

Research on Countermeasures and Suggestions to Enhance Quality Innovation Catalytic Ability of Liaoning Equipment Manufacturing Enterprises

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Keywords: Quality innovation catalytic ability, Liaoning equipment manufacturing industry, independent innovation

Abstract: In recent years, affected by the saturation of manufacturing industry in coastal areas, Liaoning equipment manufacturing enterprises have also been impacted. On the basis of expounding the importance of quality innovation catalytic ability, this paper analyzes the problems faced by Liaoning equipment manufacturing industry in innovation and development, and puts forward corresponding countermeasures and suggestions, so as to improve the quality catalytic ability of Liaoning equipment manufacturing industry, fundamentally improve the independent quality innovation ability of local enterprises, be more brave and brave under the impact of the blooming manufacturing industry, and realize their own intelligent transformation.

1. Introduction

At this stage, Liaoning's equipment manufacturing industry is in a steady rising state. Since the reform and opening up, the country's strong support for the manufacturing industry has made the development of manufacturing industry reach the peak. In the early stage of reform and opening up, Liaoning produced large-scale military equipment with large output and good quality, and established many military scientific research bases. The development of manufacturing industry is one of the best in the country [1]. However, with the reform of market economy, all kinds of private enterprises have sprung up. They have set up factories in coastal economically developed areas and started generation processing, which makes the equipment manufacturing market oversaturated, which has a strong impact on many small and medium-sized state-owned enterprises [2]. In the era of economic globalization, the market situation is changing rapidly, and opportunities and challenges coexist. For enterprises, changes are flexible. Only by carrying out reasonable reform and innovation within the enterprise in time according to their own situation, can they be reborn under the impact [3]. Nowadays, Liaoning equipment manufacturing enterprises have seriously hindered the process of independent innovation due to many problems such as the nature and scale of enterprises. Even if the operation of enterprises is not getting worse and worse, they should pay more attention to the journey of independent innovation and promote enterprise innovation. This

paper puts forward countermeasures and suggestions on the innovation catalytic ability of Liaoning equipment manufacturing enterprises, so as to improve the innovation ability of enterprises and further maximize the interests of enterprises.

2. Weaknesses of Independent Innovation and Development of Liaoning Equipment Manufacturing Enterprises

2.1. Difficulties in Service-oriented Transformation [4]

Use the "smile curve" value chain theory [5] to analyze Liaoning equipment manufacturing enterprises. For the processing and manufacturing industry with low added value, the profit is weak and the development space is small. If you want to further improve the interests of enterprises. You can choose to develop downstream services and sales. The service-oriented transformation of equipment manufacturing industry is a necessary choice to adapt to the good relationship between merchants and consumers in the contemporary market economy. Customer demand is diversified, but the product is single, which is easy to improve the customer loss rate. For the service of manufacturing industry, the brand promotion, publicity and sales, after-sales service and product maintenance [6] of enterprise products are undoubtedly very important, but most enterprises focus on the expansion of plant area, the improvement of production capacity and personnel recruitment. Blindly increasing the production rate will only cause a waste of resources and be in a disadvantageous position in the fierce competition, this is an urgent problem for most manufacturing industries. The service-oriented transformation requires enterprises to break the transmission operation mode and focus on both service and production. However, at present, most manufacturing industries do not pay enough attention to the publicity of brand and corporate culture to highlight the enterprise spirit. The relevant responsible personnel always fall into the traditional thinking mode and lack the spirit of innovation, which makes the whole enterprise fall into a bad cycle. Therefore, service-oriented transformation is imperative to improve the innovation catalytic ability of Liaoning equipment manufacturing industry.

2.2. The Technological Innovation Achievements of Enterprises are not Significant

The technological innovation process includes product R&D stage, experimental production stage, mass production stage and sales stage [7]. The innovation management of Liaoning equipment manufacturing enterprises includes technological innovation management, while there is less research on technological innovation management in enterprises, which cannot be analyzed according to the specific situation, and there are many shortcomings, resulting in the following problems: (1) Shortage of scientific research talents and loose management; (2) For insufficient market research, the products designed by the R&D department cannot be put into the market, wasting talents and funds; (3) Colleges and universities, scientific research institutions and equipment manufacturing enterprises have not yet realized an effective combination system of industry university research technology innovation [8-9]; (4) The service-oriented situation of manufacturing industry in Article 1 is not optimistic. The products are unsalable and cannot effectively highlight the achievements of technological innovation; (5) The product is put into the market for a long period of time, the benefit in a short time is low, the capital recovery rate of the R&D department is low, the turnover is not good, the scientific research funds are low, and the product R&D is hindered. The above factors lead to the insignificant technological innovation achievements of Liaoning equipment manufacturing enterprises and the lack of guarantee for the R&D of enterprise core technology, which has a negative impact on the independent innovation and development of enterprises and is not conducive to occupying a dominant position in the market.

2.3. The Way of Capital Absorption is Single

Most of Liaoning's local manufacturing industries are famous for state-owned enterprises. Although the support of the state accounts for the majority and the state provides appropriate support in times of crisis, most enterprises are small, which leads to uneven distribution of resources. The era of being able to rest easy with the help of the state is over, and now more enterprises need to work hard by themselves [10]. Looking at the current financing situation of enterprises, most of them rely on bank loans, government support and their own profits. The way is single and the amount of funds is small. They cannot be reasonably allocated according to the needs of departments within the enterprise, especially for scientific research funds, which cannot be used to the greatest extent, resulting in the insignificant R&D effect of the whole enterprise, this is very unfavorable to the development of enterprises. At the same time, the local manufacturing industry has less cooperation with overseas enterprises, so it is difficult to obtain the investment of overseas enterprises, and the way of bond financing is also difficult to be fully utilized due to the development of enterprises themselves.

2.4. The Effect of High-end Industry is not Outstanding, and the Products Tend to be Medium and Low-end

At present, the general situation of Liaoning manufacturing industry is that the medium and low-end products are produced in batches. The whole assembly line and the equipment layout of each workshop are produced in batches, and most of them are basically the best line after studying the process flow. Therefore, for enterprises, they are more willing to maintain the status quo and make no mistakes, however, if we always follow the same rules and regulations, we cannot break through the original model and realize innovation. However, the market competition for medium and low-end products is fierce, and everyone's equipment and product quality are basically equal. However, what moves customers is undoubtedly the service quality and the more important variety. For the equipment manufacturing industry, the cooperation between parts is very important. They are basically forged with national standards, so the complete set of matched parts combination is more welcomed by merchants. There is no need to rush back and forth to select and purchase, saving time, manpower and cost. However, at present, it is difficult for most manufacturing industries in Liaoning and Ningxia to complete such parts group. For parts, the smaller they are, the more sophisticated machines are needed to produce them. Due to the limitation of enterprise scale, the possibility of purchasing precision instruments is small. For large enterprises in the same industry, they have strong strength to realize production integration, so the monopoly between technologies is gradually obvious and they are at a disadvantage in competition. However, most of the high-end industries in Liaoning cover a small area, and the cooperation and exchange with overseas enterprises are small. It is also difficult to contact foreign core technologies, and it is not fully aware of the quality gap between products. At the same time, the phenomenon of "first-class equipment and second-class enterprises" [11] in Liaoning's high-end manufacturing industry is serious, giving people a sense of flashiness and low efficiency, Even if the R&D department does its best to develop new products, but cannot be well invested in practice, the income will be less. Once there is a negative growth situation, the enterprise will reduce the funds of the R&D department. In the past, the vicious circle has begun [12, 13]. This is a more serious situation, so we should pay attention to it.

3. Research on the Countermeasures of Innovation Catalytic Ability of Liaoning Equipment Manufacturing Enterprises

3.1. Breaking the Tradition and Integrating Innovation

With the rapid development of market economy with Chinese characteristics, customers not only have higher requirements for commodity quality, but also gradually change the services provided by merchants [14, 15]. This feature is most significant for the service industry, but it also plays an indispensable role in the whole economic system. Nowadays, the intention of the manufacturing industry for service-oriented transformation is so obvious, but looking at the international market, especially led by developed countries, the manufacturing industry is gradually transitioning from the original "production+manufacturing" to "service+manufacturing", and these countries are fully aware that the benefits brought by integrating the service industry into the traditional manufacturing industry are often greater than the inherent service industry, So they all try to innovate in this field. However, for the overall economic development of Liaoning, this is not a small challenge, but it is also a direction of enterprise innovation. We should dare to think and try, so as to get started slowly and break through the imprisonment. However, blindly adding new elements to enterprises is easy to lose more than gain. The following aspects should be fully considered: (1) The research on core technology will always be put in the first place. The service-oriented manufacturing industry is an innovation based on the mastery of key technologies by enterprises. It is a means to increase profits, and cannot abandon the basics; (2) We should make proper efforts in the marketing and publicity of products, and we should not let the capital circulation of the whole enterprise have problems in the sales link. The marketing process is also a process of investigating the audience of customers. Only by better understanding the needs of customers and investing in them can we realize the realization of raw materials and realize the accumulation of capital, which is an important embodiment of the service-oriented manufacturing industry. The marketing of products shall be promoted through the Internet as far as possible, so as to expand the audience. (3) After the links of product manufacturing and sales have been basically determined, the next thing to be considered is logistics. Logistics, as a pillar industry of the service industry, cannot make mistakes in logistics. Logistics pays more attention to the selection of logistics companies, which is the so-called inter-bank cooperation. Therefore, enterprises should select appropriate logistics companies according to the characteristics of their products.

3.2. Pay Attention to Technological Innovation and Put the Combination of Theory and Practice of Technological Innovation in the First Place

The independent innovation of an enterprise is mainly directly linked to its technological innovation. Now, the obvious defect of Liaoning equipment manufacturing industry is that the stratification of technological innovation is too obvious, and the gap between the strength of enterprises is too large, which is not conducive to the prosperity and development of the whole manufacturing industry. For the high-end equipment manufacturing industry, even though its own strength is first-class, there are few types of equipment, and the overall configuration level of the equipment is still slightly inferior to the competition with the same industry abroad, but the main problem it faces is that it likes to adopt the mode of fighting alone. Although the confidentiality measures for the core technology are well done, it often leads to a situation of complacency in the long run, to deal with this problem, we should develop in coordination with the same type of enterprises or other related systems, absorb more external forces, and improve the technological innovation ability of enterprises with external help, so as to seize the first opportunity in the market. For the medium and low-end equipment manufacturing industry, the mastery of core technology is

less, and the technological innovation of the enterprise itself is less, so it needs the support of the outside world, especially the government and the mutual cooperation of peers. What is more important is that the innovation environment of the enterprise itself and the innovation consciousness of the enterprise as a whole are the most important. Many external objective factors can only be internalized into power by those enterprises that are fully prepared for innovation. Therefore, improving the innovation catalytic ability of the enterprise itself is the only way for the development of the enterprise itself. After completing the above preparation conditions, we should pay more attention to the availability of scientific research achievements. Therefore, there are the following suggestions: (1) Schools, governments and enterprises should establish a good cooperation mechanism, fully flow talents to enterprises, introduce the research results of the school to enterprises at any time, and deepen the interaction with the majority of students by holding professional competitions with the school [16], so as to better display the enterprise concept and culture and enhance cultural self-confidence; (2) Actively organize members of all departments in the enterprise to communicate and express their opinions, which can spark thinking, improve the catalytic innovation ability of employees and the enterprise, fully understand the different ideas of all departments on products, timely feedback and low loss rate.

3.3. Flexibly Handle the Existing Fixed Assets of Enterprises and Alleviate the Pressure of Current Assets

The way for enterprises to absorb funds is narrow, which is greatly related to the scale and operation mode of enterprises. In the middle stage of development, most enterprises will habitually buy a large number of machinery and equipment. This investment is reasonable and necessary for the situation of enterprises at that time. With the pressure of market competition and blindly pursuing output, enterprises often feel that they are unable to do what they want. At this time, the proportion of fixed assets is large and the recovery rate becomes low, Relying solely on the existing single financing mode is far from meeting the investment of enterprises in innovation and development. Therefore, we can consider the disposal of fixed assets. The depreciation loss is relatively large, but we can consider the form of leasing, establish long-term cooperation with other small and medium-sized enterprises, plan the existing machines, lease the idle equipment to other enterprises on the basis of ensuring production efficiency, or obtain the current cash flow through mortgage loans, Thus, it can reasonably allocate funds to various departments, stimulate the vitality of enterprises, and increase research results, which plays an indispensable role in promoting the innovation ability of the whole enterprise.

3.4. Enterprises Focus on National Major Projects and Develop in Coordination with other Enterprises

Liaoning already has a high-end manufacturing industry representing the domestic first-class level, but it is mainly concentrated in Shenyang and Dalian. However, there is still a large gap between the technological innovation level of enterprises and the advanced regions in developed regions at home and abroad. For the analysis of the current situation, with the rapid development of the Internet, Relying solely on technological innovation cannot achieve the expected greater results, and these high-end manufacturing technological innovation is immature, which is fatal to the development of enterprises. Therefore, we should consider the transition of technological innovation to the mode of industrial chain integration and innovation [17], and take the strong high-end manufacturing industry as the core of the industrial chain to drive the coordinated innovation and development of the whole industry [18]. At the same time, we should also establish a perfect and unique supply chain system. The improvement of the supply chain is very important

for the whole industrial cluster and can establish a competitive advantage, It is an original measure to integrate the resources of various manufacturing industries, establish a unique supply chain system on the above basis, form its own unique system, break the traditional competition mode, and avoid being oppressed by the resources of other industries [19-21]. At the same time, within the industrial chain, all organizations can give full play to their role. Each high-end manufacturing industry should choose its own innovation mode in turn according to its own situation, so as to improve its technological innovation ability, so as to develop vigorously.

4. Conclusion

By analyzing the existing deficiencies of Liaoning's manufacturing industry, this paper focuses on the severe situation of service-oriented transformation of manufacturing industry, the low efficiency of technological innovation, the slightly mediocre development of high-end manufacturing industry and the financing difficulties of the whole manufacturing enterprises, and puts forward corresponding countermeasures and suggestions. Through the layer by layer analysis of the above problems, it can be found that, at present, the high-end technology industry in Liaoning Province is unique, but the situation of other medium and low-end manufacturing industries is slightly serious. Therefore, in order to fundamentally solve the problem of insufficient innovation catalytic capacity, we should adjust measures to local conditions. For medium and low-end industries, we should focus on cooperation. On the basis of cooperation, we can obtain more resources and choose favorable conditions for our own development, Create more value for yourself, create utilization value for the whole cooperation system and achieve each other; For the high-end manufacturing industry, we should pay attention to its own cluster effect and drive the surrounding development by itself. At the same time, the core technology should be further developed and the catalytic innovation ability should be strengthened. Through the establishment of cluster network structure, we can make full use of various effective resources and maintain our dominant position under the impact of foreign markets, at the same time, actively develop and narrow the gap with foreign advanced technology as much as possible.

Acknowledgements

This work is supported by 2022 Scientific Research Project of Education Department of Liaoning Province (LJKMR20220986), 2021 Scientific Research Project of Education Department of Liaoning Province (LJKR0224, LJKR0225).

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