Research on the problems and countermeasures of technological innovation in Chinese enterprises

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Abstract: In the face of increasingly fierce international competition, innovation has placed itself at the core of China's national development. This paper analyzes the status quo and problems of Chinese enterprises' technological innovation capabilities, and proposes relevant policy recommendations.

1. Introduction

Innovation is the soul of a nation and the inexhaustible motive force for the country to thrive. Under the background of China's entry into the new normal, the role of technological innovation in enterprises is increasingly emphasized. Technological innovation is an important part of innovation. With the advent of the era of knowledge economy, science and technology are changing with each passing day, and competition among enterprises is becoming increasingly fierce. The essence of competition in enterprises in the market is essentially the competition for technological innovation capabilities. Whoever has strong technical innovation ability, who can win in the competition. This paper analyzes the status quo of technological innovation of Chinese enterprises and puts forward relevant policy recommendations. Studying the technological innovation ability of Chinese enterprises is of great significance to grasping the characteristics and existing problems of technological innovation of enterprises in the new era and improving of innovation ability of Chinese enterprises.

2. Literature Review

The theory of modern technological innovation was derived and developed on the basis of Schumpeter's innovation theory. Schumpeter (1928) first used the term "innovation" and considered innovation as a process concept. Soro (1951) comprehensively studied the theory of technological innovation, and proposed the source of new ideas and the development of the latter stage are two conditions for the establishment of technological innovation. Enos (1962) defined technological innovation from the perspective of behavioral aggregation, arguing that “technical innovation is the result of a combination of behaviors, including choice of invention, capital commitment guarantee, organization establishment, planning, and recruitment of workers." Ferryman (1982) is a well-known scholar in technological innovation. He defines technological innovation as "technical innovation is the whole process of technology, process and commercialization, which leads to the realization of new products,the new technology ,equipment and commercial application." Chinese scholar Hu Zheyi (1992) believes that technological innovation is the whole process of periodic technical economic activities based on the realization of creativity and market success. Its main performances are: the creation and improvement of new products, new processes or new services,the effective development and utilization of resources,the invention and application of new technologies,new demands and the development and occupation of new markets. Zhu Baohong (2003) summarized the research on technological innovation, and believed that domestic research on technological innovation mainly focused on the three categories.The first is to research on technological innovation from the perspective of economics and management.The second is to study technological innovation from the perspective of sociology.The third is to explore the nature and characteristics of technological innovation from a philosophical perspective.

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In the discussion of the characteristics of technological innovation, Huaying (2009) believes that scientific innovation shows the following characteristics.First of all,knowledge resources are becoming more and more important and become the first element of technological innovation.The second point is that the competition for technological innovation focuses on cutting-edge science and technology.The third point is that the main form of innovation is scientific and technological achievements. These scientific and technological achievements are often protected through the intellectual property system. Fourth, from research and development, to the transformation of results and production, it is a necessary link in the complete innovation chain. Fifth, technical coordination is a very important prerequisite. The sixth point is that enterprises and universities, scientific research institutions jointly innovate or enterprises through company mergers and acquisitions, become an effective way to restructure and innovate. Seventh, venture capital supports innovation and becomes the financial pillar of innovation. Jin Wei (2015) believes that China has huge space for technological innovation. He believes that some enterprises in China are paying more and more attention to technological innovation. The funds invested by enterprises and the talents introduced have been greatly improved. And the more attention is paid to technological innovation of independent intellectual property rights.

Through the combing of the literature, we are able to grasp the connotation of technological innovation and the characteristics of China's technological innovation. It provides necessary preparations for the problems and solutions of the technological innovation of Chinese enterprises.

3. Analysis of the Problems of the Technological Innovation of Chinese Enterprises

The imperfect relationship between government and enterprises is the primary problem in the technological innovation of Chinese enterprises. On the one hand, the main body of innovation has not been clearly positioned, leading some local government functions have been lagging behind. And there have been too many administrative interventions, resulting in many companies' technological innovations with strong government behavior. The innovation power of enterprises is insufficient, and their innovation activities and product upgrading cannot quickly adapt to the requirements of the market. Enterprises still have not become the main body of technological innovation investment in the true sense. On the other hand, the government's lack of coordination services for the technological innovation of various institutions has led to blindness in the selection of innovative projects and the decentralization of redundant construction and investment.

Enterprise technology innovation needs to have a good policy environment and legal environment, such as policy support issues, investment in technology transformation funds, market access issues for high-tech enterprises, administrative approval procedures and tax incentives. At present, enterprises generally feel that the policy environment is not loose enough in the process of implementing technological innovation. Insufficient investment in science and technology research, high thresholds for market access for high-tech enterprises, and excessive administrative approval procedures all restrict the technological innovation process of enterprises.

Technological innovation has a spillover effect. Technology spillover effect refers to the overflow of benefits generated by technological innovation activities to others or society in the case of involuntary technological innovation, and there is no return on income from spillover effects. From the perspective of the whole society, the more such knowledge spills, the better. From a enterprise perspective, the less knowledge spillover caused by technological innovation, the better. In order to enable enterprises to have both technological innovation and good social effects, it is necessary to maintain a balance between the two, especially to protect the enthusiasm of enterprises as the main body of technological innovation. Therefore, the protection of intellectual property rights is very important. However, China's law enforcement law, anti-unfair competition law, and the imperfect legal system have hindered the pace of technological innovation.

Whether technological innovation can become a sustainable economic growth point of a country lies in the industrialization of technological achievements. The ability of China's current scientific and technological achievements to be transformed into actual productivity is weak, the degree of high-tech industrialization is low, and the conversion rate of industrialization of scientific and

technological achievements is less than 20%, far lower than that of developed countries.Due to historical and institutional reasons, most of the scientific and technological personnel in China are concentrated in universities and research institutes. The proportion of technicians in enterprises is small, which seriously affects the technological innovation of enterprises.

The technological innovation of enterprises depends on the input factors such as talents and information. Talent is the foundation of technological innovation in enterprises. Without talents, innovation cannot be discussed. At present, the irrational structure of technology innovation talents in China, the uneven distribution, the poor flow of talents, and the loss of talents are increasingly constraining the improvement of technological innovation.Second, China's technology innovation information market is scarce. Chinese enterprises have slow response in terms of technical information, market information, policy information, and institutional information.This has caused enterprises to lag behind in information investigation, collection, processing, forecasting, decision-making, and feedback.

The biggest difficulty encountered in enterprise technology innovation is the lack of financial support and financial investment for in-depth research and development required for technological innovation and industrialization of innovation results. At present, companies are experiencing difficulties in obtaining bank loans, absorbing the capital of venture capital firms, and financing the society through the stock market. The weak financing ability of enterprises is one of the bottlenecks restricting technological innovation of enterprises.

4. Suggestions on Improving the Technological Innovation Ability of Enterprises

The current technological innovation project is first reported by the university or scientific research institution, and then approved by the government department before being transformed into scientific and technological achievements. We must form an innovation mechanism based on the needs of enterprises, adopting an innovation mechanism of government-enterprise cooperation, or an innovation mechanism of public-private cooperation, and exert the enthusiasm of both the government and enterprises.

First, we must improve the legal system for intellectual property protection and impose severe penalties on various infringements of intellectual property rights. At the same time, we must make extensive use of various media to strengthen the promotion of intellectual property rights and enhance the awareness of intellectual property rights among enterprises and the public. Second, we must further improve the laws and regulations that support the development of SMEs. The main body of technological innovation, investment in scientific research, scientific research institutions, risk protection of technological innovation, strategic planning of technological innovation, transfer and use of technological innovation results, and various state support for technological innovation should be given clear and specific provisions in law. Third, we need to open up new direct financing channels for technological innovation of SMEs. For example, it is necessary to set up a venture capital fund to help entrepreneurs with specialized skills but not enough funds to provide support, and to set up loan guarantee institutions.

Some famous universities and professional scientific research institutions have a solid scientific research foundation and at the same time have the ability to accumulate professional knowledge. Enterprises should establish cooperative relations with them, making full use of the resources of scientific research institutions,setting up technology transfer institutions, and building platform carriers to promote the transformation of scientific and technological achievements.

The competition between enterprises should be based on the competition of technology and talent. Talent is an important resource for scientific and technological progress and economic development. First of all, we must establish an incentive mechanism for technological innovation, and create an innovative atmosphere of respecting knowledge and talents within the enterprise to stimulate employees' innovative desire and enthusiasm. In this way, we can continuously improve the quality of workers' work. Secondly, it is necessary to strengthen training, continuously expand the research field of scientific and technical personnel, and improve its knowledge structure, making it a new type of innovative talent with both technical expertise and market vision. Finally,

we must increase the introduction of high-level talents, especially the introduction of key technical talents, technological innovation management talents and talents with comprehensive qualities.

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