The Transformation of Traditional Manufacturing Business Model from the Perspective of Platform Economy

——A Case Study of Henan Daxin Cabinet

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Abstract: As an industrial organization form, platform economy has achieved rapid development in the information age. The application of platform economy in traditional industrial sections has had a crucial impact on the transformation of traditional industries. Taking Henan Daxin Cabinet as an example, this paper discusses about the innovation brought by the platform economy and its influences on the business models of traditional manufacturing enterprises from the aspects of production process, sales mode and marketing strategy. The research in this paper finds that modularized decomposition of production and design processes can reduce the difficulty of large-scale production of personalized customization. The pre-sale mechanism and supportive production and management system will reduce inventory and minimize risks. The marketing strategy of “culture plus self-media” breaks through the limitations of mass media, which can improve the quality and flow of advertisements and enhance the marketing efficiency of enterprises. Previously, the research concerning the transformation of business model resulted from the platform economy mostly focused on the field of e-commerce. This paper attempts to fill the gap in the research of platform economic theory in the traditional manufacturing field and provide practical guidance for the transformation and upgrading of traditional manufacturing.

1. Introduction

Although China has entered the middle and late stages of industrialization, traditional industries still account for the highest proportion of the national economy, create the most tax revenue, and absorb the most extensive industrial sectors, especially in the traditional industries. Ai Qingqing et al. (2017) believe that traditional manufacturing has difficulty in meeting the diversified needs of customers, weak customer relationship management, and over-reliance on media shaping and dissemination. With the gradual disappearance of the demographic dividend, the increasingly tight supply of resources, and the increasingly serious environmental pollution, China's extensive growth model at the expense of large amounts of resources and energy consumption is difficult to sustain. Under the double squeeze of the industrialization of the late-developing countries and the re-industrialization of developed countries, the transformation and upgrading of China's traditional industries is imminent.

Platform economy is a new type of industrial organization. It is based on digital technology, data-driven and platform support. It is a new format with the aim of improving efficiency and reducing costs by means of business process change, industrial chain integration and multi-service combination. Under the "Internet plus" national strategy, the platform economy has gradually become an important tool for China's economic transformation and an important component of "mass entrepreneurship and innovation". It can promote the integration of production factors, improve the efficiency of resource allocation, reconstruct the value chain of the original industry, and accelerate the innovation of business models. Through innovative advertising models, brand models and crowdfunding models, the platform economy will make the production mode of the manufacturing industry more flexible, the sales channels more flexible, the information communication more efficient and effective, the cost structure decline, and the brand dynamic.

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Sustainable development. It can promote the transformation of traditional industries, including traditional manufacturing industries, into flexible production, intelligent production, and service, and help China realize the transformation from manufacturing to manufacturing.

2. The impact of platform economy on manufacturing business model

The essence of the innovation of today's corporate business model is to move from product innovation to consumer innovation. From the enterprise-centric operating model to the customer-centric operating model, from a product-driven business model to a service- and solution-driven business model. In terms of production process, traditional manufacturing production processes are mostly vertically integrated. Manufacturing enterprises integrate upstream and downstream resources and give full play to the dominant position in the industrial chain, but the profitability of downstream links is usually lower than the upstream links. In terms of production and sales model, traditional manufacturing enterprises usually adopt the strategy of “production and sales”, which cannot capture market demand information in time. The upgrading of products is also easily out of line with market trends. The mismatch of supply and demand causes the economic benefits of enterprises to be low. In terms of advertising and marketing, traditional manufacturing enterprises mainly rely on TV commercials and paper media propaganda. In the era of informationization, the customer groups radiated in this way have been greatly reduced, and the results are not satisfactory.

The platform economy has revolutionized the business model of traditional manufacturing from three aspects: production process, production and sales model, and advertising marketing. First, modularization of manufacturing processes, refinement of division of labor, enabling manufacturers in various fields to play a comparative advantage, thereby reducing personalization. Second, the pre-sale mechanism reduces inventory reserves, promotes matching of production and demand, thereby reducing financial risks.

Third, culture helps multimedia, deepen the understanding of potential customers' brand products through interactive experience, realizes accurate marketing and personalized marketing, and improves the effectiveness of advertising. Modularization has improved the efficiency of production, provided a product foundation for the pre-sale mechanism, and the “culture plus self-media” propaganda method as a catalyst for sales, accelerating the process of realizing the profit. The production process, production and sales model, and advertising and marketing complement each other to jointly promote the transformation and upgrading of traditional manufacturing.

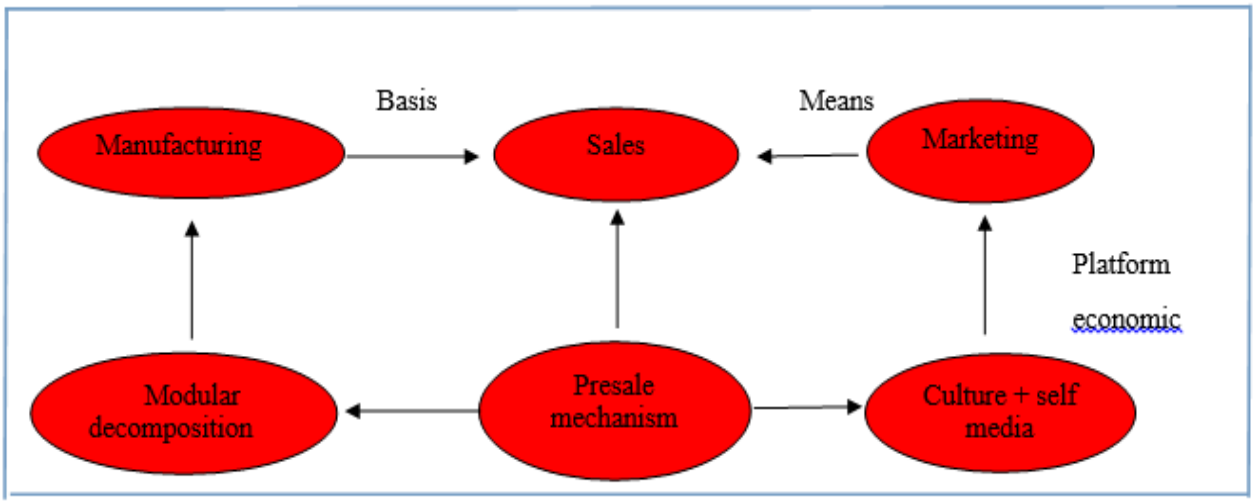

Figure 1. Platform economic operation mode

2.1 Modularization of the manufacturing process, play a comparative advantage and reduce costs

Brand manufacturer

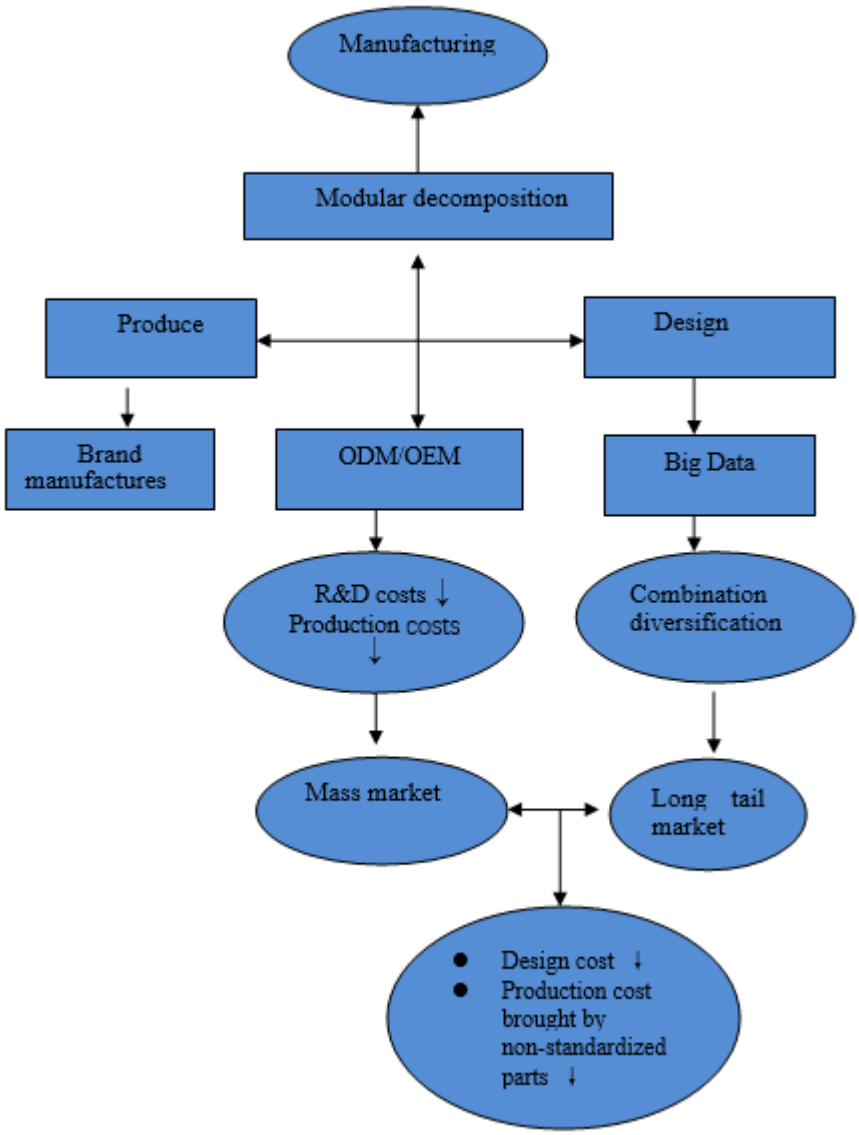

Figure 2. Modular decomposition manufacturing process

The modular decomposition manufacturing process is reflected in both the decomposition production process and the design process. In the modular production mode, the continuous manufacturing process of the traditional manufacturing industry is decomposed into several production processes, and the final product is decomposed into several independent sub-products, which are designed by the most advanced technology and the most productive manufacturers in the corresponding fields in the world. Production, according to the difference in the division of labor between brand manufacturers and sub-suppliers in design and development, sub-suppliers can be divided into OEMs and ODMs. Brand manufacturers as system integrators establish system rules in this process and provide certain product recommendations. And integrate the products of each sub-supplier into the final product. Modular production has improved the efficiency and flexibility of resource allocation on a global scale, giving full play to the comparative advantages of resources, technology and capital in various regions, and reducing the research and development costs and production costs of brand manufacturers. Shiyan Peng(2017) believes that modular production promotes the upgrading of manufacturing processes.

The modular design model has innovated the crowdfunding model. Manufacturers first look for

consumption pain points through big data, design different modules, and meet the diversified consumer demand through different combinations of modules and unit modules. Modular design reduces enterprise costs in two ways: First, personalized design becomes a fundamental creation. For the average customer, this modular design pattern reduces the design's professional difficulty, is easy to operate, and is based on big data analysis. The module also enhances the scientific nature of the independent design and reduces the design cost. Second, this model makes it possible to personalize the scale and standardization of production, reducing the additional cost of component differences. Through personalization, enterprises grasp the demand of potential small and medium-sized markets and retail markets; through mass production, reduce private subscriptions and base on the mass market. Fang Wang (2018), the platform economy opened a new era of Internet business customization. Under the IOT system and crowdfunding mode, by timely understanding the real needs of consumers, manufacturing companies use customized or niche market operations to reduce inventory costs and increase sales. In the long-tail mode of individualized, small-volume, and diversified niche markets, production and sales enterprises use information technology to fully grasp the individualized needs of dispersed customers, break the information asymmetry bottleneck of traditional commercial circulation links, and be able to produce and orient on demand. Sales, through the integration of innovation and creativity, to create the core competitiveness of the enterprise.

Sturgeon, Lester (2004) argues that a modular production network is a modularity of the value chain. It consists of nodes that act with acquiescence, and these nodes are connected by the exchange of coded information to create a global-scale manufacturing system. The author believes that enterprises that apply modular production have the following characteristics: product specifications can be informationized and standardized; the final product can be split into modules; and there is a system design that can encode information.

2.2 Pre-sale mechanism eliminates inventory, production and demand match reduces financial risk

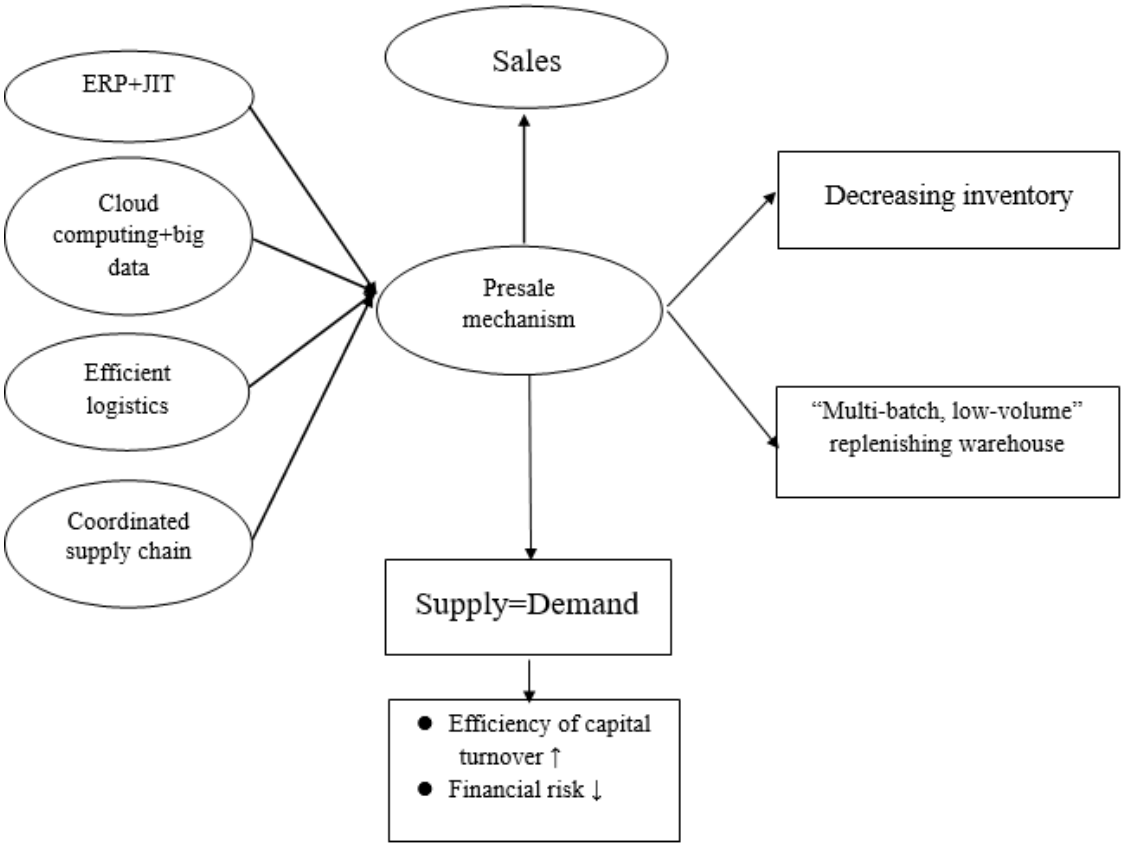

Figure 3. Pre-sale mechanism reduces financial risk pattern

The pre-sale mechanism means that unlike the traditional post-production and post-production, the production process takes place after the order is placed and the payment is made. The pre-sale mechanism is a sales mechanism that is highly matched with personalization. With JIT and ERP as the guarantee, the integration of production, supply and marketing achieves a high degree of integration of demand and production. Under the pre-sale mechanism, manufacturers can complete production and delivery in a short period of time. It is built on a highly coordinated supply chain, a complete logistics distribution mechanism, an intelligent production system that efficiently transmits information, and accurate prediction based on cloud computing and big data. basically. Wu Meimei (2007) believes that when all production activities of an enterprise are purchased, manufactured and distributed according to the order, the warehouse is no longer a warehouse for storing materials in the traditional sense, but a ba cherocess of material circulation. Is a site in logistics operations. The pre-sales mechanism will bring about changes in inventory management and logistics systems. The pre-sale mechanism will reduce the in-process and finished product inventory of the enterprise, enabling the company to supplement the warehouse and distribute the goods by means of "multi-batch, less batch". Eliminating inventory can reduce the occupation of liquidity, improve capital turnover efficiency and capital appreciation rate, eliminate inventory backlog risks, reduce resource waste, and optimize resource allocation. Li Wei and Li Sujian (2001) believe that reducing batch size can force enterprises to increase flexibility, improve the utilization of manufacturing resources, improve the response of production to demand, shorten the manufacturing cycle, and improve the competitiveness and efficiency of enterprises.

2.3 Culture helps multimedia, interactive experience enhances marketing efficiency

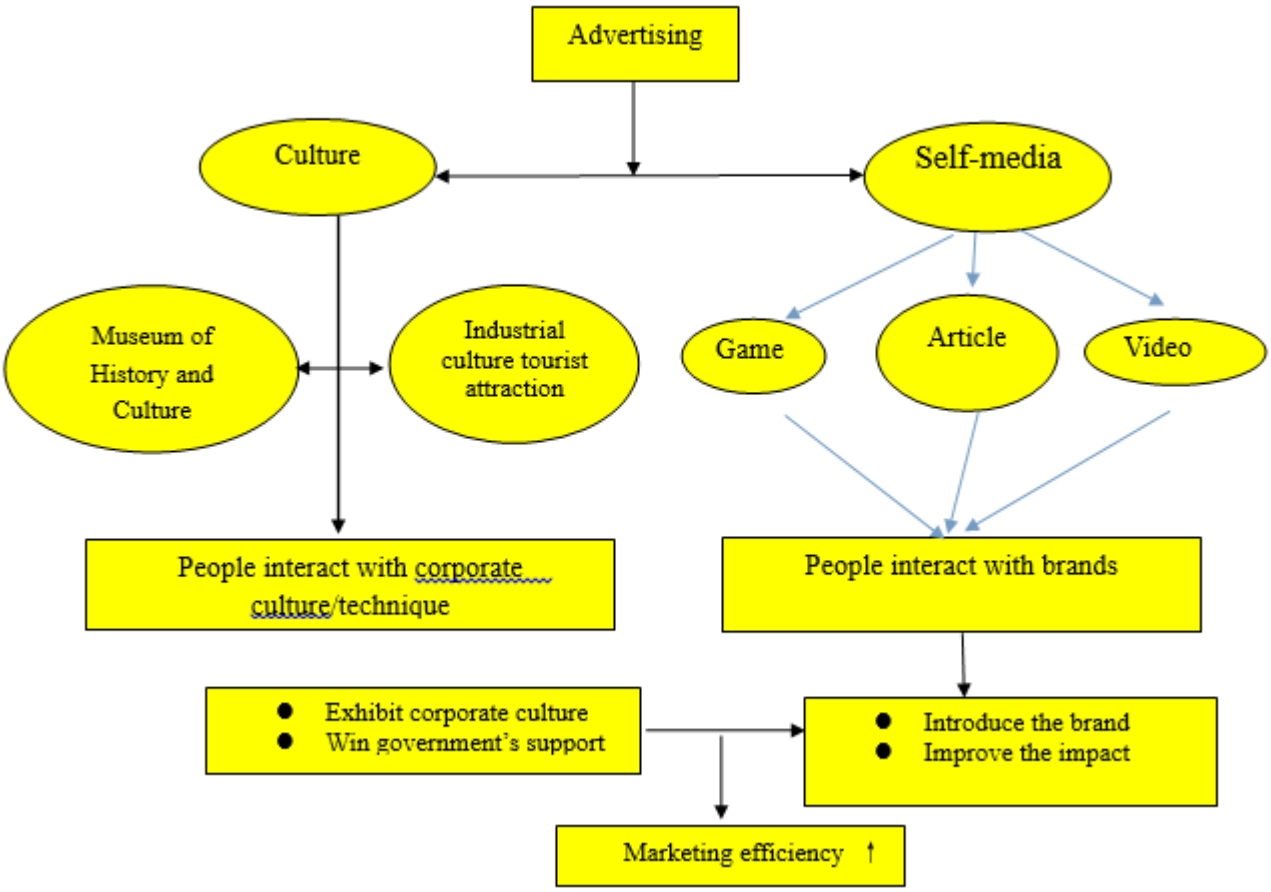

Figure 4. The "Culture plus Multimedia" pattern of the platform economy

Platform-based enterprises can implement cross-border operations with their core products or services to realize the diversity of ecosystems, and then the stability of ecosystems. Stability and diversity can ultimately help platform ecosystems through "resource competition". Achieve the

purpose of "predation invasion" (Cai Ning et al., 2015). The platform ecosystem enriches the industrial structure of the platform. In addition to the manufacturing industry chain, the traditional manufacturing industry often builds its own marketing industry chain to increase brand awareness, promote products, and even derive tourism industry chain and self-media on this basis. Industry chain. The try chain. The platform ecosystem enriches the industrial structure of the platform. In addition to the manufacturing ias micro-movies and WeChat public accounts, and thematic cultural museums, etc., through topic interaction, VR simulation, games, etc. The brand marketing breaks through the traditional TV commercials and paper media advertisements, and the interactive experience enhances the fun, and also deepens the understanding and recognition of the potential customers.

Cultural marketing promotes the interaction between consumers and historical culture and modern technology. It is a kind of deep interaction, which increases the depth of propaganda. At the same time, because of its far-reaching significance in spreading historical culture and popular science knowledge, it has positive externalities to society. It helps companies to establish a good reputation and help companies win the support of local governments. Since media marketing focuses on the interaction between consumers and brands, it is a kind of shallow interaction, but self-media marketing reduces the cost of advertising production, and improves the browsing volume and speed of advertising, because of its impactful senses. The effect is that the consumer's line of sight stays on the advertisement for a longer period of time, thereby improving the marketing efficiency of the advertisement. Chengwen Wang (2018) believes that the advertising and public relations in the mass media have less effective information and lack of continuity and interactivity, which makes the brand image created by the mass media appear flat, static and fragmented. In the Internet era, enterprises from the media have become an important platform for corporate brand communication, not only can carry a large amount of corporate information, but also can permanently preserve this information, and continue to generate influence.

Because the cultural industry needs to invest a large amount of fixed costs in the early stage of construction, the "culture plus self-media" advertising marketing model is more suitable for large-scale manufacturing enterprises with strong capital strength. For the small-scale enterprises in the manufacturing industry that have just started, it is a reasonable strategy to adopt a multimedia propaganda method to create a cultural atmosphere.

3. Henan Daxin Cabinet case

Daxin Cabinet is a typical case of platform manufacturing in Henan Province, which realizes the integration of industry chain and “Internetplus”. It leverages the platform economic innovation business model, combined with the Internet of Things, cloud computing, and big data, to promote the application of "Internet plus" from the sales field to the production field. Daxin Cabinets are also “Top Ten Leading Enterprises in China”. The company's 350 employees in 2016 generated more than 1.2 billion in sales revenue and have a competitive advantage in the market. As the furniture industry is an important area in the traditional manufacturing industry, Daxin Cabinets represent a potential for the platform economy to promote the transformation and upgrading of traditional manufacturing industries with its proud performance.

3.1 Modular manufacturing method of large letter Cabinet

The modular manufacturing method of Daxin Cabinets is mainly reflected in the production process and design process. In terms of production, Daxin is responsible for intelligent manufacturing modular design and sheet production. About 65% of the more standardized parts are outsourced to the world's corresponding players, mainly supporting kitchen appliances. These manufacturers are ODM manufacturers, have their own R & D design system, according to the specifications of Daxin, combined with their own technical advantages to produce module products, the final product is crowned the brand of Daxin. Through the modular production, Daxin Cabinets outsource some production links to ODM manufacturers, reducing R&D and innovation costs, shortening R&D time, utilizing global resources, improving efficiency, and optimizing resource

allocation. The modular production method forms economies of scale within the ODM vendors through a refined division of labor, and forms a range economy at the platform level through vertical integration. Modularization also enables enterprises to re-nuclearize, reduce the investment in fixed capital such as plant and equipment, and allocate more funds to the optimization of organizational structure and innovation of technical equipment.

According to Joseph Pine's modular classification method, the kitchen common style is integrated into 380 standard Meng modules, and the number of modules by the end of 2016. Based on the flexible and diverse combination and adjustment of 2763 modules based on big data, it can restore tens of thousands of real-life kitchen styles, capture the pain points of consumers, fully satisfy the personalized consumer demand of customers, and realize the transformation of enterprise value proposition of from "customer-centric" to "customer satisfaction as the center." At the same time, these modules are scientifically analyzed and generated with high feasibility, which further reduces the unnecessary loss in production, improves production efficiency and reduces production costs. The modular design is also the basis for mass production, which increases the standardization of components and reduces the complexity of production compared to traditional personalization.

3.2 Pre-sale mechanism of the large letter Cabinet and ERP-JIT push-pull system

Daxin Cabinets adopt the pre-sale mechanism of pre-sales production, and the fast delivery under the pre-sale mechanism is based on the ERP-JIT push-pull system. After the product order appears, the cloud computing center encodes the entire Cabinet and splits the entire Cabinet into different modules. Then, by merging the same modules, the amount of production that each module needs to complete in one day is calculated, and then the design pattern is converted into a digitized code. Finally, a two-dimensional code containing production instructions is produced by a computer, and the production instructions of the standard parts are sent to the warehouse. The production instructions of the non-standard parts are sent to the corresponding production workshop through the Internet of Things, and the ERP system automatically completes the product sorting. Daxin's pre-sale mechanism has greatly reduced inventory and management costs. Because the uncertainty of market demand is eliminated in the pre-sales mode, manufacturing companies no longer need to prepare a large inventory of various products to prevent market risks, but turn to strategic and timely matching with the pre-sale mechanism. Fill strategy. In this mode, enterprises use “multi-batch, less batch” to replenish warehouses and speed up warehouse turnover. Therefore, Daxin's warehouse is replenishing goods every day, and the warehouse area is smaller than other manufacturers in the same industry. With the ERP-JIT system and unique inventory management method, Daxin reduced the delivery time from the international average of 30-45 days to less than 4 days. Through rapid turnover, fine management, and reduced waste, the retail price of the product is less than 1/2 of the equivalent brand, while the utilization rate of the material is over 90%.

3.3 Marketing and publicity mode of Daxin Cabinet

Daxin's marketing and publicity model is “Culture plus Self Media”. Its marketing and publicity model presents a network-like structure, which is more diversified and more in line with the characteristics of the platform economy. Although its main purpose is still to promote products and increase the visibility of advertising, its propaganda means not only promotes the company culture, but also has the meaning of inheriting Chinese civilization. Daxin collected 5,000 pieces of unearthed artifacts related to home life and kitchen, and hired relevant experts to screen and protect cultural relics. On this basis, two national-level museums were built - "Daxin Kitchen Culture Museum" and " Daxin Home Museum, which embodies the design concept of Daxin M history, and also promotes the ancient Chinese kitchen culture and home design wisdom. In addition, Daxin also refers to the non-profit industrial tourism scenic spot and study center with the theme of “Magic House” industrial design and intelligent manufacturing. Visitors can learn about Daxin's intelligent process manufacturing process and advanced technology level. Modern manufacturing civilization. Whether it is a museum or a tourist attraction, it is necessary to invest huge sums of money, and the cultural relics are scarce. Daxin has created a unique cultural propaganda model that cannot be replicated by latecomers in the home field. Through its own cultural industry chain, Daxin has

greatly enhanced the brand's influence, and this model has won the government's support.

In addition to cultural propaganda, Daxin also grasped the characteristics of the information age and made full use of multimedia to replace traditional TV and paper media advertising for marketing. Although this method is now more common, Daxin is more professional than most companies. Daxin has built a modern professional studio at its headquarters to produce beautiful photos and make micro-movies for its products, breaking through the characteristics of traditional advertising flat, static and fragmented. In the company, the “Xinxin Research Institutetitutessional studio at its headqWeChat public account, and to engage with potential consumers through the initiation of topics, etc., to expand the radiation surface of advertising, attracting more potential consumers with its interest, and the public. The information on the number can be permanently stored for consumers to read. For example, in 2014, “Daxin Cabinetbinetnt, and to engage with potential consumers through tDaxin Peacock Valley on the public platform. Finally, 500,000 people participated in the activity through the network. These 500,000 people have become the free communication of Daxin. And potential customers. In addition, Daxin's marketing team also carefully manages the media channels such as Weibo, Forum, SNS, etc., and enhances the advertising campaign by increasing traffic.

4. Conclusions and prospects

Through the analysis of functions of platform economy in promoting the change of the traditional manufacturing business model, with the case of the transformation of Henan Daxin Cabinet, we can draw the conclusions as follows:

1) The platform economy has revolutionized the way companies produce -- from traditional vertical integration to modular manufacturing. When production process is divided into different modules, part of manufacturing procedures are outsourced to obtain the advantages of economies of scale and scope, to improve efficiency of resource allocation, and to reduce the cost of personalized customization. In the design process, the crowdfunding model was upgraded -- independent design was transformed from creating something out of nothing into selecting and combining appropriate modules, which reduced the difficulty and irrationality of the independent design and made large-scale standardized production of customized goods possible.

2) The platform economy has revolutionized the sales model of the enterprise. The company has realized the transition from the first production to the first sales, which has promoted the matching of production and demand, reduced the risk of excess inventory, and improved the efficiency of capital turnover. The ERP-JIT push-pull system and the strategy of timely replenishing inventory are the secure guarantees of the pre-sale mechanism.

3) The platform economy has reformed the marketing methods of enterprises -- from traditional marketing based on mass media to diversified marketing means which can be concluded as “culture plus self media”. On the one hand, it renders advertisements vivid and interesting, thus enhancing the influence of advertising; on the other hand, marketing also bears the public responsibility of conveying culture, whose impact on the society is far-reaching.

This study relies mainly on case studies, and the demonstrative process lacking in data and models may not be rigorous. Also, the theory about the changes of business models caused by platform economy may not be applied to every company, thus it may not have reference value for some unique manufacturing enterprises. And this paper mainly discusses the transformation of production mode, sales mechanism and marketing model brought by the platform economy to manufacturing enterprises. In the future, maybe more research could focus on exploring other aspects of business models which have been reformed due to platform economy. The impact of platform economy on the upgrade of manufacturing business models could also be investigated from other perspectives, such as organizational structure. In addition, we also hope to carry out empirical verification in more manufacturing fields, and explore the differences of enterprises with different scales, different fields and different market structures in the direction of the transformation of business model under the influence of platform economy. What’s more, to advance the development of platform economic theory, in the future, we will make efforts to establish a

mathematical model with broad applicative value to discuss the impact of platform economy on business model change, and with such a model, we could propose better strategic policy recommendations for the transformation and upgrading of traditional manufacturing.

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