

# RESEARCH ON THE UPGRADING APPROACH OF DATANG SOCKS INDUSTRY

Yao Chen, Jiaping Wang, Yu Zhou, Yangkai Lou, Bofan He\*

*School of International business, Zhejiang Yuexiu University, Shaoxing, 312000, Zhejiang Province, China.*

*Corresponding author: Bofan He, Email: 20171017@zyufl.edu.cn*

**Abstract:** As "the hometown of Chinese socks industry, Datang Socks is not only one of the six pillar industries in Zhuji City", but also 70% of the socks in the country are produced in Zhuji Datang. However, it is currently facing the problems of low industrial level, low industrial concentration and low industrial quality. This paper studies the solution to the development problem of Datang socks industry and the path of industrial upgrading by using the theory related to the global value chain. This paper proposes solutions from the aspects of building its own value chain and innovative technology by studying the development characteristics and development history of Datang socks industry, combined with the theory of buyer-driven chain, production-driven chain, and international division of labor in the global value chain. By studying the industrial upgrading of Datang Socks from the perspective of the global value chain, on the one hand, it provides suggestions for the future industrial upgrading of Datang Socks, and on the other hand, it can also be used as a reference for other manufacturing industries in China to seek industrial upgrading.

**Keywords:** Global value chain; Datang socks; Industrial upgradin

## 1. INTRODUCTION

At present, China is facing a huge challenge of "two-way squeeze" Due to the lack of technology in the high-end industry. As some industrial companies are at a low value added stage in the global value chain, they are at great risk of being targeted by downstream multinationals from developed countries. In fact, most of these companies are in the downstream production stage of the global high-end manufacturing industry [1]. Moreover, high-end companies are heavily dependent on the US for their technology. At present, the value added of Chinese industry is below 21%, while that of developed countries is between 35-40%. China's industrial value added per capita has just reached US\$3, 000, only a third of that of developed countries. The relative advantage of China's traditional industrial capital endowment has gradually been lost, and the prices of factors such as land and talent have become increasingly high, and the constraints on resources and environmental protection have become increasingly stringent, which result in serious overcapacity in some industries[2]. At the same time, more and more developed countries are joining the world competition, and the world production factors are showing a reshaping stage of development towards the return of the high end and the transformation of the middle and low end. Therefore, how to successfully achieve industrial upgrading in the perspective of the global value chain has become a key issue that Datang's hosiery industry urgently needs to solve.

The market for socks is huge and they are a basic necessity for people's lives. China is a strong manufacturer of socks and currently around 40 percent of the world's hosiery products come from China. Moreover, the trend is increasing year on year.

## 2. THEORETICAL BASIS

### 2.1 Global Value Chains

The concept evolved and underwent several iterations before it became the precise term. The basic projects consist of the sale of logistics services, the delivery of logistics services, procurement and after-sales consultancy and management services[3]. The supporting projects are generally divided into four parts, namely business and building development, human resources management, research and development and scientific production, which are interlinked and interact with each other to form a chain of activities for the development and innovation of the company. Kogut introduced the term 'value chain' as a cornerstone of value adding chain, arguing that the economic value added in the process of moving from manufacturing to market and selling a product is represented as an activity, and that this work is not done by independent producers[4]. A manufacturer can only be involved in a specific link, but will certainly establish technical partnerships or working links with other producers. The creation of the concept of the value chain link theory provided the cornerstone for the development of the link theory in the world of business. In 1994, Gereffi coined the term world business chain. In the context of economic integration, the world's industrial production system is highly developed and is not limited to one company or one country[5]. The world of industrial production is made up of a wide range of products. A unique product structure has been created for this industrial production system, which integrates and integrates the various manufacturers of the world in the production system of each city. The world's commodity chains are thus constituted, precisely because they are defined as products only. In 2001, Dr Gereffi defined the world value chain system on the basis of the world commodity chain. He also analysed the pattern of industrial production in the world and studied in depth the differential benefits of logistics management in a global value chain

System[6]. The early twenty-first century industrial research and development institutes have described global value chains in detail, referring to the international value chain used to reflect the price of a product or service. The global value chain is a network of firms around the world through the manufacturing, distribution and return process, which includes the entire process of buying, processing, manufacturing, distribution, consumption and return. With the further development of international trade, the International Division has gradually changed from the original division of labor between commodities to the division of labor within commodities, resulting in a new type of division of labor called "international value chain system division of labor". Global value chains are generally composed of three segments: technology development, manufacturing and marketing, with the manufacturing segment being much smaller than the other two in terms of price value added [7, 8]. The price incremental characteristics of such a division of labor in the value chain laid the foundation for the introduction of Mr. Shi zhengrong's "smile curve" concept in the 1990s, and the stage of price incremental increase was also the stage of further price escalation from product assembly to upstream technology development and downstream marketing [9]. The upstream and downstream segments, representing the core technology development and sales and service segments respectively, have high added value and high profitability, while the production and assembly processes within them have low added value and low profitability. In the context of the distribution of the world's value chains, the actual state of technological development varies from one country to another, making the position of technology in each country inevitably different. Developed countries dominate the world's value chains because of their technological power and their control of the core value-added technology development and marketing services. Developing countries, on the other hand, rely on the economic power of other resources, such as population and arable land, and thus dominate the labor intensive parts of the processing and assembly process. Because of the high substitutability of output factors such as labor and arable land, developed countries use different methods to pressure developed countries in terms of market development [10].

## 2.2 Buyer-Driven Chain

Buyer-driven chains refer to the outsourcing of OEM production and manufacturing services by companies with relatively powerful branding or distribution channels in markets such as developed countries and regions, through the establishment of a global network of multinational goods distribution services. These are typical of consumer-driven chains, such as Coca-Cola, Nike and the larger retail sector [11]. Companies in such consumer-driven value chains generally share common characteristics: they design products, manage brands and market their products in their core regions, and produce and process them in developing countries where raw material costs, labor costs and land production costs are relatively low. Gereffi conducted empirical research in 2001 on the clothing and shoe sectors, which showed that the main sources of power in consumer-driven value chains are the clothing brands and retail shops that have a real core voice. Buyer-driven chains are often associated with labor-intensive industries. Most of the value-added links in these chains are concentrated in research and development, branding, product design and marketing, whereas the controllers or chain owners of the value chains are usually companies from developed countries. At the same time, these companies are largely in control of a large number of sales channels as well as huge branding and research power, while the central manufacturing link is the lowest value-added link [12]. In this chain, our companies are always in a position of being managed in the value chain.

In the consumer-driven value chain system of upgrading, manufacturing upgrading and the entire process is limited to the manufacturing chain. By moving up through this stage, the manufacturer only increases its comparative position among similarly positioned manufacturers. It does not gain greater growth in the consumer-driven value chain, nor does it get a share of the excess profit in the hands of product vendors and retailers. However, process improvement and product improvement are the basis and cornerstone of the latest functional developments in manufacturing. The ultimate aim of the manufacturing industry is to accomplish competence enhancement, which is also the basis for its ability to eliminate controlled division of labor and weak competition in the value chain.

## 2.3 Producer-driven chain

The producer-driven chain is a whole process of consumption and the operation of a complete industrial chain driven by the investment of producers. The manufacturer can be a large company with strong development, capital and a unique level of manufacturing within the industry, or a local company that has actively developed its own industrial system to promote local economic development [13]. By establishing a producer-based international marketing network, from distributors to retailers and agents, manufacturers can achieve direct international distribution across multiple industries and manufacturers, and achieve high growth rates along the value chain. In contrast, international production networks in capital-intensive and technology-intensive industries (e.g. aviation, precious equipment and emerging high-tech industries) are largely producer-driven. In producer-driven value chain systems, the production is usually of more skill-intensive products, but since the value-added part of the chain is also often concentrated in the manufacturing process, product upgrading is fundamentally based on the renewal of production processes and product upgrading [14]. As functional upgrading is also usually dependent on process upgrading and product upgrading, the trajectory of product upgrading in a producer-driven value chain structure also usually follows the pattern of functional upgrading - process upgrading - product upgrading - chain upgrading.

### 3. FACTORS INFLUENCING THE RELATIONSHIP BETWEEN GLOBAL VALUE CHAINS AND INDUSTRIAL UPGRADING IN THE DATANG HOSIERY INDUSTRY

#### 3.1 Technology

Kaplinsky's study of the technological characteristics of South African automotive component manufacturers demonstrates that technological upgrading has a significant positive impact on the upgrading of the industry. Multinational companies, in order to achieve optimal returns, reduce costs by allocating resources optimally across locations and dividing up production activities for the same product. In the process of entering the global manufacturing market, national companies have to cooperate with each other in order to manufacture and market the final product[15]. In order to improve the quality and efficiency of their products, multinational companies from developed countries also provide technical support and assistance to our production companies in order to achieve a better producer value chain. In the course of the country's technological assistance, a technological spillover effect is created. Through continuous learning and accumulated experience, China can quickly surpass the production technology level of developed countries, laying a good foundation for industrial upgrading.

To investigate whether technology spillovers from developed country firms, rather than direct technical support to national factories, Pack and Saggi investigate in depth the effect of technology spillovers from developed country factories to national factories. The study found that technology spillovers to developed countries can occur even if the developed country manufacturers cannot provide such technology. Therefore, the technology spillover effect of developed country companies can be used to upgrade production in Datang's hosiery industry, regardless of how developed country companies develop direct technological resources, when the industry is in the process of global production.

#### 3.2 Industry Scale

The scale of enterprise manufacturing will have a significant impact on the upgrading of manufacturing industries in the perspective of world value chains. Firstly, when the scale of manufacturing enterprises' products increases, a large-scale effect will be formed, which will improve the company's economic efficiency, enhance its competitiveness and drive industrial development, thus promoting the upgrading of China's manufacturing industry in the perspective of world value chains. Secondly, in the expansion of the company's business scope, it will also have greater competitiveness and influence in the market in the process of playing with competitors, which will create more benefits for the company and thus promote the company's growth. Thirdly, the larger scale of production will also give the company an advantage in the market competition[16]. For example, they have more say in market negotiations and are therefore more likely to win favourable outcomes, especially in the development of industry standards. Having more control in market economy activities means that companies have more opportunities to set rules that are beneficial for their own development, thus positively influencing the long-term development of the company in order to better upgrade the manufacturing industry in general in the perspective of the world value chain. Fourthly, as companies with larger production scale are more risk-resistant, these companies are often more likely to withstand the market and survive when a crisis hits. As a result, companies with larger production scale are more likely to be better able to upgrade their industries. Fifthly, as larger companies are more easily accepted and recognized by others when exploring the market, they have a brand effect, which makes larger companies better able to upgrade their manufacturing products in the perspective of the world value chain[17]. Sixthly, when the company's production scale is quite large, it can provide more jobs and economic benefits to the state and local finances, which will also get a lot of capital support from the state and local government, and thus promote the company's growth, which is also conducive to the better completion of the global value chain perspective of manufacturing product upgrading. Therefore, the increase in production capacity of Datang Hosiery can also contribute to the upgrading of the industry in the global value chain perspective.

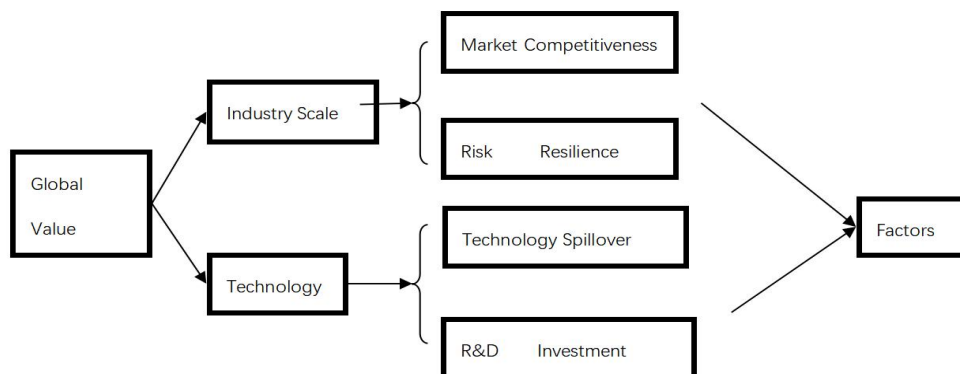


Fig. 1 Factors influencing global value chains and industrial upgrading

## 4. HISTORY OF DATANG HOSIERY

### 4.1 Start-up Phase

In the late 1970s, the people of Datang began to manufacture the more primitive hand-cranked sock machines, in response to the overflow of technology, machinery and management personnel from state-run sock factories in Guangzhou and elsewhere. Zhongjia Village was the birthplace of the hosiery industry in Zhuji. More than 120 of the 160 families in the village had formed the original "hosiery factory". But through years of hard work and development, a complete industrial chain has slowly emerged[17].

In 1980, a large hosiery market was set up on the side of a country road, organized by the merchants themselves. In the autumn of 1986, thanks to the connection of the Shaoda highway with the Hangjin highway, the Datang hosiery market took shape, with more than 2,000 manual hosiery machines that enriched the ordinary people of the 20 villages around Datang. According to the American weekly *Der Spiegel*: "In our country, they have bravely and recklessly activated the growth dynamics of small and medium-sized enterprises." The European *Wall Street Journal* also commented: "The rise of many peasant entrepreneurs, despite having little business experience, has long become a matter of debate."

### 4.2 Block Economy Stage

Since the beginning of China's rapid economic development, the block-based business economy has slowly developed into an important type of economic development in Zhejiang Province. With half of the province's total manufacturing sector, it plays a key role in promoting diversity and collaboration, increasing the distribution of social resources, improving industrial and competitive infrastructure, creating jobs for workers, and fostering industrial growth and development[18]. Through their own struggles, Datang people have overcome the barriers of resource constraints and business experience, relying on aid to build space and move away from a fragmented and uneven pattern of economic growth. Led by the local government, relying on private capital, a large number of jobs and foreign trade markets, as well as government policies and community mobilisation, family businesses have gradually grown and become a rural economy. Since the establishment of the town in October 1988, Datang has been a firm believer in the leadership of the Communist Party of China and has seriously implemented the economic guidelines of the Central Government. The town has gradually worked out a way of reform and development, with market building as its leader and the two major blocks of light textile and spring processing as its wings, in order to promote the town's economic growth[19]. In addition, the hosiery industry also developed rapidly during this transformation, and a large and distinctive community block economy was gradually formed. This in turn has further accelerated the pace of industrialisation in Datang town, comprehensively promoting the industrialisation process in the town and stimulating an increasingly obvious spatial clustering effect, thus further promoting the pace of rural urbanisation in Datang. In 1995, the per capita income was 4,550 yuan, and the total industrial and agricultural output value was 1.69 billion yuan.

### 4.3 Industry Cluster Phase

After the economic construction in Datang in 1990, a large number of hosiery enterprises gathered in Datang and the number of products and the scale of the industry grew at the same time. In 2001, China entered the WTO and provided Datang with more international trade orders. In 2002, China Light Textile City was established in Datang Town, forming the third generation of an international integrated market -- a large integrated market for hosiery logistics, and the industrial chain of Datang's hosiery industry was gradually completed. In 2003, with the completion of the registration of the national famous trademark "Dangia", other hosiery merchants also started to create their own brands, thus Datang also entered a new period of development.

According to Weber, there are two major stages of industrial consolidation: firstly, there is the focus on the industry due to the gradual increase in the size of the industry and its indicators and overall results; secondly, there is the rapid development of the space in which the leading products are located and the gradual absorption of a large number of similar enterprises through the complete organisation of the enterprises, leading to industrial consolidation. Since 2002, Datang's hosiery industry has been moving towards a new stage of industrial consolidation, which means that it has all entered the second step of industry consolidation[20]. Due to the rapid increase in the total number of hosiery manufacturing companies in Datang, the town's hosiery production division of labor and product synergies are evident, and a complete industrial chain network has gradually been formed, including the production of hosiery raw materials, machinery manufacturing and processing, new product production, marketing and promotion, packaging and distribution activities. The increasing integration of production factors has greatly reduced the cost of resource allocation and greatly enhanced market competitiveness. In terms of infrastructure construction, by 2006, Datang Town had completed a number of large-scale projects such as the Light Textile and Hosiery City, the town government building and the Datang Theme Park. In the same year, the town's total industrial and agricultural output value surpassed the 25 billion mark, the rural GDP per capita exceeded more than 10,000 US dollars, the state-owned financial income was more than 2.5 billion, the rural per capita income was 19,789 yuan, and the comprehensive national economic capacity was ranked among the top 100 in the city and the top 10 in Zhejiang Province.

By 2010, the hosiery industry and its related products in China had grown rapidly, with over 3,500 companies engaged in the production and distribution of raw and auxiliary materials, hosiery machines and accessories, intermediary services and various hosiery-related companies. From 2002 to 2015, the number of hosiery manufacturers grew from

over a thousand to nearly ten thousand, and the number of large and medium-sized accounting firms grew from over a hundred to over five hundred. At the same time, eleven leading companies in the hosiery industry with national well-known trademarks, such as Bu Ren, Dangia, Love Fear and Oriental Edge, have emerged, representing a comprehensive shift from the initial strategy of OEM enterprises to that of their own companies. During this period, Datang has also created a national key high-tech enterprise, five national key scientific research institutions in the hosiery industry, two national quality inspection units for light textile products, etc. In addition, many new fabrics, new hosiery arts and new products have been developed.

Datang enterprises are also exploring and continuing to expand their markets, namely the original leading hosiery company, Dangia Enterprises, which has started to invest in online marketing and multinational e-commerce at domestic and international level. There are also new hosiery enterprises such as Dongjun Electric that have invested in the online sector at domestic and international level.

In 2002, the Light Textile City was established in Datang Town and the 3rd generation of the industry collection trade was formed, namely the sock logistics and raw material gathering and integration trade, thus making the whole industry chain of sock manufacturing gradually improved. In October 2011, the fourth generation of the Reactor New Hosiery Trade was built and put into use, thus further improving the service functions of the cluster and making it the largest integrated trade city in China focusing on hosiery products. As of 2012, Zhuji's new hosiery industry cluster has more than 10, 000 hosiery manufacturing (machinery processing) companies (including individual machinery processing households), producing new hosiery raw materials, hosiery machines, printing and wrapping, finishing processing of stereotyped products and other related enterprises of more than 3, 500. In 2012, there were 65 companies with sales of more than 100 million yuan: 20.6 billion pairs of socks, and the total output value of the new manufacturing industry reached more than 64.9 billion yuan, accounting for more than 70 percent of China's domestic production scale and more than 35 percent of the world. Industry sales can reach up to 12 billion. The company, which used to do OEM work, is gradually no longer satisfied with the meagre profits it receives for the simple operation of its products, so the company is also beginning to explore the way of transformation and upgrading, and is aiming to improve the company's technological innovation and marketability to implement the two aspects of upgrading.

#### 4.4 Hosiery Town

Datang Hosiery is a typical example of a traditional Chinese industry that has made use of innovation and restructuring to achieve profitable business growth. After thirty-seven years of development and innovation, Datang Town has been able to build up its strength in the face of changes in the hosiery industry across the country, and has finally been included in the first batch of the National List of Small Towns with Special Characteristics in October 2016. Hosiery Town has also provided many sources of livelihood for the general public, and has greatly improved the quality of life and livelihood of the residents of the small town.

"The strengths of Hosiery Town are, first of all, that its products are centred on the hosiery industry, from materials and auxiliaries to product design, manufacturing equipment, production, processing, distribution, financial services, exhibitions, training, etc. All hosiery-related enterprises are present, and the product range is complete, expanding the business to the world.

"The second characteristic of the "Socks Town" is its cultural features, from technology to art, from business to culture. The hosiery industry has not only become an important economic source of production and life for the people of Datang, but also an important cultural vehicle for the progress of social civilization.

The "Hosiery Town", as a regional identity, conveys an international competitiveness, representing a town where 70% of the world's hosiery products originate.

#### 5. DATANG HOSIERY DEVELOPMENT ISSUES

After forty years of development, Datang's hosiery industry has passed a stage of rapid growth and has now reached its peak. However, the industrial structure of the hosiery industry also shows the characteristics of low industry level, low industry concentration and low industry quality.

The industry level is low. Firstly, from the analysis of the economic structure of the industry, the total output value of enterprises represented by advanced machinery and equipment manufacturing, new materials and new energy accounts for three percent of all industrial enterprises. Then from the analysis of the structure of the industry, although the industry cluster has formed a gathering effect, but because of the distribution in the design, brand management work and other value chain links in the high-grade link is less, in the production process of the middle and low-end link is more, thus leading to product homogenization competition is obvious, the efficiency is not good.

The concentration of the industry is low. Among the 5, 000 industrial enterprises in Datang's hosiery industry, there are more than 200 regular companies, but they account for only 28% of the total, with 28 enterprises with sales exceeding 100 million yuan, seven with more than 500 million yuan and three with more than 1 billion yuan. The development of Datang hosiery industry so far is dominated by small and medium-sized enterprises, the lack of domestic industry and even international leading enterprises, there is no one enterprise can drive the development of the entire Datang hosiery industry.

The quality of the industry is also poor. As far as the quality of scientific research is concerned, the ability of independent innovation and the level of technology are not high because the investment in research is not enough. The

proportion of industrial R&D expenditure to the company's main business revenue in 2019 was only 1.1 percent, while the increase in research expenditure in 2019 also decreased to 13 percent from 18 percent in 2018. The company ranked relatively low in the independent innovation capability index. In terms of management, many enterprises, especially leading enterprises, are stuck in the old enterprise management model, but have failed to establish a modern enterprise management system structure with the "separation of the three powers" of "decision-making, execution and supervision".

## **6. THE UPGRADING PATH AND COUNTERMEASURES OF DATANG'S HOSIERY INDUSTRY FROM THE PERSPECTIVE OF GLOBAL VALUE CHAIN**

### **6.1 Creating a Domestic Autonomous Value Chain**

According to the analysis of the structure of international manufacturing import and export trade, although China is now a major exporter, the value of our exports is still labor and low-technology products, and the internal structure of exports has become extremely imbalanced. China's early entry into the world's value chains was largely a result of its mastery of labor-intensive production methods, taking advantage of low labor costs. However, these labor-intensive production methods are often at the bottom of the world value chain and are less productive and easily replaced. As more and more developed countries move towards a global division of labor, China's labor resource advantage is gradually diminishing, which, in a sense, also causes China's labor-intensive industrial production in the global division of labor to become less advantageous and the profitability of producers to decline. This has led to a situation of "low-end lock-in" or even "poverty growth". At this point, the way out of the dilemma for Datang Hosiery is to form its own value chain at domestic level so as to leapfrog up in the international value chain. In order to achieve leapfrogging in the international value chain, it is necessary to actively cultivate high-tech enterprises with international independent competitiveness, and on this basis, drive the growth of related enterprises in the middle and upper reaches, so as to establish and form an international independent value chain. In order to improve the international value chain, Datang Hosiery needs to do the following things at the same time.

Firstly, develop local customers. The product manufacturing process can be adapted to domestic and international requirements, and by completing development and design, product manufacturing and marketing in the country, we can maximize revenue at the two most profitable ends by reducing transportation and information transaction costs in the middle. In addition, through the expansion of domestic and international markets, the company can improve its ability to accept foreign trade shocks and improve the environment, forming its own value chain.

Firstly, develop local customers. The product manufacturing process can be adapted to domestic and international requirements, and by completing development and design, product manufacturing and marketing in the country, we can maximize revenue at the two most profitable ends by reducing transportation and information transaction costs in the middle. In addition, through the expansion of domestic and international markets, the company can improve its ability to accept foreign trade shocks and improve the environment, forming its own value chain.

Secondly, cultivate core brands. The scientific and technological spillover effect of core industries can improve the quality and efficiency of production in upstream, midstream and downstream companies, which promotes the growth of companies in different value chains and leads to the common progress of social links. Through research and cooperation in core industries, the basic research results of research institutes can be transformed into real output, thus improving the effectiveness of human resources training and enhancing the overall composition of the domestic autonomous value chain.

By creating a domestic autonomous value chain, small and medium-sized enterprises can be brought together and involved in the value chain, which can solve the problem of low industrial concentration to a certain extent.

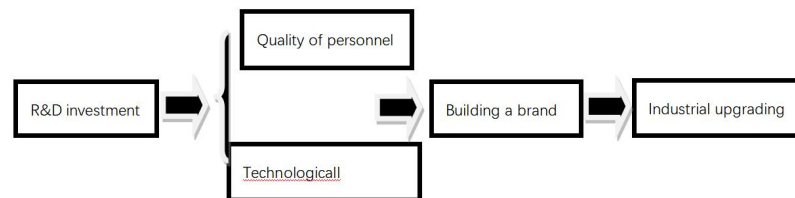
### **6.2 Improving the Ability of Enterprises to Innovate Independently**

Technological progress is a major factor in the development of the sector. In the global value chain, China's enterprises' profitability model mostly relies on high inputs, resulting in low added value to their products, low profits and lack of competitiveness in the international market. Therefore, if we are to promote the upgrading of China's Datang hosiery industry, we need to do the following:

Firstly, it is necessary to focus on product development, increase the technological content of products, reduce the over-reliance on labor in production and reduce the dependence on foreign technology. At the level of technology and workers, companies need to improve the professional skills of their workers, and companies can make use of retraining to improve the technological innovation capacity of their workers and invest in technological talent. At the same time, the cultural value of traditional production should be given full play, and knowledge should be used to create new value for traditional production and promote advanced production. Secondly, it is necessary to increase investment in product development and design, establish its own brand, form a brand effect and improve its position in the consumer-driven value chain.

### **6.3 Improving the Overall Strength of the Business Participants**

On the basis of the fact that human capital contributes significantly to the development of enterprises, we can improve them by improving the overall competence of the people who participate in the enterprise. The specific requirement is to strengthen the integration of education with enterprises and schools, and universities should strengthen the technical education of university students and develop their labor skills. For example, finding more social practice opportunities and chances for university students to integrate more knowledge they have learned into their practical work, improve overall management and promote the overall business transformation of high-tech management. Through the training and adjustment of scientific and technical personnel, the company can improve the technical content of its research staff, strengthen cooperation with universities and colleges, train professional talents, increase the exchange of talents with external companies and other measures to improve the technological content of the company, promote business improvement and innovation, and promote the optimization and upgrading of the industry.



**Fig. 2** Datang Hosiery Industry Upgrade Path

## 7. CONCLUSION

Currently, Datang's hosiery industry is still in an industry model driven by producer-driven chains, with problems of lower industry levels, lower industry concentration, lower industry quality, and a lack of local own brands and leading enterprises. In this paper I propose to take a technological breakthrough, strengthen innovation, improve the quality of the enterprise personnel and create its own brand to break through the defects of the labor-intensive industry and improve the status of Datang's hosiery industry in the international division of labor.

## COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

## REFERENCES

- [1] Chen Renhao. Research on Influencing factors of China's manufacturing industry upgrading from the perspective of global value chain. Jiangxi University of Finance and Economics, 2020.
- [2] Zhao Huijie. Research on strategy and implementation path of transformation and upgrading of Datang hosiery industry. University of South China, 2020.
- [3] Wang Jing. Research on industrial upgrading effect and mechanism of supply and demand matching: An empirical test from the perspective of global value chain. Journal of Guangdong University of Finance and Economics, 21, 36(05): 41-51+60.
- [4] Xu Han. Research on the impact of Yellow embedment in global value chain on China's manufacturing upgrading. Northwestern University, 2021.
- [5] Niu P. Research on Influencing factors of China's manufacturing upgrading in the context of global value chain. Inner Mongolia University of Finance and Economics, 2021.
- [6] Xing F. Research on influencing factors and paths of China's manufacturing upgrading from the perspective of global value chain. Jiangxi university of finance and economics, 2020. DOI: 10.27175/, dc nki. Gjxcu. 2020.000710.
- [7] Wang Xiaodi. Research on manufacturing upgrading model based on "Internet +". Dalian University of Technology, 2018.
- [8] Shi T W. Study on industrial upgrading of textile industry in Shandong Province under global value chain. Shandong Normal University, 2018.
- [9] Jiang Y. Research on the upgrading path of China's manufacturing industry from the perspective of global value chain. Dalian university of technology, 2019. DOI: 10.26991 /, dc nki. Gdllu. 2019.001288.
- [10] Zhang X G. Research on Employment management of migrant workers in Zhuji Datang hosiery enterprises under the background of "machine replacement". Zhejiang A & F University, 2018.
- [11] Ma Yuanyuan. Research on the transformation and upgrading of China's Textile and Garment Industry under the Global Value Chain. Jilin University, 2018.
- [12] Hou Jingyuan. Analysis on the transformation of cross-border trade mode of agricultural products in China under the background of "One Belt and One Road". Business Economics Research, 2018(9): 145-147.

- [13] Zhang Wei. Analysis of international trade of Agricultural products under the background of "One Belt and One Road". National Business Situation and Theoretical Research, 2019.
- [14] Qu Hongyan. Research on International Trade Development Initiative of China's Characteristic Agricultural Products from the perspective of "One Belt and One Road" Development Initiative. China Civil and Commercial Society, 2019(11):1.
- [15] Shang Jun, Niu Jianjun, Dong Tao, et al. Research on diversification of China's external investment and financing model under the background of "One Belt and One Road" construction. Western Finance, 2018(2): 5.
- [16] Gan Yunkai. Research on Agricultural trade between China and Central Asia under the background of the Belt and Road Initiative. University of International Business and Economics, 2018.
- [17] Liu M D, Zhang Z X. Research on the characteristics of China-Eu agricultural trade under the background of the Belt and Road Initiative. Journal of Kunming University of Science and Technology: Social Science Edition, 2018, 18(2):10.
- [18] Hou Jingyuan. Analysis on the transformation of cross-border trade mode of agricultural products in China under the background of "One Belt and One Road". Business Economics Research, 2018(9): 3.
- [19] PALIOKAITĚ, A. Global Value Chain Upgrading and Business-academia Collaborations: Case Studies of Successful Innovators. Triple Helix, Suppl 1, v. 8, n. 1, p. 37–79, 2021.
- [20] SPOSI, M.; YI, K.-M.; ZHANG, J. Trade Integration, Global Value Chains, and Capital Accumulation. IMF Economic Review, Suppl 1, v. 69, n. 3, p. 505–539, 2021.