The Path of Independent Innovation of
Heilongjiang’s Resource-based Enterprises
Under Low Carbon Economy

Zhihong Yin, Yanqiu Wang and Donghong Yang

ABSTRACT

The motivation of independent innovation includes motivation and maintenance. Through the study of the structure of the dynamic mechanism of independent innovation in Heilongjiang resource-based enterprises, the running process of dynamic mechanism is pointed out, and the independent innovation mode and realization path of resource-based enterprises in Heilongjiang are discussed in order to improve the independent innovation ability.¹

KEYWORDS

Low Carbon Economy; Resource-based Enterprises; Independent Innovation; Dynamic Mechanism

RESEARCH SIGNIFICANCE

At present, the development of resource-based enterprises in Heilongjiang has entered a new stage. On the one hand, the resources are limited. We cannot limit the exploitation of resources. We must innovate independently, improve the productivity and improve the utilization ratio of the enterprises to the resources. On the other hand, with the advantages of domestic competition, we have to have a strong innovation ability. The regional tilt further widened the gap between Heilongjiang and developed provinces. In such a big environment, it is an urgent

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and important task for Heilongjiang resource-based enterprises to seize the opportunity, strengthen the digestion and absorption of the imported technology in Heilongjiang province and improve the ability of independent innovation in Heilongjiang province. It is of great theoretical significance to study the dynamic mechanism of independent innovation capability of resource-based enterprises to improve their independent innovation capability.

THE STRUCTURE OF INDEPENDENT INNOVATION DYNAMIC MECHANISM

The structure of the dynamic mechanism of independent innovation in Heilongjiang resource-based enterprises is considered as a whole, which is composed of the coupling relationship between the independent innovation power and the system environment.

Motivation of Independent Innovation

According to the demand pulling the innovation mode, the industrial chain demand is the starting point of the enterprise's independent innovation activities and power transmission. On the one hand, the pulling force of industrial chain demand will enhance the inductive power of industrial technology added value. The resource-based enterprises in Heilongjiang are in the upper reaches of the industrial chain, and the demand from downstream needs higher requirements for products or technologies in the industry. The pull from the downstream industry chain needs to promote the independent innovation activities of resource-based enterprises, at the same time, it will also enhance the inducement of industrial technology added value. On the other hand, the pull of the demand from the industrial chain will stimulate the innovative influence of entrepreneurs. Industrial chain demand pull force can force enterprises to take innovative actions to retain customers, and entrepreneurs will form innovative consciousness. Thus, it helps to promote the innovative influence of entrepreneurs.

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**Motivation of Independent Innovation**

In the structure of the dynamic mechanism of independent innovation of the resource based enterprises in Heilongjiang, there are also interactions between the motivating power and the maintenance power, which are mainly reflected in two aspects:

On the one hand, it reflects the influence of the excitation subsystem on the maintenance of power subsystem. That is, the impact of entrepreneurial innovation characteristics has a certain impact on the support ability of independent innovation talents, the guarantee ability of independent innovation funds and the driving force of independent innovation technology. Entrepreneurial innovation characteristics affect the importance and devotion of enterprises to innovation. Entrepreneurs with strong innovative characteristics will attach importance to the introduction and cultivation of innovative talents, encourage and stimulate the innovative thinking of the employees, improve the technological level of the enterprises, and do not spare the investment in innovation. These behaviours of entrepreneurs affect the support and innovation technology of independent innovative talents to a certain extent. The driving force and the formation and function of financial support for independent innovation. Therefore, the influence of entrepreneur innovation is positively related to the support of independent innovation talents, the driving force of independent innovation technology and the guarantee of independent innovation fund. Products with high technology added value will create more profits for the innovators, so that the funds invested in new product development will be more abundant. The induction of technology added value promotes the innovation main body to actively invest in the human implementation technology research and development activities, the ability of independent innovation talent is strengthened and the technical level is improved. The latter means the support of independent innovation talents and the enhancement of the driving force of independent innovation technology. It can be seen that the technology added value inducement force can promote the support ability of independent innovation talents, the driving force of independent innovation technology and the guarantee power of independent innovation funds.

On the other hand, it reflects the interaction between independent innovation policy support and industrial chain demand pull pull. Independent innovation policy support can drive the demand pull of industrial chain, while the demand
pull pull of industrial chain can also promote industrial independent innovation policy support.

The Coupling of Power System and Environment

The dynamic mechanism of independent innovation of resource-based enterprises in Heilongjiang runs in a specific environment, and there is a certain correlation between environmental factors. There is a certain correlation between the macroeconomic environment and the pull demand of industrial chain. Good macroeconomic environment will play a strong role in promoting the demand chain of resource-based enterprises in Heilongjiang. The regional environment plays an important role in the formation and exertion of the entrepreneur's personality and innovative influence in Northeast China. To a great extent, institutional environment affects the support policy of independent innovation in Heilongjiang's resource-based enterprises. The construction and improvement of the infrastructure environment in Heilongjiang is conducive to the development of information adhesion ability of independent innovation. The competitive environment of industry will affect the transmission of the independent innovation power of the industry among the innovation subjects.

OPERATION PROCESS OF INDEPENDENT INNOVATION OF RESOURCE-BASED ENTERPRISES IN HEILONGJIANG PROVINCE UNDER LOW CARBON ECONOMY

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The Start of Independent Innovation

The independent innovation activities of resource-based enterprises in Heilongjiang province are pioneered by enterprises with independent innovation in the industry. First, the attraction force of industrial chain demand and the inducement of industrial technology added value directly or indirectly trigger and enhance the influence of entrepreneur innovation, and play an important role in the innovation of the pioneering enterprises, and stimulate the independent innovation will of the innovative pioneering enterprises. Secondly, the support of industrial independent innovation policy, the support force of industrial independent innovation talents, and the fund support of industrial independent
innovation will produce synergy and lotus cooperation, and it will be further transformed into the driving force of industrial independent innovation technology, and promote the innovative and innovative activities of the innovation leading enterprises in the industry.

**Transmission of Independent Innovation**

The fact that some innovative pioneering enterprises rely on independent innovation activities to obtain high income and high market share has played a positive demonstration effect in the resource enterprises of Heilongjiang Province, enlarging the role and effect of the motivation of industrial independent innovation, and stimulating the independent innovation will of innovation following the enterprise. Secondly, the flow of relevant information in the industry promotes the industrial independent innovation policy landing, personnel aggregation, capital flow, technology diffusion, and then continuously amplifies and coupling the role of maintaining power.

**Feedback of Independent Innovation**

The environmental factors have more or less effect on the dynamic mechanism. Under the influence and participation of environmental factors, the power of independent innovation of industry has realized the function of promoting the independent innovation subject of industry to carry out innovation activities. At the same time, the independent innovation activities of Heilongjiang resource-based enterprises are counteracting on the environmental factors and all the power. Through the flow of material, energy and information between the system and the environment, new changes have occurred in the environment and power, and new industrial independent innovation needs are produced. The new round of independent innovation demand will promote the independent innovation subject of industry to carry out innovative activities on a higher level of technology, so that the independent innovation of industry is constantly on the rise.

**THE PATH OF INDEPENDENT INNOVATION REALIZATION**

**Establish the Dominant Position of Independent Innovation of Resource-Based Enterprises**

The establishment of a technological innovation system based on enterprise as the main body, market orientation and production research and research is only to establish the main position of the independent innovation of the enterprise and market oriented, so as to make the choice of the technological innovation direction and target more in line with the market demand, and to form the internal
driving force to maximize the benefit of the profit through innovation; The transformation of scientific and technological achievements.

Choose Advantageous Business Areas and Promote Independent Innovation

Independent innovation must be combined with regional competitiveness, and the enhancement of competitiveness is supported by superior industries. To this end, Heilongjiang's resource-based enterprises must take advantage of their own business areas and take advantage areas as breakthrough points to achieve breakthroughs.

Cultivating a Compound and Innovative Talent

Deepening the development of independent innovation enterprises is inseparable from the construction of talent team, and the deepening of independent innovation is inseparable from the cultivation of compound innovative talents. To this end, we should focus on the training of professional and technical personnel, enrich and enhance the number of compound talents through two ways of independent training and talent introduction. At the same time, we should adjust the relevant policies and rebuild the evaluation standards of scientific and technological talents with ability and performance as the core, and guide scientific and technological personnel to rely on independent innovation to promote scientific research and development work. To carry out and deepen independent innovation.

Create Regional Innovation System and Speed Up Independent Innovation

The complete function of the regional innovation system is the system guarantee to improve the ability of independent innovation. Therefore, the resource based enterprises in the Northeast should set up people's hands and carry out independent innovation by speeding up the regional innovation system. We should give full play to the government's macro regulation and management functions, strengthen the effective integration of innovative resources, promote the reform of social public welfare scientific research institutions and release the potential of basic and public scientific research, and develop scientific and technological intermediary service institutions, and promote the construction of its management network and public information network.

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