https://doi.org/10.37420/j.emr.2024.015

A Study on the Factors and Strategies Influencing the Business Model of Listed High tech Enterprises

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Abstract

This paper examines the elements and strategies that influence the business models of listed high-tech companies. Against the background of globalization and informationization, these companies are faced with increasingly fierce market competition and changing industry environments. In order to maintain their competitive advantages and sustainable development, these companies need to continuously adjust and innovate their business models. This paper analyzes the characteristics and advantages of the three main business models, namely, technology innovation-driven, platformization and servitization, and discusses the application strategies of these models in different market environments and industry conditions. At the same time, this paper also takes successful enterprises such as Huawei, Apple, Alibaba and IBM as examples, and analyzes in depth how they achieve rapid development and long-term success through their unique business models. Through the research in this paper, we can better understand the importance of business models of listed high-tech companies and provide useful reference and inspiration for other enterprises.

Keywords

listed high-tech companies, business model, technological innovation, market competition

The operation, technological innovation and development of listed high-tech enterprises have their own set of logic, and the business model of listed high-tech enterprises plays a decisive role in it. From the initial start-up period to the growth and maturity period, the business model of listed high-tech enterprises is constantly adjusted according to the market demand, industry environment, policy changes, etc. Thus, a mature business model is the cornerstone for the success and superiority of listed high-tech enterprises. Therefore, a mature business model is the cornerstone for the success and superiority of listed high-tech enterprises, and it is an extremely important topic to study the influencing factors of the business model of listed high-tech enterprises.

1. Background of the study

Against the background of accelerating globalization and informationization, high-tech enterprises have become more and more prominent as an important engine for economic development. Listed high-tech enterprises are engaged in the research, development, production and sales of high-tech products based on the premise of technological leadership and technological innovation, and are mainly engaged in the fields of In-

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https://doi.org/10.37420/j.emr.2024.015

ternet electronic information, biomedicine, new materials and so on. In general, it is also contains the current economic market high-tech economic industry. China has specially formulated the export catalog of high-tech products, which stipulates that all the products belonging to the National Torch Plan and the five-year plan public relations projects are high-tech products, and the enterprises producing these products have formed the high-tech industry. The characteristics of high-tech enterprises determine that their business model needs to be more innovative and forward-looking. High-tech enterprises usually have the characteristics of high growth, high technology, as well as involving new economy, new services, new materials, new energy and new business models. These characteristics make high-tech enterprises rely more on industry characteristics and technological innovation rather than scale effects in the pursuit of profitability. Therefore, high-tech enterprises need to constantly explore and try new business models to adapt to the rapid changes in the market and meet the diversified needs of customers. Secondly, business model innovation is an important means for high-tech enterprises to realize sustainable development. Through business model innovation, high-tech enterprises can reshape their value proposition, value positioning and value creation process, and then enhance their competitiveness and market position. For example, some high-tech enterprises have achieved the diversification of value supply and the innovation of profit model by adopting platform and intelligent organizational forms, thus achieving significant market advantages. In the process of transformation and upgrading, high-tech enterprises also need to adapt to market changes and meet new demands through business model innovation. In the transition period, high-tech enterprises need to adjust and optimize their business models in response to their own characteristics and market demand, in order to achieve optimal asset restructuring and resource allocation.

To summarize, there is a relationship of mutual promotion and common development between business models and high-tech enterprises. High-tech enterprises need to explore and innovate business models to adapt to the rapid changes in the market and meet the diversified needs of customers; at the same time, the innovation of business models can also promote the scientific and technological innovation and transformation and upgrading of high-tech enterprises to realize sustainable development. It is of great significance to study the business models of high-tech enterprises, which can help us to deeply understand the reasons for their success, find out the innovation points, understand the market demand and competitive situation, as well as promote industrial upgrading and transformation. These research results can not only provide guidance for the development of high-tech enterprises themselves, but also provide useful reference and inspiration for the innovation and development of the whole industry and society.

According to different situations, listed high-tech enterprises choose different business models, which can be divided into technological innovation-driven business models, platform-based business models, and service-based business models, as shown in Table 1-1.

Table 1-1 Types of Business Models

business model	descriptive	typical case
Business models driven by technological innovation	Delivering products and services through technological innovation	Huawei, Apple
Platform-based business model	Building a platform to focus on both supply and demand	Alibaba, Tencent
Servitized Business Models	Providing specialized services to meet the needs of our clients	IBM, Accenture

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2. Literature review and outlook

2.1 Literature study on the origins of business models

Paul Timmers introduced the original concept of business model in 1974. It considers a business model as a systematic process consisting of product, service and information flows. Although business model is widely mentioned, it lacks a clear and recognized conceptual system (Yu, Laiwen, 2011). Due to differences in individual practices and different theoretical perspectives, there is no unified and widely recognized definition so far. Through the current research on business model, the main views of domestic and foreign scholars include: Mahadevan (2000) believes that business model is the only mixture of three flows that are crucial to the enterprise-value flow, revenue flow, and logistics; Chesbrough (2002) believes that business model describes the enterprise's plan to create value and the company's position in the value chain on the basis of summarizing the empirical research of the former. positioning in the value chain.Rappa (2004) views van business model as a method of doing business that is the basis for a firm's survival, generates revenue for the firm, and defines the firm's position in the value chain, providing guidance for the firm's profitability.In 2006, Harvard University's Johnson, Christensen, and SPA's CEO In 2006, Johnson, Christensen, and Kagermann of Harvard University, and CEO of SPA, co-authored a white paper on business models, which describes a business model as a three-dimensional model consisting of customer value, resources and capabilities, and profitability.Contemporary Finance & Economics (2007) mentions that a business model is a tool for describing how a firm is positioned through internally linked variables such as economic logic, operational structure, and strategic direction and other internally linked variables to position and integrate. It focuses on how firms design the four dimensions of value proposition, value network, value maintenance and value realization in order to create value for shareholders and other stakeholders on the basis of creating customer value. Zhu Wuxiang and Wei Wei (2009), a business model is essentially a stakeholder transaction structure, which solves the strategic issues prior to the development of corporate strategy and also serves as a bridge between customer value and company value. Some kind of business model reflecting the value creation design is implicitly adopted.Hahn (2018) studied that business model innovation is the enhancement of profits by updating the value chain to develop new products for cooperative members.

Table 1-2 Business Model Definitions

Scholars & Journals	particular year	define
Mahadevan	2000	The only hybrid of value, revenue and logistics streams
Chesbrough	2002	The company's plan to create value and the company's position in the value chain
Rappa	2004	The goal of creating total enterprise value is designed to ensure that the enterprise is profitable on the basis of continuous growth and guidance through the value chain.

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Johnson, Christensen, Kagermann	2006	A three-dimensional model consisting of customer value, resources and capabilities, and profitability
Contemporary Finance & Economics	2007	A tool for describing how firms are positioned and integrated through internally linked variables such as economic logic, operational structure and strategic direction
Zhu Wuxiang, Wei Wei	2009	Stakeholder transaction structure
Hahn	2018	Profit from the development of additional products for partners through the renewal of the value chain

2.2 Development and evolution of business models

2.21 Shift in commercial focus: from products to users

In the age of industrialization, standardized processes and industrial assembly lines in manufacturing became mainstream because standards are the cornerstone of business. The focus of business operations centered on products, such as increasing profits and reducing costs. Marketing is the core tool, relying mainly on on-site sales or merchandise exhibitions.

However, in the digital era, the center of gravity of business has shifted from products to users. Nowadays, consumer demand has become the basic logic of business, and "consumer data" has become the core competitiveness. Who masters these data, who holds the initiative. Unlike the previous "product is king", now it is "user is king". Digitalization transforms business into data, making data an important factor of production and an asset that supports business decisions.

From the planned economy to the "overcapacity" of the industrialized era to the "private customization" of the digital era, the focus of business has always evolved. In the digital age, the core of business is service, with the goal of increasing the reach of the platform and its products and creating an attractive brand image. During the epidemic, the focus of commerce shifted even more to online, such as social marketing and online shopping, which transformed offline consumption into online purchasing power.

2.22 Evolution of commercial core indicators: from profitability to cash flow

The evolution of product profits has gone through three stages: the era of windfall profits, the era of thin profits, and the era of thick profits. In the early stage of reform and opening up, the supply of products is tight, the demand is suddenly opened and the market information is asymmetric, people actively or passively pay more money for the goods, and the business enters into the era of profiteering. With the deep development of the market economy, especially the rise of Internet e-commerce, the price of goods and services become transparent, while the production side of the overcapacity, some businessmen began to vicious competition, the price war, business into the era of thin profits. Entering the digital era, the products are constantly moving

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towards customization and personalization, the value-added space of the products is opened again, and the business enters the era of thick profits. In the industrialized era, the key performance indicator (KPI) of business operation is profitability. The profit of products usually comes from the layers of dealers' price increase. In the Internet era, product prices are becoming more and more transparent, and profits are getting lower and lower. 20 years ago, Jack Ma said, "Let there be no difficult business in the world". Since then, Taobao as the representative of the e-commerce quietly emerged, a network cable a computer can open a store has become a reality. In the role of digital technology, business is becoming more and more prosperous, and prosperity to a certain extent will appear two major results: First, all products will be infinitely close to zero profit; Second, all people earn money will be infinitely close to the average level of society. As Adam Smith said in The Wealth of Nations, lower profits are the inevitable result of business prosperity. On the other hand, in the digital era, partners and channel players in the industry chain are able to make profits according to the size of the value-added services provided. The stronger the service capability of a business, the more customers it attracts, the greater the cash flow flowing through that business, and the greater the cash flow, the greater the value creation derived. Therefore, the profitability of a business is measured not only by the size of its profits, but also by the size of its cash flow.

2.23 Evolution of the enterprise organizational structure: from enterprise to platform

In the traditional economy, the organizational structure of an enterprise is "company + employees". Most traditional enterprises have a hierarchical organizational structure, with the main models being linear, functional, divisional, matrix and multidimensional. According to Coase's theory, the reason for the existence of enterprises is to replace the market, and a hierarchical organizational structure can avoid the transaction costs arising from market bargaining. In the digital age, business organizations have evolved into both offline and online forms. Offline is the enterprise itself, online is the enterprise platform, and the organizational structure of the enterprise is "platform + individual". Digital technology enables cross-sectoral connection of production and transaction information, breaks through business barriers, closely links customers, suppliers and stakeholders together, and realizes full-process, real-time, dynamic and visual information sharing, which will change the enterprise's business model and promote the reconstruction of organizational processes and the innovation of the industry.[3]11 The enterprise organization has evolved into two forms: offline and online. [3]11 The digitalization and intelligent analysis system based on blockchain and artificial intelligence technology carries out cross-border data integration and resource sharing through cloud computing, blockchain and artificial intelligence to enhance the value creation of the integrated supply chain and ecosystem. In the era of sharing economy, business is becoming more and more fragmented, and each individual can become a member (partner) of the platform's service customers as long as he or she completes the registration on the platform in order to realize the value of the individual, for example, sharing economy platforms such as DDT, HungryMall, and Meituan. An important feature of the "platformization" of enterprise organizational structure is "virtualization". Virtualization of the organizational structure is a prerequisite for digitization, intelligence, blockchain and meta-universe. When the organizational structure changes, the workflow and operation mode of employees also change.

2.24 The metamorphosis of the business model: from horizontal expansion to vertical deep cultivation

Under the traditional economic model, the business model of enterprises tends to expand horizontally, with

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a gradual increase in scale and a wider and wider business scope. However, this industry-wide expansion strategy often leads to homogenized competition. With the arrival of the digital era, the relationship between businessmen and consumers has gradually evolved from a simple buying and selling relationship and service relationship to a symbiotic relationship, which has forced the business model to undergo profound changes. Enterprises have begun to turn to deeper development, digging deeper into consumer demand, and their business has gradually become vertical and refined, thus creating stronger and stronger differentiated competitive advantages. The criterion for business success is no longer just economies of scale, but the ability to meet consumers' individual needs, which is exactly what the "Long Tail Theory" in economics reveals. Jack Ma once predicted that in the next ten years, all enterprises relying on price differences to make profits will disappear, and will be replaced by new enterprises that use products, services, hardware or software as their entrances. Merchants will no longer rely solely on product profitability, but will see products as carriers of value. In the future, product margins may gradually go to zero, or even become negative. Merchants begin to utilize low or zero profit products to attract users and collect user data, which can then be converted into business profits. For example, bookstores attract readers by offering free books and then realize profits by holding book clubs, which is essentially running users.

2.25 Transformation of value creation: from single value to symbiotic value

In traditional economies, enterprises are seen as "market substitutes" and are relatively closed. They create value by acquiring scarce resources through the traditional market and exchanging common and scarce resources through market transactions. This method of value creation is characterized by singularity, scale and standardization. However, with the changes in the resource environment and external market, the single way of value creation is gradually challenged. In the context of Chinese-style modernization, enterprise digital transformation opens new horizons for business value creation. Digitalization and innovation drive not only promote business development, but also optimize the allocation of resources within the global industrial chain and the ecosystem of industrial clusters, generating a "latecomer's advantage" in data productivity, which in turn brings shared value creation and spillover effects. With the improvement of communication infrastructure and the application of digital platform technology, investors, industry chain upstream and downstream, suppliers, distributors, consumers, research institutions, intermediaries and other stakeholders have begun to gather in the digital industry cluster ecological platform system. Value creation is no longer done by a single enterprise only, but is extended to the whole industry chain ecosystem, showing the characteristics of synergization, diversification and symbiosis. The financial goal of enterprises has also changed from value maximization to value sharing. Enterprises on the platform generate synergistic effects through integration, forming ecological chains and ecospheres, which in turn generate synergistic benefits. The value created jointly in the industry chain is symbiotic value.

2.26 Innovations in market efficacy: from productive efficiency to allocative efficiency

Under the traditional economy, the main function of the market is to enhance production efficiency. Production efficiency focuses on the input-output ratio of production factors, and labor productivity can be effectively enhanced through standardization and scaling, thus increasing value creation. However, as the economy enters the stage of high-quality development, the industrial division of labor is becoming more and more refined, and digital collaboration is becoming more and more convenient, which requires more small and medium-sized enterprises (SMEs) to take on the service function of niche markets. This has led to a shift

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from an unbalanced state to an equilibrium state in the market, and market efficacy has shifted from productive efficiency to allocative efficiency. In the digital era, allocative efficiency no longer focuses solely on possession and control of assets, but more on sharing and empowerment of value nodes. This shift maximizes the use of social resources, solves the problem of selling backlogged products, and meets the personalized needs of consumers, including time-sharing and sharing needs. New technologies and customer experience are two key factors driving change in the market. In the context of China-style modernization, the focus of social investment is shifting from traditional "big infrastructure" to "new infrastructure," i.e., new digital technologies represented by the "Big Intelligence, Mobile, Cloud, and Thing Zone. The purpose of these technologies is to enhance the technological soft power of enterprises and promote their digital transformation and upgrading. In the digital era, online resources are becoming increasingly public and shared, such as knowledge and movies, while offline services and experiences have become the focus of consumption. As a result, only those enterprises that can truly improve distribution efficiency have the potential for value creation. This means that companies must strengthen the integration of online and offline development in order to adapt to future business trends.

3. Status of business models of listed high-tech companies

This paper analyzes the current status of listed high-tech business models by giving examples of the three business models mentioned in the previous section.

3.1 Business models driven by technological innovation

A technological innovation-driven business model is a business model in which technological innovation of products or services is the core competitiveness. This model requires companies to continuously invest in R&D to maintain a leading position in technology, and to promote the upgrading and improvement of products or services through technological innovation. Taking Apple as an example, the chart shows Apple's R&D investment over the years.

fiscal year	R&D expenses (billions of dollars)	Percentage (%)
2000	3.8	4.8
2001	4.3	8.0
2002	4.46	7.8
2003	4.71	7.6
2004	4.91	5.9
2005	5.35	3.8
2006	7.12	3.7
2007	7.82	3.2
2008	11.09	3.0

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fiscal year	R&D expenses (billions of dollars)	Percentage (%)
2009	13.33	3.1
2010	17.82	2.7
2011	24.29	2.2
2012	33.81	2.2
2013	44.75	2.6
2014	60.41	3.3
2015	80.67	3.5
2016	100.45	4.7
2017	115.81	5.1
2018	142.36	5.4
2019	162.17	6.2
2020	187.52	6.8
2021	219.14	6.0
2022	262.51	6.7

Data from Apple's 10-K filing By Apple's fiscal year

Apple brings about product or service differentiation and improves the competitive advantage of the enterprise through the support of high technological power. It retains the core technology research and development, and outsources or relocates the work of parts production and assembly to overseas countries with lower labor costs, so as to reduce production costs and improve production efficiency, thus increasing the profitability of the enterprise. At the same time, however, technological innovation requires a large amount of sustained R&D investment, and once you choose the wrong track and fail to grasp the industry winds in time, you may fall flat on your face. The success of technological innovation depends on the grasp of market demand and technological trends, and the risk is high. Enterprises need to have strong intellectual property protection capabilities.

3.2 Platform-based business models

The business model of platformization is a model that realizes business value by building a platform that brings together the supply and demand sides. The core of this model is the construction and maintenance of the platform, which attracts users and partners through the provision of high-quality services and resources to achieve a win-win situation for all parties. Take Alibaba as an example, Alibaba Group has built a huge platform ecosystem by establishing an e-commerce platform. At its core are e-commerce platforms such as Tao-

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bao and Tmall, which provide online sales and display opportunities for many small-volume businesses. The platforms match buyers with sellers through search, recommendation algorithms, and other technologies to achieve convenient and efficient transactions. Digital Marketing and Personalized Recommendations Alibaba Group has accumulated a large amount of user data on its e-commerce platform, which enables personalized marketing and recommendations through data analysis and intelligent recommendation algorithms. A user's browsing and purchase history is used to predict his or her interests so as to push him or her relevant products and promotional information. This personalized recommendation not only increases users' desire to buy, but also improves sellers' sales efficiency. Alibaba Group has also innovated in the field of logistics, building a huge logistics and distribution network. Through its partners and its own logistics, it has realized fast and efficient delivery services. In the "double 11" and other big promotions, Alibaba also adopted the "courier site mode", the community courier to participate in the distribution, improve the delivery speed. Finally, Alibaba Group has integrated digital financial services into its business model innovation. Through financial products such as Alipay, it provides sellers and buyers with more convenient payment and settlement methods. This model inspires other enterprises to actively cooperate with external resources to realize the sharing of resources and complementary advantages.

3.3Servicerized business models

A service-oriented business model is one that realizes business value by providing specialized services. This model requires companies to have strong service and client management capabilities to meet client needs and improve client satisfaction by providing high-quality services. Take Accenture as an example. Accenture is a leading global professional services firm that has been operating in Greater China for more than 20 years, providing clients with strategic, consulting, digital, technology and operational services and solutions. Accenture has always focused on local market practices and is committed to achieving exceptional client value and results. The digital technology sector is now a new growth driver for Accenture's new products and business revenue. Based on its management consulting and IT service outsourcing businesses, Accenture is seizing the demand for transformation in the digital era that is commonly faced by various enterprises, giving full play to the company's consulting strengths in understanding digital technologies and business models in various industries, and further expanding into advertising creativity and agency. In summary, the service-oriented business model provides customers with personalized service solutions to meet their special needs. It improves customer satisfaction and loyalty through quality services. And it can create new business opportunities and revenue sources.

To summarize, the advantage of the technological innovation-driven business model is that it can create competitive advantages through technological innovation of products or services and enhance the market position of enterprises. This model can promote the sustainable development of enterprises and make them stand out in the competitive market environment. However, the disadvantage of this model is also obvious, that is, technological innovation requires a large amount of R&D investment, and the results are uncertain and relatively high risk. If technology R&D fails, or fails to accurately grasp market demand and technology trends, the enterprise may face serious economic losses.

The advantage of the platform-based business model is that it can maximize business value by building a platform that brings together the supply and demand sides. This model can effectively expand a company's market share and increase brand awareness. At the same time, the platform-based model can also attract users

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and partners by providing high-quality services and resources, forming a win-win situation for all parties. However, the disadvantage of this model is that the construction and maintenance of the platform requires a large amount of capital investment and a certain degree of technical strength and operational capacity. In addition, with the intensification of market competition, the platform may face the risks of user loss and partner reduction.

The advantage of the service-oriented business model is that it can meet customer needs and improve customer satisfaction by providing high-quality services. This model can help companies build stable customer relationships and increase customer stickiness. Meanwhile, the servitization model can also expand the business scope and increase the revenue of the enterprise by providing value-added services. However, the disadvantage of this model is that servitization requires enterprises to have strong service capabilities and service teams, and they need to continuously invest in human and material resources to improve service quality. In addition, the servitization model may face risks such as changes in customer demand and rising service costs.

4. Business Model Innovation Path and Countermeasures for Listed High-Tech Companies

4.1 Business Model Innovation Path for Listed High-Tech Companies

4.11 Business model innovation path oriented to the degree of enterprise innovation

Numerous scholars have pointed out that the extent and manner in which enterprises implement business model innovation varies according to the type of enterprise.Linder and Cantrell (2000) subdivided business model innovation into four types: mining, adapting, expanding, and wholly new. Firms can tap into the potential of their existing business models, or adapt their core skills, or extend existing business logic into new areas, or even introduce entirely new business logic. Osterwalder (2004; 2007), on the other hand, categorizes them into stock, incremental and all-new types of innovation. For different types of firms, such as those with new resources, core competencies, or distribution channels, they can focus on stock-type innovation; for firms lagging behind in certain areas, incremental innovation can be used; and for firms with new technologies and the ability to capitalize on the opportunities, they can engage in holistic innovation.Mahadevan (2004) further considers the sustainability of innovations by categorizing firms as current leaders, trend creators, new entrants, imitators and followers, and discusses innovation strategies for the first three.

4.12 Innovation paths based on business model components

Business model innovation also presents different paths in terms of the components of the business model. Davila et al. (2005) emphasize innovation in terms of value proposition, supply chain and target customers. They point out that value propositions can be changed by developing new products or extending the value of existing products, and supply chain innovation can be realized by improving relationships with partners and operational integration.Johnson et al. (2008) and Lindgardt et al. (2009) argue that a business model consists of a number of elements, such as customer value propositions, profitability modeling, key resources, and key processes. Firms can innovate around these elements to drive overall change in the business model.

4.13 Innovation paths based on the enterprise value chain

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From the perspective of the value chain, business model innovation also presents different characteristics. Magretta (2002) argues that business model innovation can originate from product innovation or process innovation.RaPPa (2004) emphasizes that business model innovation needs to be clear about how the firm creates value and chooses the right position in the value chain to generate benefits with customers.Miles et al. (2006), on the other hand, from the perspective of the organizational form of the firm, argue that inter-firm cooperative operations are the driving force and direction for continuous business model innovation.

4.14 Innovation paths based on the enterprise system perspective

From the perspective of the overall system of the firm, business model innovation requires a comprehensive consideration of several aspects.Voelpel et al. (2004) argue that business model innovation requires systematic consideration of four dimensions: customers, technology, organizational infrastructure, and profitability, and emphasize the importance of matching with the external environment.Amit and Zott (2009), on the other hand, point out that a business model is a system of interconnected activities that may extend beyond the boundaries of the firm and involve the co-creation of value by the firm and its business partners.

4.2 Countermeasures for listed high-tech companies

4.21 Business model innovation countermeasures oriented to the degree of enterprise innovation

Excavation-based innovation response: Deeply explore the potential of the existing business model and optimize products and services to meet the needs of the existing market. For example, market research is used to understand the real needs of customers and adjust product features and pricing strategies.

Adaptive innovation response: Adjusting the core skills and resource allocation of an enterprise in response to market changes and customer needs. For example, introducing new technologies or management methods to improve the operational efficiency and service quality of the enterprise.

Extended Innovation Response: Expanding existing business logic into new areas or markets to find new growth. For example, developing new product lines or services to enter associated markets or industries.

All-new innovation response: Introducing brand new business logic and models to disrupt the existing market landscape. This requires companies to have strong innovation capabilities and market insights in order to seize new business opportunities.

4.22 Innovative countermeasures based on business model components

Value proposition innovation: redefining the value of a product or service to meet the real needs of customers. For example, by providing customized or personalized services to enhance customer satisfaction and loyalty.

Supply chain innovation: Optimize relationships with partners and operational integration to improve supply chain efficiency and flexibility. For example, establishing long-term and stable relationships with suppliers to achieve collaborative management of the supply chain.

Target customer innovation: Repositioning the target market and developing new customer groups or mar-

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ket segments. For example, market research is used to understand the needs and preferences of potential customers and to adjust the positioning and strategy of products or services.

4.23 Innovation countermeasures based on the enterprise value chain

Product Innovation: Continuously introduce new products or improve existing products to meet the changing needs of customers. Strengthen cooperation with R&D departments, increase R&D investment, and enhance the technical content and added value of products.

Process innovation: optimize production and service processes to improve efficiency and quality. Introducing advanced production technology and management methods to automate and intellectualize processes.

Cooperative business innovation: Establishing cooperative relationships with other enterprises or organizations to jointly develop markets and share resources and technologies. Through cooperation and innovation, mutual benefits and synergistic development can be realized.

4.24 Innovative responses based on an enterprise systems perspective

Systems Thinking: Develop a holistic business model innovation strategy that takes into account all aspects of customers, technology, organizational infrastructure and profitability. Enhance communication and collaboration with various departments to ensure the implementation and execution of the innovation strategy.

External environment matching: Pay close attention to changes and trends in the external environment, such as market demand, policies and regulations, and technological developments. According to the changes in the external environment, adjust the business model innovation strategy and direction in a timely manner.

Co-creation of value: To co-create value with business partners and realize the innovation and upgrading of business models. We build a solid business ecosystem through cooperative innovation, resource sharing and risk sharing.

5. Conclusions, research shortcomings and recommendations

5.1Conclusion

Through an in-depth study of the business models of listed high-tech companies, we can draw the following conclusions:

First of all, business models are crucial to the success of listed high-tech companies. Against the backdrop of globalization and informatization, and in the face of fierce market competition and changing industry environments, companies must flexibly adjust and innovate their business models to adapt to market demand and technological development trends.

Secondly, technology innovation-driven, platformization and servitization are three mainstream business models, each of which has its unique advantages and applicable scenarios. The technology innovation-driven model emphasizes leading the market through technology R&D and innovation, and is applicable to technology-intensive enterprises and industries; the platform-based model connects the supply and demand sides by

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https://doi.org/10.37420/j.emr.2024.015

building a platform to achieve resource sharing and value co-creation, and is applicable to enterprises with network effect and scale effect; and the service-based model focuses on providing customers with specialized services to satisfy their specific needs, and is applicable to service-oriented enterprises.

Finally, successful listed high-tech companies are often able to choose and implement the business model that best suits them, based on their own characteristics and market environment. For example, Huawei and Apple have achieved a leading position in the global market through a technology innovation-driven model, Alibaba and Tencent have built large ecosystems through a platform-based model, and service-oriented companies such as IBM and Accenture have earned the trust and loyalty of their clients through a servitization model.

To summarize, the success of business models of listed high-tech companies depends on their ability to flexibly adjust and innovate according to market changes and technological development trends. By thoroughly studying the advantages and applicable scenarios of different business models, and selecting and implementing them in combination with the company's own characteristics and market demand, it will help the company to stand out in the fierce market competition and realize long-term sustainable development.

5.2Research gaps

This paper only focuses on certain aspects of the business model of listed high-tech enterprises without comprehensively considering other potential influencing factors. This paper does not provide an in-depth discussion of the theoretical foundations of the business model of listed high-tech enterprises, resulting in an insufficiently in-depth understanding of the business model. The lack of theoretical framework may make the research results lack sufficient support and persuasion. , the article may have mainly adopted qualitative research methods without incorporating quantitative research methods, resulting in research results that may not be precise and objective enough.

5.3Recommendations

Listed high-tech companies should strengthen the research on market trends and customer needs in order to better grasp the changes in the market and the changes in customer needs, and provide strong support for the innovation of business models. Secondly, enterprises should focus on the integration and optimization of internal resources, and provide a solid guarantee for the innovation of business models through the rational allocation of resources such as talents, capital and technology. Finally, enterprises should strengthen cooperation with upstream and downstream enterprises and partners in the industry chain, and jointly promote business model innovation and technological innovation through building a close cooperative relationship, so as to realize a mutually beneficial and win-win development situation. In conclusion, business model innovation is an important way for listed high-tech companies to realize sustainable development. By continuously exploring and practicing new business models, companies can cope with the challenges and opportunities of the market and realize sustainable and steady development.

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