

Evolution of Growth Model and Cultivation of Competitive Advantages Under the Ambidextrous Innovation Strategy: In the Case of China's High-Tech Enterprises

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Abstract: This study focuses on the evolution of growth model and cultivation of competitive advantages under the ambidextrous innovation strategy. After a brief introduction of the connotation of ambidextrous innovation strategy, the evolution of growth model of high-tech enterprises under the conventional strategy and the ambidextrous innovation strategy is analyzed. Furthermore, a discussion is made on how to cultivate enterprises' competitive advantages under the ambidextrous innovation strategy, thereby enabling enterprises to stand out from competitors under this new strategic model and truly achieve the goal of sustainable development.

Keywords: Ambidextrous innovation strategy; Competitive advantages; Growth model; Technological flexibility

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1. Introduction

In the context of economic structural transformation and development, China's high-tech enterprises are facing many paradoxes, typically displaying ambidexterity in their development. Therefore, the issue of how enterprises can truly give full play to the advantages of the ambidextrous innovation strategy and cultivate competitive advantages under this strategy has always been the focus of research throughout the development of China's high-tech enterprises.

2. Ambidextrous innovation strategy

Ambidexterity generally refers to the simultaneous exploration and utilization or the simultaneous pursuit of two contradictory targets, which are different or even contrary to each other, within an organization. The contradictory characteristics of ambidextrous innovation are mainly reflected in the exploration and acquisition of new resources while achieving efficient utilization of existing resources within an organization, and the utilization of these two resources is differentiated or may even irreconcilably contradict one another. Therefore, it is often difficult to achieve ambidextrous innovation within an organization ^[1]. However, some scholars believe that the ambidextrous innovation strategy can be transformed into two distinct strategies whose advantages can complement each other ^[2]. Upon comprehensive analysis, ambidextrous innovation can be investigated from five perspectives, namely structure, behaviors, contradictory thinking, abilities, as well as social networks and strategic alliances.

2.1. Perspective of structure

From the perspective of structure, an organization is compared to an organism in the theory of organizational evolution. In order to adapt to changes in the environment, an organization needs to make morphological adjustments and form an organizational structure that can adapt to both slow and dramatic changes in the external environment. An organization with an ambidextrous structure is composed of highly differentiated but loosely integrated departments. Some departments are large with compact process and conservative culture, while others are mainly engaged in experimentation and exploration with loose processes and a more liberal culture ^[3].

2.2. Perspective of behaviors

From the perspective of behaviors, ambidexterity is reflected in the behaviors of organization members in a specific situation. Under this perspective, although there is no ambidextrous structure within an organization, ambidexterity is achieved within the same unit ^[24].

2.3. Perspective of contradictory thinking

From the perspective of contradictory thinking, ambidexterity calls for a diversified team with individuals of different cultural backgrounds. In this way, decision-making will neither be too conservative or too aggressive, thus ensuring that the organization not only engages in development activities, but also meets the needs of the existing market ^[25].

2.4. Perspective of abilities

From the perspective of abilities, with the development of enterprises' resources and dynamic abilities, the ambidextrous strategy, based on the perspective of abilities, has been widely adopted by modern enterprises. Under this perspective, ambidexterity, being a dynamic capability of an organization, is characterized by social complexity, time-consuming formation, causal ambiguity, non-imitativeness, and path dependence ^[6].

2.5. Perspective of social networks and strategic alliances

From the perspective of social networks and strategic alliances, the survival and development of an enterprise are not entirely determined by its ambidextrous characteristics. As far as a single enterprise is concerned, ambidexterity is far from enough for its survival and development. If one wants to learn about the prospects for an enterprise's survival and development, the social networks between that enterprise and other enterprises should also be examined. Especially in the context of supply chain ambidexterity, effective interactions with partners in the supply chain are required ^[7].

3. Evolution of the growth model of China's high-tech enterprises under the ambidextrous innovation strategy

3.1. The growth model under the conventional strategy

Under the conventional strategic model, the growth model of high-tech enterprises undergoes five periods, namely the seed period, the entrepreneurial period, the growth period, the maturity period, and the transformation period. In the seed period, a high-tech enterprise is like a newborn infant who is growing, and its main task is to carry out repeated experimentation, correction, and improvement of new technologies and new products. In the entrepreneurial period, the high-tech enterprise has completed the development of new technologies and new products but is generally challenged by insufficient funds, unstable product quality, high costs, and some unresolved technical problems. Therefore, in this period, the enterprise needs to carry out continuous market innovation and take initiative to seek capital injection ^[8]. In the growth

period, after overcoming the challenging entrepreneurial period, the enterprise has basically developed core abilities and technologies, with increased sales volume and profit margin as well as complete basic after-sales services. In this period, the scale of the enterprise has begun to take shape. In the mature period, the enterprise has achieved stable product performance and advanced technologies, with a reduction of risks to about 30%. In this stage, its main task is to seek development, focus on the future, expand the production line and marketing team, and strengthen the exploration of the domestic or international market. In the transformation period, with the increasingly fierce market competition, the enterprise is approaching its limits in terms of products and technologies, and it needs to develop new products and new technologies with mature strategic awareness [9].

3.2. The growth model under the ambidextrous innovation strategy

Under the ambidextrous innovation strategy, the growth model of high-tech enterprises differs from the previous model that transitions from the seed period to the transformation period; instead, it reflects a transformation from a start-up period to a growth period, and to a renewal period. Taking a medical device development enterprise as an example, in the start-up period, the enterprise, for the first time, applied 3D printing technology to its medical device development. In face of resource scarcity in the early days of business, its founders actively pooled together multiple resources, utilizing professional knowledge, research results, and government support. On the basis of a keen identification of the market demand, the enterprise concentrated its resources on technology development and, at the same time, established a global intellectual property protection system, thereby rapidly accumulating a large quantity of resources.

After entering the growth period, the enterprise focused on professional transformation as well as technology expansion and application and vigorously promoted the iteration and upgrading of core products, establishing a global marketing system that centers on product registration, sales, and after-sales services. Furthermore, based on the accumulated results from its core technology research, the enterprise developed an industrial platform to solve certain problems, such as the lack of mature professional equipment and reference experience, so as to ensure large-scale production of products. Meanwhile, the enterprise continued to upgrade the performance of core products based on technological innovation and obtained the Indian registration certificate, the European Union CE certificate, and the Chinese medical device registration certificate. While satisfying the new market demand, the enterprise vigorously promoted the universality of technologies and developed a new generation of dural repair pieces, bringing a new meningoplasty solution.

In the renewal period, the enterprise proactively broadened its innovation platform, extended its application fields, and focused on cross-departmental product development. In a market environment where policy dividends, diverse demands, and uneven market opportunities and threats are intertwined, this high-tech enterprise has actively established an internal talent flow mechanism and promoted the in-depth integration of industry, university, research, and medicine. It has successively formed collaborations with the Guangdong 3D Printing Industry Innovation Alliance, the Additive Manufacturing Alliance of China, *etc.* After achieving healthy interactions with partners in the industrial chain, it orientated itself toward clinical needs and utilized a platform with integrated digital design, precision machining, and technical reserves to vigorously promote the expansion and application of its products' core technologies, thus successfully extending its core technologies to stomatology and neurosurgery. Hence, it can be concluded that in the renewal period, the high-tech enterprise actively promoted the iteration and upgrading of technologies, while maintaining the benefits of the original core technologies. At the same time, it enhanced the synergistic effect of products. In addition to expanding the application fields of technologies, the enterprise achieved synergistic advancements in front-end technology research and development (R&D) and back-end industrialization, truly incorporating the ambidextrous innovation strategy into its entire

growth cycle ^[10].

4. Path of cultivating the competitive advantages of high-tech enterprises under the ambidextrous innovation strategy

Driven by the ambidextrous innovation strategy, high-tech enterprises should have sufficient competitive advantages to stand out amidst the fierce competition. To this end, they should strengthen themselves with five abilities, namely opportunity identification, integration and restructuring, technical flexibility, organizational flexibility, and talent reserve.

First, enterprises need to strengthen their ability to identify opportunities. While promoting the rapid diffusion and dissemination of information and technology within the enterprise, they should actively innovate exploratory activities to tap powerful information and knowledge. On the one hand, enterprises should encode relatively dominant knowledge and store it in a structured database for convenience of use by their members, thus encouraging technology reuse. On the other hand, they should transmit and tap tacit knowledge fully based on interpersonal communication and stimulate their employees to generate creative ideas through creative and intuitive exchange and collision ^[11]. Second, enterprises should enhance their ability in integration and restructuring. While promoting exploitative innovation and exploratory innovation, enterprises should strengthen employees' awareness of knowledge integration and restructuring and stimulate their motivation for knowledge restructuring, ultimately achieving the integration of old and new knowledge, internal and external knowledge, and centralized and fragmented knowledge as well as promoting the implementation of innovation and exploratory innovation ^[12]. Third, enterprises should improve their ability in technological flexibility and quicken their respond to market changes through technology modularity and flexibility ^[13]. Fourth, enterprises should strengthen their ability in organizational flexibility and face the challenges brought by market development and economic structural transformation based on the flat organizational structure that can be flexibly adjusted ^[14]. Fifth, enterprises should strengthen their ability in talent reserve and take talents as the main resource for competition. They should strengthen their connectivity with universities and national science and technology departments, absorb outstanding science and technology talents, as well as develop an all-round talent training system based on both industry development and their own development needs ^[15].

5. Conclusion

As a brand-new model and concept in modern enterprise management and development, the ambidextrous innovation strategy allows enterprises to strengthen their exploration of new opportunities, new resources, and new technologies in the market, while ensuring full utilization of existing resources, such that they are able to effectively cope with various risks in the changeable market. However, when developing an ambidextrous innovation strategy by reference to this study, enterprise managers should also pay attention to the identification of market opportunities and the development direction of ambidexterity, so as to ensure mutual complementation and promotion in the development under this ambidextrous strategy. In this way, they will give full play to the advantages of the ambidextrous innovation strategy.

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