transitioned from a "whole house customization" model to an innovative new business model that has integrated "whole house customization" with "whole house renovation."

3.2 Internet Platforms Driving Business Model Innovation

Traditional business model theories posit that enterprises should develop adaptive and coordinating capabilities to mitigate potential risks, with various enterprises connecting through an ecological chain to conduct business activities relatively independently. However, in the digital economy era, internet platforms, distinguished by their flexibility, openness, and availability, help traditional enterprises achieve digital transformation and business model innovation. This assistance is facilitated through the digital business ecosystems established by platform enterprises.

Digital business ecosystems, underpinned by internet platforms, facilitate the sharing of information resources within the ecosystem, thereby ensuring value creation for enterprises. Platform enterprises, which are integral to these ecosystems, can provide a stable structure and ensure the consistency of the ecosystem's regulations, which in turn promotes the sharing of digital technologies and resource transfer among the entities involved. Enterprises within the ecosystem can selectively access various valuable pieces of information through the platform, enhancing their ability to share and utilize information more effectively. Digital business ecosystems rely on platforms to improve the ability of companies to cope with risk, helping them to conduct transactions in a more stable manner and providing the conditions for their business model innovation. Moreover, the digital business ecosystem changes the transaction mode and business mode of enterprises through the internet platform, which helps enterprises create more value. The establishment of these platforms provides a stable foundation for business ecosystems, shifting business activities from independent operations to platform-dependent interactions. Individual enterprises often find it challenging to meet users' diverse needs across multiple scenarios, while digital business ecosystems, focusing on co-creating value, pool the capabilities of platform enterprises to more effectively satisfy the multifaceted transaction needs of users. This collaborative approach ensures the continuation of value creation activities and fosters further business model innovations. Chen and Wang (2021) have proposed a platform-dependent upgrade strategy, which assists traditional enterprises in leveraging platforms to upgrade without sacrificing their independence within the ecosystem. Over the long term, participants in these platform ecosystems may have the opportunity to evolve into platforms themselves during the industry restructuring process, leading to a multi-dimensional platform nesting structure.

3.3 Digital Technologies Driving Business Model Innovation

Digital technologies help enterprises precisely understand customer needs. The essence of a business model centers on defining how a company delivers value to its customers, convinces

them to pay for that value, and transforms these payments into profits. In the digital economy era, users constitute the cornerstone of value creation for enterprises. The application of digital technologies facilitates the connection of previously unrelated business activities through user interactions. Digitalization allows enterprises to establish and maintain robust interactions with users, accurately identify personalized user needs, and achieve a precise alignment between external demands and internal resources and capabilities, all guided by the overarching goal of meeting user needs. Supported by various digital technologies, companies can swiftly align value delivery with customer demands, and rapidly redesign and reconfigure their resources, structures, processes, and even their entire value network. Furthermore, digital technologies facilitate the "boundless change" of enterprises (Ding et al., 2017). The growing trend of cross-industry integration exemplifies how digital technologies spur companies to develop new business models. In 2005, Haier introduced the innovative IoT management model based on Integrating Order with Personnel (*Rendanheyi*, *RDHY*)[1] in response to advancements in internet technology. This model marks Haier's transition from a traditional appliance manufacturer to a comprehensive provider of lifestyle solutions, expanding its business domains to encompass the entire IoT ecosystem, including sectors such as clothing, food, housing, transportation, health, and education. The evolution of digital technologies has simplified the process for enterprises to venture into new fields, and cross-industry business flows among companies have become increasingly common. Moreover, the continuous overlap and integration between industries, driven by the development of digital technologies, have blurred traditional boundaries between companies. These organizational cross-boundary interactions fundamentally alter the way enterprises, suppliers, and users interact, thereby catalyzing business model innovation.

3.4 New Business Models and Formats Driving Business Model Innovation

New-generation digital technologies have introduced numerous new models and formats, exemplified by Alipay, smart home, and sharing economy. These innovations fundamentally represent new business models. Thus, the advent of such models and formats acts as a catalyst, compelling other enterprises to innovate their business models through a competitive forcing mechanism. The rapid growth of online economy, platform economy, and sharing economy drives traditional enterprises to continually innovate, thereby enhancing their competitive advantages. For instance, the entry of new platform-based companies like Uber, Airbnb, and TaskRabbit into a specific niche market, has negatively impacted the performance of established enterprises in the market and altered consumer preferences toward direct product searches and online transactions (Lanzolla & Frankort, 2016). The essence of these new economic models and formats is to foster the innovative integration of digital technologies with the traditional economy. Alongside the continuous advancement of foundational digital technologies, these new models and formats are also in a perpetual state of evolution and innovation. This implies that no business model is indefinitely invincible; the

[1] This is a business model proposed by Zhang Ruimin, founder of Haier Group. It refers to the integration of employees' own value and the value they create for users. Namely, every employee should face users directly, create user value, and realize his or her own value sharing in this process.

technology-driven forcing mechanism remains omnipresent. Take the e-commerce industry as an example, the emergence of e-commerce platforms disrupts the traditional face-to-face sales model, allowing enterprises to establish virtual presences on these platforms and deliver value directly to customers through support services like express delivery and packaging. However, the burgeoning growth of short video platforms and the integration of live streaming with e-commerce models have once again transformed the logic of value creation within traditional e-commerce. Live streaming sales, by thoroughly redefining the "people, goods, and marketplace" framework, have increased transaction efficiency and enhanced brand loyalty (Guo, 2020).

4 Fundamental Paths of Business Model Innovation in the Digital Economy Era

The primary objective of business model innovation for enterprises is to create value. According to Teece's (2010) elements of business model design, a business model articulates the fundamental design or architecture through which a company creates, delivers, and captures value. Specifically, value creation involves generating products and value propositions tailored for customers; value delivery encompasses operational processes and activities designed to deliver the promised value; and value capture pertains to aspects such as cost structure, potential revenue streams, revenue models, and overall financial viability. Business model innovation, as a kind of innovation, is essentially the pursuit of a certain kind of differentiation by an enterprise, involving one or more of the processes of value creation, delivery, and capture. Thus, this study employs Teece's (2010) framework to delineate the basic paths for business model innovation in the digital economy era.

4.1 Innovatively Utilizing Data Resources to Update Enterprise Value Logic

Innovative utilization of data resources is evident at every stage of business model innovation. Firstly, value creation is the cornerstone of business model innovation. To accurately respond to rapidly changing external customer demands and innovate value propositions, enterprises must understand and analyze customer needs. Data itself does not create value; rather, the value emerges from how an enterprise utilizes data. For example, companies can segment their customer base, develop tailored service models based on specific segment data, and employ real-time data to manage diverse customer types effectively. Secondly, innovating value delivery models requires companies to redesign and enhance key business processes using multidimensional data from customers, employees, finances, and other internal and external sources. As customer needs evolve and the boundaries with competitors blur, internal business processes must align closely with external demands to enhance the efficiency of data resource utilization. Thirdly, in the digital economy era, data significantly impacts the value capture models of enterprises. For instance, "freemium" business models, which offer discounts in exchange for user data, have emerged. While these models may present certain financial and governance risks, the underlying value capture logic they embody is instructive. Enterprises can adapt this logic to their specific circumstances to innovate their profit models and achieve business model innovation.

4.2 Building a Digital Ecosystem through Leveraging Internet Platforms

In the digital economy era, competition between enterprises has evolved from traditional individual and value chain models to an ecosystem-based model. Firstly, in a digital business environment, interactions among various participants form a collaborative network that enhances value creation for customers. Enterprises must either construct or integrate themselves into digital ecosystems to deliver value to consumers, meet emerging market demands, and refresh their value propositions. Secondly, within the context of digital ecosystem-based competition, the value delivery models of enterprises can both inspire imitation and facilitate learning. The intricate network of participants within the same ecosystem transforms transactional activities from isolated interactions to recurring interactions, and from individual to multiparty engagements within the network. This shift significantly increases costs associated with opportunistic behaviors, thereby reducing their occurrence and enhancing the efficiency of innovating value delivery models. Lastly, enterprises can more rapidly and scalably capture new value from the digital ecosystem by leveraging the capabilities of business units, customers, and other ecosystem participants. Companies within a digital ecosystem should aim to capture not only performance value but also trust value, network value, complementary value, and governance value, and invest in innovation across these various dimensions (Ma & Lin, 2023).

4.3 Expanding Digital Technology Integration to Drive Agile Responses

To create value offerings based on digital technologies, enterprises must adopt an agile and customizable approach that is attuned to customer needs. Firstly, agile customer co-creation focuses on value creation. Enterprises should rapidly broaden their corporate boundaries by increasing the embeddedness of digital technologies in customer processes, while reducing complexity through a modular approach to ensure the scalability and profitability potential of digital technologies. Secondly, the application and integration of digital technologies across various business functions, including research and development, production, sales, procurement, and logistics, enable enterprises to reallocate and utilize resources more effectively. Strategic deployment of digital technologies at key points in the value chain can significantly enhance efficiency and foster innovation in value delivery models. This comprehensive integration can bolster the overall value creation process. Lastly, innovating value capture models necessitates careful partner selection. In the digital economy era, while digital technologies can address many challenges in production and manufacturing, their impact on relational dynamics is more limited. To achieve value co-creation with customers and partners, enterprises must refine their approaches to integrating digital technologies, ensuring they maintain control and sovereignty over partnerships.

4.4 Perceiving Emerging Economic Formats to Promote Cross-Industry Integration and Innovation

Firstly, to effectively create value, enterprises need to broaden their focus and enhance their vigilance in monitoring market trends. Emerging economic formats often arise abruptly and

elicit significant market responses. Therefore, companies must enhance their capabilities to detect and seize opportunities presented by these new economic formats early on, thus facilitating cross-industry integration and innovation. Secondly, cross-industry integration is inherently interactive, allowing activities that transcend enterprise boundaries to combine different businesses, technologies, and industries. This fusion often results in innovative products and services that generate new profit growth points for enterprises. However, successful integration demands that companies reconfigure their internal processes and structures to accommodate the needs of cross-industry integration and innovation. Thirdly, emerging economic formats and models frequently introduce novel ways of capturing value, which can sometimes disrupt entire industries. Integrating these new models into existing management frameworks poses a significant challenge. Companies should adopt an iterative learning approach and utilize agile microservice innovations to manage value capture effectively based on their specific circumstances (Sjödin et al., 2020).

Acknowledgments This paper is a partial result of the Key Project "Enterprise Strategic Management and Digital Transformation in the Post-Pandemic Era" of the National Natural Science Foundation of China (No. 72132005).

References

Amit, R., & Zott, C. (2012). Creating value through business model innovation. *MIT Sloan Management Review*, (3), 36–44.

Andersen, P. H., Kragh, H., & Lettl, C. (2013). Spanning organizational boundaries to manage creative processes: The case of the LEGO Group. *Industrial Marketing Management*, (1), 125–134.

Baden-Fuller, C., & Mangematin, V. (2013). Business models: A challenging agenda. *Strategic Organization*, (4), 418–427.

Casadesus-Masanell, R., & Zhu, F. (2013). Business model innovation and competitive imitation: The case of sponsor-based business models. *Strategic Management Journal*, (4), 464–482.

Chen, W., & Wang, J. (2021). Platform-dependent upgrade: Digital transformation strategy of complementors in platform-based ecosystem. *Journal of Management World*, (10), 195–213 (陈威如 , 王节祥 (2021). 依附式升级 : 平台生态系统中参与者的数字化转型战略 . 管理世界 , (10), 195–213).

Chen, X., Li, Y., Song, L., & Wang, Y. (2022). Theoretical framework and research prospect of digital economy. *Journal of Management World*, (2), 208–224 (陈晓红 , 李杨扬 , 宋丽洁 , 汪阳洁 (2022). 数字经济理论体系与研究展望 . 管理世界 , (2), 208–224).

Ding, X., Yang, Z., & Zhang, X. (2017). Organizational boundless change: A study of situation-strategy fit. *Journal of Nanjing University (Philosophy, Humanities and Social Sciences)*, (6), 16–22 (丁雪 , 杨忠 , 张骁 (2017). 组织无边界化变革 : 情境与策略的匹配研究 . 南京大学学报 (哲学・人文科学・社会科学), (6), 16–22).

Foss, N. J., & Saebi, T. (2017). Fifteen years of research on business model innovation: How far have we come, and where should we go? *Journal of Management*, (1), 200–227.

Geng, J., & Jing, R. (2023). Business model innovation of traditional retail platform companies in the context of digital economy: Paired case studies based on Red Star Macalline and IKEA China. *R&D Management*, (3), 15–35 (耿菊徽 , 井润田 (2023). 数字经济背景下传统零售平台企业的商业模式创新路径——基于红星美凯龙和宜家中国的双案例研究 . 研究与发展管理 , (3), 15–35).

Ghezzi, A., Cortimiglia, M. N., & Frank, A. G. (2015). Strategy and business model design in dynamic telecommunications industries: A study on Italian mobile network operators. *Technological Forecasting and Social Change, 90*, 346–354.

Giesen, E., Berman, S. J., Bell, R., & Blitz, A. (2007). Three ways to successfully innovate your business model. *Strategy & Leadership*, (6), 27–33.

Guo, H., Yang, Z., & Ding, J. (2023). Metaverse business model: Connotation, classification and research framework. *Foreign Economics & Management*, (3), 23–45 (郭海 , 杨主恩 , 丁杰斌 (2023). 元宇宙商业模

式 : 内涵、分类与研究框架 . 外国经济与管理 , (3), 23–45).

Guo, Q. (2020). The development motivation, current situation and trend of live e-commerce in China. *News and Writing*, (8), 84–91 (郭全中 (2020). 中国直播电商的发展动因、现状与趋势 . 新闻与写作 , (8), 84–91).

Lanzolla, G., & Frankort, H. T. (2016). The online shadow of offline signals: Which sellers get contacted in online B2B marketplaces? *Academy of Management Journal*, (1), 207–231.

Li, W., & Xia, J. (2013). Business model innovation based on "Big Data." *China Industrial Economics*, (5), 83–95 (李文莲 , 夏健明 (2013). 基于 "大数据" 的商业模式创新 . 中国工业经济 , (5), 83–95).

Liu, Y., & Chu, X. (2017). The industrial evolution of TAOBAO villages. *China Soft Science*, (2), 29–36 (刘亚军 , 储新民 (2017). 中国 "淘宝村" 的产业演化研究 . 中国软科学 , (2), 29–36).

Ma, H., & Lin, Y. (2023). How do digital platform enterprises realize value creation? A comparative case study of Yowant Network and Haier Smart Home. *Foreign Economics & Management*, (9), 1–16 (马鸿佳 , 林樾 (2023). 数字平台企业如何实现价值创造 ? ——遥望网络和海尔智家的双案例研究 . 外国经济与管理 , (9), 1–16).

Mezger, F. (2014). Toward a capability-based conceptualization of business model innovation: Insights from an explorative study. *R&D Management*, (5), 429–449.

Qi, Y., & Xiao, X. (2020). Transformation of enterprise management in the era of digital economy. *Journal of Management World*, (6), 135–152 (戚聿东 , 肖旭 (2020). 数字经济时代的企业管理变革 . 管理世界 , (6), 135–152).

Shang, Y., & Jiang, J. (2021). On the innovation path of traditional manufacturing firms' business model in the era of industrial internet. *Management Review*, (10), 133–144 (尚晏莹 , 蒋军锋 (2021). 工业互联网时代的传统制造企业商业模式创新路径 . 管理评论 , (10), 133–144).

Sjödin, D., Parida, V., Kohtamäki, M., & Wincent, J. (2020). An agile co-creation process for digital servitization: A micro-service innovation approach. *Journal of Business Research*, (5), 478–491.

Sjödin, D., Parida, V., Palmié, M., & Wincent, J. (2021). How AI capabilities enable business model innovation: Scaling AI through co-evolutionary processes and feedback loops. *Journal of Business Research*, (9), 574–587.

Teece, D. J. (2010). Business models, business strategy and innovation. *Long Range Planning*, (2–3), 172–194.

Wu, X., & Zhao, Z. (2017). The antecedents of business model innovation: A literature review and research agenda. *Foreign Economics & Management*, (1), 114–126 (吴晓波 , 赵子溢 (2017). 商业模式创新的前因问题 : 研究综述与展望 . 外国经济与管理 , (1), 114–126).

Yang, J., Zhang, Y., Han, W., & Ye, W. (2020). Can top management team shape new ventures' competitive advantages through business model innovation? Empirical evidence from CPSED II Database. *Journal of Management World*, (7), 55–76, 88 (杨俊 , 张玉利 , 韩炜 , 叶文平 (2020). 高管团队能通过商业模式创新塑造新企业竞争优势吗 ?——基于 CPSED Ⅱ数据库的实证研究 . 管理世界 , (7), 55–76, 88).

Yi, X., Chen, Y., & Wei, Y. (2019). Research on several major theoretical issues about the digital economy: Based on the general analysis of modern economics. *Economist*, (7), 23–31 (易宪容 , 陈颖颖 , 位玉双 (2019). 数字经济中的几个重大理论问题研究——基于现代经济学的一般性分析 . 经济学家 , (7), 23–31).

Zhang, X., Wu, Q., & Yu, X. (2019). The logic of cross-boundary disrupt innovation of enterprises at internet age. *China Industrial Economics*, (3), 156–174 (张骁 , 吴琴 , 余欣 (2019). 互联网时代企业跨界颠覆式创新的逻辑 . 中国工业经济 , (3), 156–174).

Zheng, Q., & Cao, J. (2023). The basic logic and path selection of the integration of digital economy and real economy. *Jiangsu Social Sciences*, (1), 95–102 (郑琼洁 , 曹劲松 (2023). 数字经济与实体经济融合的基本逻辑及路径选择 . 江苏社会科学 , (1), 95–102).