

How to Break Through the “Cascade Effect” to Realize the Industrial Structure Optimization——Based on the Consideration of Huawei’s Binary Interaction Mode of Industry Upgrading

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Abstract: China is confronted with the difficulty of breaking through the “cascade effect” under globalization background. This paper argues that different division level between developing countries and developed countries is the root to cause “cascade effect”. In order to promote industrial structure optimization, developing countries should establish self-development value network through reconstruction of value chain, supply chain and industry chain, which can deepen division and take the initiative of optimizing industrial structure. Native system integration enterprises are dominant in the course of industrial structure optimization, which select appropriate products to form new comparative advantage and accumulate resource and capability, then lay the foundation of competitive advantage. During the course of industrial structure optimization, the government should provide supporting policies in accordance with enterprise strategy development, and encourage system integration enterprises to launch product and technology upgrading. As a typical case study of internalization, Huawei plays the pivotal role in researching reconstruction of value network, cultivation of system integration enterprise’s capability as well as industrial structure optimization.

Introduction

According to the data provided by the OECD, more than 66% of the global trade in goods is intermediate trade, and the number is as high as 70% in service trade, therefore, domestic and foreign scholars, government officials and international agencies agree that international trade has entered the era of global value chain. The so-called “global value chain” refers to product design, supply of raw materials, production and assembly of intermediate products, sales and recovery of finished products of which all production processes are divided in world-wide, which forms large production network covering countries and regions of the world. For a long time, our country locates at the end of the global value chain, confronting with larger market risk and environmental cost than upstream enterprises, but the gains are lower. Components and raw materials of processing trade relies too much on import, R&D design and brand marketing “two head out” mode go against enterprise’s Independent innovation and brand creation. In the post-crisis era, industrialized countries headed by the United States once again seize the status of high-end division, and inspire new “cascade effect” in the global value chain in order to consolidate system integration

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enterprise's position. On one hand, we promote industrial upgrade via science and technology breakthrough as well as strategic emerging industries leading international trend; on the other hand, industrialized countries set tougher quality inspection and emission standards to restrict competition and profit space of developing countries, on the grounds of high unemployment rate and environmental protection.

Analysis of Huawei's binary interaction mode of industrial upgrade

This thesis selects Huawei technology co.ltd as a case study, which is significant to study formation of new comparative advantage, reconstruction of value network and cultivation of system integration enterprise's capability.

Huawei launches market selection and production division in view of new comparative advantage

In the 1980s, China Telecom equipment market was almost monopolized by international multinational companies, so local enterprises find it was very difficult to obtain market space; China stayed at the initial stage of economic transition, and market system had not yet established and transaction cost was high. On account of these reasons, plenty of contemporaneous enterprises chose OEM mode, to utilize the advantage of low labor cost and acquire stable income. However, Huawei attempted to establish value network of local market, selected semi mechanized and digital entry-level switches JK1000 for R&D, and concentrated on rural market which was neglected by multinationals to provide low-income people with products and services, thus formed comparative advantage of product division. As Huawei accumulated more experience in product development and marketing, gradually began to produce complicated large switches and expand market to the major cities of China. Following the same route in the process of internationalization, Huawei entered Africa, Russia, and Southeast Asia with weak Telecom foundation then Europe and the United States. Huawei's product division and market selection reflects the principle of new comparative advantage in international division of labor. The transformation and upgrade of Chinese enterprises are often faced with the obstacle of high transaction cost, inefficient supply chain and weak system integration capability. Only by matching external environment with products and market that meet enterprise's capability can avoid positive competition of developed countries, then form a new comparative advantage and acquire development opportunity. Huawei's product division and market selection based on new comparative advantage is momentous for enterprises to win through "cascade effect".

Promoting system integration enterprise's capability through reconstruction of value network

At the early days of internationalization, Huawei's domestic value network doesn't effectively support product development in overseas market. In 1997, Huawei's R&D cost and product development cycle were more than twice the optimal level of industrial circles, while there was a huge gap between Huawei's per capital income and supply chain management level and advanced ones. The advantage of low labor cost is offset by low efficiency of product development and supply chain, which made it is difficult to profit from expanding overseas market. In this case, Huawei introduced IBM's integrated product development project, unified related product R&D process to a R&D group which was responsible for cost and benefit. This strategy reduces product development cycle and market risk dramatically. Around 2000, Huawei had also introduced IBM's integrated supply chain management project, outsourced non-core business at the end of value chain,

such as manufacturing, assembly, delivery and logistics, which had made a system integration enterprise of supply chain without workshop and inventory. Huawei forms its own value network of governance right through reconstruction of value chain, supply chain and industrial chain, and obtains higher system integration capability. By means of outsource of related process, it enables production more flexible and strengthens the ability to respond to user's demand, which lays the basis of Huawei's success of internationalization. Huawei's practical experience suggests that reconstruction of value network is vital for improvement of system integration enterprise's capability.

Utilizing new comparative advantage to accumulate resources, supporting main business to form competitive advantage

In order to fulfill reconstruction of value network, development of a single business alone is difficult for system integration enterprises to acquire corresponding market space, unless there is a massive investment, it won't reach the competitive economies of scale. Huawei makes the best of new comparative advantage of product division, launches product diversification and forms the peripheral-core situation. Periphery refers to some non-core products, whose function is to expand the market, increase income and support the development of main business. Huawei's binary interaction mode (as figure 1 shown): on one hand, Huawei utilizes new comparative advantage to accumulate resources, so that business owners can obtain market share at lower price, reconstruct value networks and form competitive advantage; on the other hand, peripheral business can acquire new development opportunities via core business platform. This mode vigorously supports Huawei to gain ground in international market and make the leader of commercial peers.

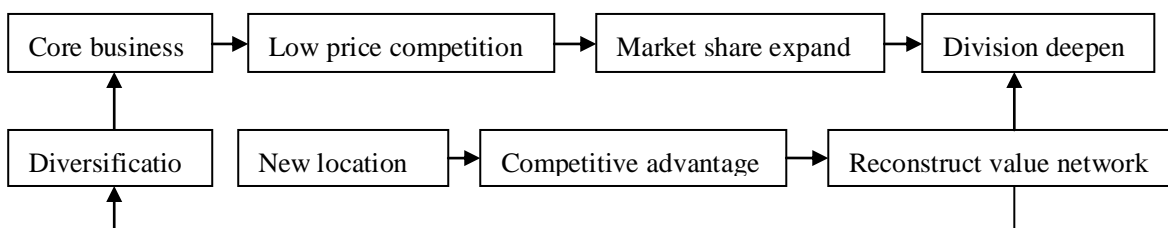


Figure 1 Huawei's binary interaction mode of industry upgrading

Conclusions and suggestions

Winning through the “cascade effect” to establish self-development value networks

The difference of labor division between developed and developing countries, which is the fundamental cause of cascade effect. Transaction costs and income levels are key factors to result in difference of labor division. Under the cascade effect, industrialized countries manipulate the “key resources” that can bring about the greatest benefits (such as key technology, global brand, consumer's demand, etc). Chinese enterprises passively participate in the global division on basis of comparative advantage of low labor costs, lacking of governance right. Therefore, formation of self-development value networks through reconstruction of supply chain, value chain and industry chain, higher returns to scale via deepening of division, which are a momentous way to optimize industrial structure. Enterprises should set up the deepening system of division which is a combination of domestic demand, independent innovation and international market, and cultivate new comparative advantage on account of international division, with the purpose of gaining dominance of industrial structure optimization.

Creating the policy environment for product and technology upgrade, cultivating system integration enterprises of industrial chain

System integration enterprises play a leading role in the process of industrial structure optimization, whose capability improvement is vital for industrial structure optimization, thus it is essential to foster system integration enterprises of industrial chain. For developing countries, strategic emerging industries are leading force in industry upgrade and powerful weapon to compete for division advantage of value chain. Strategic emerging industries should be located at the high-end of industrial chain, such as new energy, new material, information network, biological medicine, and cultivated the capability of independent R&D and key technology. Therefore, the government ought to make supporting policies to encourage system integration enterprises to upgrade product and technology, in order to enhance deepening and division of industrial chain as well as improvement of specialized level. At present, the rise of Shanghai free trade zone provides a new opportunity for Chinese enterprises, which can deeply participate in global value chain and boost global competitiveness. By September last year, Shanghai had attracted 393 multinationals' headquarters; global strategic focus and advanced elements are aggregating in China. Under this trend, we should make full use of preferential policies of Shanghai free trade zone in terms of finance, taxation and trade facilitation, and establish international trade networks, foreign trade zone and comprehensive service platform, so as to foster domestic system integration enterprises.

Following the route of industrial structure optimization from new comparative advantage to competitive advantage

According to Ricardo's theory of comparative advantage, developing countries depend mainly on advantage of primary factor endowments to export primary products. Due to "priced scissors" between developed countries' manufactured goods and developing countries' primary products, developing countries can only get lower benefits. This "peripheral-core" situation enables developing countries fall into "tragic growth" at the early stage of industrial structure optimization. Under the background of global value chain, developed countries' multinationals grasp the core part of value chain, while developing countries stay at low-end of "smiling curve", which passively participate in division of global value chain and enter "cascade effect" zone. Barrier of entry formed by developed countries' monopoly, lost of labor cost advantage of developing countries, as well as competition from other less developed countries with lower cost, which severely impede industry optimization of developing countries. If balanced level of division is not improved, and original division of value chain is unsustainable, it could be pushed out of global division system and stick in "middle-income trap". Therefore, developing countries should select products with new comparative advantage in line with surrounding industrial environment, for the sake of fostering domestic system integration enterprises and establishing self-development value networks. By pushing up reconstruction of value chain, supply chain and industry chain, reduction of transaction cost, supply chain cost as well as deepening of labor division, which enable the division level to transcend "cascade effect" zone into "new comparative advantage" zone. On this basis, we can gradually reduce transaction costs and raise level of division of labor. With deepening of division, developing countries can choose more complicated products according to dynamic change of comparative advantage, then finally enter competitive advantage "zone so as to produce the same products of high division effect as developed countries (as figure 2 shown).

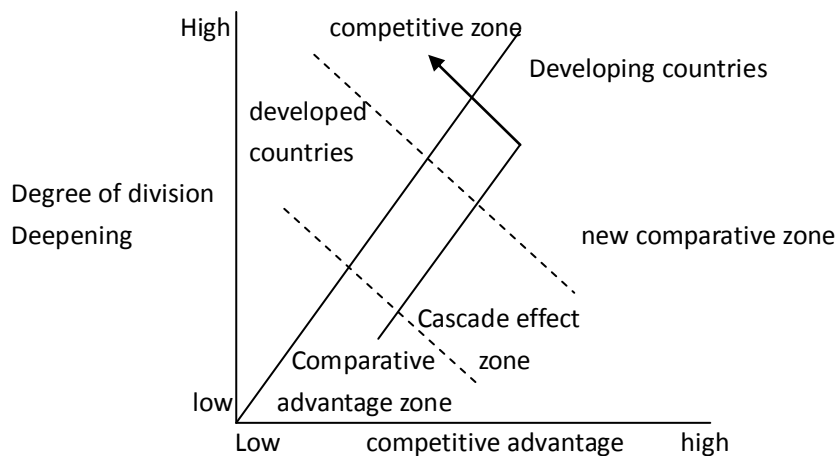


Figure2 upgrading route form comparative advantage to competitive advantage

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