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Enterprise Business Model Innovation in the Platform Economy: A Case Study of Haier Group

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Abstract. In the context of the platform economy, traditional enterprises are confronted with an increasingly intricate and dynamic external landscape, necessitating frequent strategic adjustments to secure sustainable competitive advantages. This paper adopts an exploratory single-case study methodology, focusing on Haier Group, to delve into the evolutionary process of business model innovation in digitally transformed enterprises under the sway of the platform economy, from the standpoint of value co-creation. The study delineates that Haier Group's digital transformation has traversed three distinct phases: exploration, development, and expansion. A comparative analysis of these phases reveals a progression in the business model innovation journey of digitally transformed enterprises from platform mode to community mode and ultimately to ecosystem mode. This examination of the evolution of business model innovation in digital transformation enterprises holds significance for the practical implementation of business model innovation strategies within the digital transformation landscape.

Keywords. Platform Economy, Business Model, Business Model Innovation, Rendanheyi

1. Introduction

In 2021, the National Development and Reform Commission and other departments issued the "Opinions on Promoting the Normative and Healthy Development of the Platform Economy," which explicitly defines the platform economy as an emerging economic system primarily based on internet platforms, driven by core technologies of the new generation, and supported by network information infrastructure. It emphasizes the adherence to market principles, adaptation to the developmental laws of the platform economy, establishment of sound rules and regulations, and optimization of the environment for platform economy development. Traditional enterprises in China, with their large scale, often find their conventional development models inadequate when facing rapidly changing market demands. However, some enterprises that have pioneered business model innovation, such as Haier Group, have already achieved some breakthrough victories. Founded in 1984, Haier Group is the world's leading provider of solutions for better living and digital transformation and is committed to "creating

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infinite possibilities with a borderless ecology", creating infinite possibilities for better living with users, and creating infinite possibilities for industrial development with ecological partners. As a representative of the real economy, Haier continues to focus on industry, always focusing on users, adhering to original technology, and laying out three major segments: smart living, big health and industrial Internet. Through the construction of digital platforms, Haier Group has established a brand-new value ecosystem, enhancing not only the efficiency of value creation but also bringing shared value to users, enterprises, and stakeholders, injecting new vitality into economic growth. Although the advantages brought about by digital transformation are significant, many traditional enterprises encounter significant difficulties in pursuing business model innovation. In fact, fewer than half of enterprises successfully achieve innovation. Therefore, how to facilitate smooth business model innovation for enterprises has become a common focus of academia and practice.

The importance of business models in enterprise development is self-evident. In past business competitions, strategic advantages and uniqueness played a crucial role in sustaining enterprise competitiveness. However, with the rise of the platform economy and the maturity of digital technology, future competition among enterprises may be more influenced by business models and their innovations. Entrepreneurs may be able to discover new business models based on their abilities and experiences, but the process of business model innovation is fraught with unknown challenges and risks. Business model innovation under the platform economy is based on digital technology, implying that the innovation process and new models may to some extent conform to the characteristics of digital economic development. This innovation may impact traditional trading models, operational methods, and interaction modes between enterprises and users, thereby affecting the overall economic structure of enterprises. Especially for mature enterprises with entrenched thinking patterns, business model innovation may face multiple challenges. Challenges may arise from established operating methods, organizational structures, and concerns about the risks and uncertainties that new models may bring. Therefore, even if enterprises recognize the importance of business model innovation, they need to overcome the constraints of entrenched thinking, courageously face change, seek breakthroughs, and adapt to the development needs of the digital economy era.

The transformation process of enterprise business model innovation with platforms as carriers increases the openness of enterprises, facilitating greater stakeholder participation. Based on this, this paper, through a longitudinal exploratory case study method and from the perspective of value co-creation, primarily addresses whether there are significant changes in the innovation process of enterprise business models with the evolution of the platform economy environment, and specifically what forms these changes manifest. This not only enriches the relevant research on traditional enterprise business model innovation from a perspective angle but also holds significant practical implications for promoting the deep integration of the platform economy with traditional enterprises and driving enterprise digital transformation practices.

2. 2. Literature Review

2.1. Platforms and the Platform Economy

The term "platform" has a long history of usage in various fields such as economics, management, business administration, marketing, among others. Initially, the term "platform" was associated with developing technological solutions aimed at facilitating various activities within companies. According to Schweiger et al.(2016)[1], a platform can be defined as a digital infrastructure (hardware and/or software) capable of running various applications; or more broadly, as a limited and clearly defined purpose. This conception implies a technical interpretation of platforms. According to Parker et al.(2016)[2], a platform is defined as a new business model that utilizes technology to connect people, organizations, and resources in an interactive ecosystem, where remarkable value can be created and exchanged.

Kim (2016)[3] proposed three important characteristics to describe platforms: two-sided markets, network effects, and business ecosystems. Two-sided markets refer to the platform's ability to act between different types of consumers and to match value between these different types of consumers. Besides, a platform needs a ‘network effect’, which tends to radically strengthen the advantages of the platform itself as well as those for participants. Also, a platform typically emerges in the context of modular industries or industry ecosystems in order to generate revenue and continued growth. Chinese scholar He Hongchao (2004)[4], starting from the perspective of the physical economy, analyzed the cooperative competition behavior of large domestic real estate enterprises at that time. Based on this, he first proposed the concept of the "platform economy" and pointed out that the emergence of the platform economy, like any other form of economy, is to meet the objectively existing market needs. He believes that the platform economy is a brand-new cooperative competition system composed of participants, and participants in the platform can equitably enjoy the benefits brought by the new system through cooperation. In recent years, domestic research on the platform economy has mostly started from the perspective of the internet economy, emphasizing the importance of information technology and big data development for the development of platform enterprises. Luo Min and Li Liangyu (2015)[5] proposed the business logic of the Internet era, namely the platform model under the logic of community, where platforms enhance the ability of business models to arrange under information and communication. In summary, platforms bring new opportunities for value creation, acquisition, and transfer, thus enterprises need to innovate their business models through value arrangement or reconstruction, re-intermediation or disintermediation, among other ways[6].

2.2. Business Model and Business Model Innovation

The term "business model" first appeared in computer science journals in the 1970s, describing the associations and structures between data and processes. Magretta (2002)[7] suggests that the term originated from the widespread use of spreadsheet software, which allowed users to conveniently modify parameters based on different assumptions to generate various planning scenarios. Osterwalder and Pigneur (2010)[8] provide a comprehensive explanation of the business model, identifying nine key components: customer segments, value propositions, channels, customer relationships, key resources, key activities, key partnerships, revenue streams, and cost structure. With this framework, companies can more easily describe their business models.

The related concept is business model innovation, which also involves the realization of the business model. Business model innovation can be defined as "changes in the business logic that are new to the firm, but not necessarily new worldwide, and must lead to observable changes in business model practice" (Bouwman et al, 2008)[9]. The introduced changes may be triggered by technological developments (such as social media, the Internet of Things, big data), market conditions (competitive pressures), or even political decisions (regulatory laws). Companies responding to these decisions need to take appropriate actions to change their day-to-day operations, which is reflected in their business models.

With the rapid development of technology and dynamic changes in the market, business model innovation has become a necessity for companies to operate in the market. Business model innovation is driven by a variety of factors, which can be categorized into external factors (e.g., competitive environment, generation of new technologies, shift in company strategy, etc.) and internal factors (e.g., managerial perceptions, change in resource capabilities, etc.), where platforms may be the external factor that drives firms to innovate in the context of their business models. In terms of external factors, Landau et al. (2016)[10], through a study of firms seeking to enter emerging markets, found that when firms enter emerging markets are faced with a mismatch between market demand infrastructure and resources, and deficiencies in the firms' own organizational structure, which leads to change. This suggests that changes in the market are one of the main factors contributing to business model innovation. In terms of internal factors, Feng Xuefei and Dong Dahai (2015)[11] believe that the affirmative cognition of the head managers of the enterprise for business model innovation has a decisive role, and the support of managers for business model innovation is the wind vane to complete the transformation of the enterprise.

3. Analysis of Haier Group's Business Model Innovation Under the Platform Economy

Since its establishment in 1984, Haier's development strategy has undergone continuous changes, but it has always adhered to the development philosophy of "putting user value at the center." Haier's innovation has always been centered around user needs. In 2005, Haier began to envision layout for digital transformation: during this period of development strategy, Zhang Ruimin (founder and honorary chairman of the board of directors, Haier Group) first proposed the new business model of "Rendanheyi" (Integration of Individual and Organization) and began to transition from the traditional enterprise's "production-inventory-sales" mode to the "just-in-time supply under zero inventory" mode.

3.1. Exploration Phase of the New Model: Rendanheyi 1.0

"Rendanheyi" (Integration of Individual and Organization) is a response to the requirements of decentralization and disintermediation in the era of the Internet of Things and the platform economy. It entails disruptive and systematic continuous dynamic changes in strategic positioning, organizational structure, operational processes, and resource allocation across three dimensions: enterprise, employees, and users.

In 2013, Haier introduced the concept of "Micro-enterprises," decomposing the organization into independent micro-enterprise networks, with the aim of establishing a

maker platform to transform employees into true entrepreneurs. Through Haier's platform, employees can become makers and utilize various resources to establish micro-enterprises, allowing everyone to become an entrepreneur. Concurrently, Haier proposed the concept of building a shared platform, aimed at achieving enterprise platformization, employee entrepreneurship, and user personalization. Enterprise platformization, also known as borderless enterprise, embodies the openness and interaction of the enterprise. This change in the concept of open interaction is reflected in the shift from a closed system to an open system, and from adversarial relationships with various internal and external aspects of the enterprise to interactive relationships. By leveraging internet platforms, enterprises are transformed into open, sharing, co-creating, and win-win platforms, thereby achieving accurate matching of resources and demands quickly and efficiently. Employee entrepreneurship embodies leaderless management, where everyone can become an entrepreneur through the internet. By empowering employees with certain rights, they transition from passive command executors to proactive entrepreneurs seeking development, not only mobilizing employees' sense of participation and initiative but also encouraging them to actively create value for users. User personalization embodies the concept of a scale-free supply chain, realizing the transition from enterprise-centered to user-centered. Initially driven by the scale-free supply chain, enterprises change, providing employees with entrepreneurial platforms. Employees start businesses to meet users' personalized needs, which in turn drives enterprise-level changes, forming a virtuous cycle, and ultimately better serving users with long-term services.

The "Rendanheyi" model breaks through traditional business models by transforming employees from mere dependents on the organization into active creators of value. The organization provides employees with an innovative platform, allowing them to exist as self-driven innovators on this platform. This arrangement achieves a three-way win-win situation among the organization, employees, and users.

3.2. Development Phase of the New Model: Rendanheyi 2.0

Chain clusters are a new organizational form that emerges after the upgrade of micro-enterprises. They are spontaneously formed alliances of various micro-enterprises, characterized by decentralization and user self-trust, forming a community of shared interests. They can meet the deeper needs of users to better serve them. The concept of "chain cluster contracts" was formally proposed in 2019. Here, "chain" refers to an ecological chain, which connects multiple-channel resources and stakeholders through the internet, blockchain, big data, etc., to achieve efficient collaboration among all parties. "Cluster" refers to micro-groups, which are the collection of nodes in the ecological chain. "Contracts" refer to smart contracts, where the purpose of all parties is to achieve co-creation and win-win outcomes, providing the intrinsic drive for the entire "chain" to exist and sustain. Chain clusters can guide enterprises toward meeting the needs of well-known users, creating lifelong users for the enterprise, aligning well with the characteristics of the IoT era, such as experiential and sharing economies.

In the chain cluster contract model, users, employees, and various stakeholders form multiple micro-chain clusters as nodes on the organizational chain. Each represents rights, responsibilities, and benefits, respectively. In this model, Haier breaks down the boundaries between micro-enterprises, integrating resources from various micro-enterprises to realize resource sharing between chains, thereby maximizing the utilization value of resources among chain clusters. At the same time, it fully leverages

the role of each micro-enterprise in the chain, closely integrating the micro-enterprises, makers, resource providers, and other stakeholders on the platform, and linking all parties through nodes to form multiple value chains. This creates a mesh relationship in various stages, promoting their interaction. Therefore, the chain cluster contract model further disrupts traditional business models by allowing employees to self-organize and construct new ecological systems. The enterprise's goal shifts from profit growth to value creation with users.

3.3. Expansion Phase of the New Model: Rendanheyi 3.0

In 2021, Zhou Yunjie, Chairman and CEO of Haier Group, proposed the evolution direction of Haier's chain cluster contract— the Chain Cluster Federation. Building upon the foundation of the chain cluster contract, the Chain Cluster Federation further centers around users to achieve self-driven and self-evolving capabilities among various chain clusters. This fosters organic collaboration among chain clusters, thereby enhancing user experience. In the Haier ecosystem, micro-enterprises serve as the fundamental units of innovation, while chain clusters serve as the fundamental units of value creation. The Chain Cluster Federation will emerge as the fundamental unit of ecosystem evolution. It encompasses not only main chain clusters and sub-chain clusters within the enterprise but also external chain clusters. As the external chain clusters expand, the enterprise can establish a more systematic, comprehensive, and high-quality Chain Cluster Federation, promoting the expansion of chain clusters across enterprises and industries. This facilitates the evolution of the covered ecosystem, ultimately maximizing the efficiency of business models in the Internet era.

For instance, Haier's creation of the Industrial Internet platform COSMOPlat serves as a successful practical example in this regard. Initially serving only internal enterprise needs, COSMO platform underwent substantial investment from Haier to undergo restructuring and expansion, transforming it into a platform serving societal needs. It interconnected the data and information flows of manufacturing systems, allowing users to participate in the entire process of product design, research and development, manufacturing, logistics, distribution, and iterative upgrades, truly serving the users' needs comprehensively. The goal of Haier's COSMO platform is to establish an open, industrial-grade platform operating system. This system aggregates and integrates various resources to provide industrial enterprises with a rich array of intelligent manufacturing application services.

4. Conclusion

Against the backdrop of the flourishing platform economy, the research focusing on Haier Group has unveiled crucial practices and explorations in business model innovation for enterprises. Haier's "user-driven integration" business model demonstrates unique characteristics and values propelled by the platform economy. The evolution of business model innovation in digitally transformed enterprises exhibits phased characteristics, evolving through the stages of exploration, development, and ecological expansion, transitioning from a platform mode to a community mode and finally to an ecosystem mode.

Initially, during the exploration phase, Haier emphasized the updating of value propositions, including the exploration of customer needs and adjustments of value

propositions under the Haier platform model. Building upon the foundation of micro-enterprises in the exploration phase, Haier, in the development phase, utilized the community contract model as a carrier, continuously incubating new enterprises through the core platform, thus driving the formation of a complete value ecosystem chain. Within the community, collaboration among various entities continuously extended and adjusted the platform to form a value network, enhancing the overall efficiency of value creation and transmission for multiple stakeholders, thereby continually expanding the enterprise's value ecosystem, forming a chain cluster union, and ultimately achieving cross-domain, cross-organizational value co-creation.

This study provides three insights into the construction of management models for Chinese enterprises. First, in the era of platform economy, enterprises should establish a management model based on the production mode of mass personalized customization. For mass personalized customization, enterprises need to integrate the user dimension, production and service dimensions to ensure the effectiveness of the enterprise management model. Second, the enterprise management mode should change with the change of the environment. In the context of the platform economy era, enterprises should fully learn and utilize the Internet of Things (IoT) technology to establish a management mode that matches the IoT technology to ensure the applicability of the enterprise management mode. Thirdly, the innovation of enterprise management mode needs to start from the basic constituent elements of strategic orientation, organizational mechanism and incentive mechanism under the leadership of management philosophy, and the three-dimensional structure of large-scale personalized customization corresponds to these three basic constituent elements one by one, so as to ensure the completeness of enterprise management mode. Meanwhile, in the era of platform economy, enterprises need to continuously optimize and improve these elements under the leadership of management philosophy to adapt to the changing market environment and achieve sustainable development of enterprises.

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